

attention to disputes over chronology within the *JdS* during the late 1680s and early 1690s, with a particular focus on the polemics between a certain Paul Perzon and Jean Martianay, and a very thorough examination of the reception and reviews of key works concerning interpretations of the Deluge (a central topic in early modern debates over scriptural authority). The most illustrative instance discussed is Olaus Rudbeck's mammoth *Atlantica*, which was reviewed in both journals around the turn of the century, and which aimed to demonstrate that Sweden was the ancient *Atlantica*, first mentioned by Plato, and that Swedish was Adam's original language.

In the third part Volpe discusses Genesis as both an inspiration for scientific research and a subject of scientific explanation. The ideas of Kircher, Steno, Scilla, Lister, Hooke and others on fossils and the fossil record are mentioned, and their respective reviews and references in the two journals traced. In the penultimate chapter Volpe takes a look at influential books about theories of the origin and formation of the Earth and their reception in the journals. His final chapter examines the reconcilability of the biblical story of Genesis with science, especially as related to Cartesianism. Volpe detects in the *JdS* a much greater 'willingness to separate science and religion' than in the *PT*, in which the 'combining of the two domains was commonplace'. As to the source of this difference, he suggests that the separation of science from religion was easier in a Catholic and absolutist state. 'L'esprit des Lumières', he concludes, is absent from the *PT* at a time when it is evidently present in the *JdS* (p. 422).

Unfortunately, Volpe's interesting thematic-methodological approach is not consistently applied; and where it is applied, it sometimes does not do justice to the complexity of the issues at hand. There are also problems arising from the book's structure, which ends up scattering the narrative and so impeding argumentative flow. The problem is compounded by the cumbersome presentation of the many tables, excerpts and other various data. Nevertheless, this study conveys a great deal of new and useful information, and should find an appreciative audience among scholars of the history of early modern science, religion, scientific societies and print culture.

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KURT BALLSTADT, *Diderot: Natural Philosopher*. Oxford: Voltaire Foundation, 2008. Pp. viii + 246. ISBN 978-0-72948-3. £55.00 (paperback).
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'To date', writes Kurt Ballstadt, 'the only truly comprehensive attempt to appraise [Denis] Diderot's natural philosophy has been Jean Mayer's *Diderot, homme de science*, written in 1959' (p. 1). This half-century of neglect alone justifies a return to Mayer's project. But given the sea change – indeed revolution – that has occurred in the historiography of early modern science during the same period, a new interpretation of Diderot's science is also warranted. Ballstadt is certainly right when he writes that 'since the publication of Mayer's work many new vistas have been opened up' within history and philosophy of science, especially 'new models ... for examining ... a given scientific oeuvre' and 'fresh perspectives on the natural philosophical landscape of the eighteenth century' (p. 1). He is also right that a new synthetic study of Diderot's science framed according to the best recent scholarship would be welcome. Unfortunately, *Diderot: Natural Philosopher* is not that book. It is a very traditionally conceived monograph that describes what Diderot was up to when he was not writing plays, erotic novels and art criticism, or editing monumental, epoch-changing encyclopedia volumes. But it does not succeed in integrating Diderot's natural philosophy with the understanding of eighteenth-century science present in the latest scholarship.

The problems with the book stem from its overall organization and conceptualization. Citing as his source a late text (1775) written for the Russian tsarina Catherine the Great and sketching out Diderot's ideal plan for a university, Ballstadt claims to be able to 'follow in the footsteps of

Diderot himself' (p. 5) by applying this university plan – 'a kind of template for accessing Diderot's conception of the sciences', Ballstadt writes – as a map for understanding Diderot's 'own natural philosophical development' (p. 6). Since Diderot argued in his *Plan d'une université* that students should begin their studies with mathematics, Chapter 1 is devoted to Diderot's mathematics – a woefully understudied topic, as Ballstadt rightly claims, but one that still awaits satisfactory treatment. Chapter 2 deals with experimental physics and Chapter 3 with chemistry, and taken together Chapters 1–3 lead us up what Ballstadt imagines as 'a ladder' connecting the 'abstract foundations' of Diderot's thought to his 'more concrete scientific pursuits' (p. 6). Chapter 4 'moves laterally' from this position by dealing with Diderot's natural history, and Chapter 5 completes the book by looking at Diderot's views on medicine, 'the discipline that in many respects represents the pinnacle of Diderot's natural philosophical thought' (p. 7). A brief conclusion wraps up the book with a summary of Diderot's overall character as a scientific thinker.

As with all methods of approach, this one is not without its rewards. Having divided Diderot's thought in this disciplinary way, Ballstadt works by trolling through the *philosophe's* vast and diverse corpus of writings in search of examples of his thinking in each of these disciplinary fields. The overall result is a largely reliable introduction to Diderot's many scientific endeavours. Since Ballstadt is also a scrupulous recorder of Diderot's own words, many of the chapters offer useful potted summaries of Diderot's writings. These summaries also situate Diderot's texts alongside the relevant books, personages and intellectual debates that informed his work, and from this perspective too the book can be recommended as a largely accurate and well-researched introduction to Diderot's scientific ideas. The particular brand of taxonomic synthesis deployed by the author can also trigger insights, such as a new appreciation (for this reader at least) of the conceptual crossovers within mathematical and chemical discourse of the concepts 'analysis' and 'synthesis'.

But despite these advantages, the structure of the book creates more problems than it solves. Most problematic is the imposition of a modernist disciplinary template onto what few today would doubt is the very different domain of eighteenth-century science. Ballstadt acknowledges that eighteenth-century science was not organized in this disciplinary way, yet he nevertheless deploys a language of discipline-based advance ('leading scientists', 'the latest theory', 'mainstream thinking', and so on) to contextualize Diderot's work. This frame, though offered as a simple heuristic, too often works to reify the disciplines in question, making them into implied historical motivations for the work itself. The book also collapses the distinction between natural philosophy and science, using the terms as interchangeable synonyms to describe Diderot's work. This leads to an effacement of Diderot's fascinating participation in the complex historical process, recently surveyed by Edward Grant, whereby early modern natural philosophy was transformed into modern science. The book also draws upon Cold War philosophy of science (Otto Neurath, Imre Lakatos, John Losee) in very unhelpful ways to establish Diderot's bona fides as a legitimate modern scientific thinker.

This modernist conceptual frame further leads to a heavy reliance on Cold War historiography of science despite the stated intention to move beyond Mayer's 1959 study and develop a new account reflective of the more recent scholarship. The notes and bibliography are in fact saturated with references to the works of Mayer's historiographical contemporaries, while many of the most relevant recent studies of eighteenth-century science are not cited. To give one representative example, the discussion of vitalist medicine, which was central to Diderot's scientific thought, draws upon the work of Fernand Paitre (1904), Aram Vartanian and Jacques Roger (1950s and 1960s) and Elizabeth Haigh (1984), but ignores Elizabeth Williams's *A Cultural History of Medical Vitalism in Enlightenment Montpellier* (2003) – a book that explicitly reconsiders the connection between Diderot and the vitalist tradition in the light of recent trends in

eighteenth-century science studies (gender, for example, plays a role in her analysis). Also absent from the bibliography is Anne Vila's *Enlightenment and Pathology: Sensibility in the Literature and Medicine of Eighteenth-Century France* (1997) and Jessica Riskin's *Science in the Age of Sensibility: The Sentimental Empiricists of the French Enlightenment* (2002), works that speak to the crucial category of sensibility at the heart of Diderot's medical and natural-scientific thought.

The absence of Vila and Riskin is especially telling since these recent studies work from the assumption that eighteenth-century science was driven by dynamics very different from those of the modern sciences. Their insights, therefore, could not have been incorporated into the frame of this study without fundamentally altering its character. Vila, for example, takes for granted that the life sciences in the eighteenth century are misunderstood unless one reads across the modern division that isolates literature from science. Mary Terrall uses a similar understanding in her study of Maupertuis's natural science – a body of thought that was contemporary to and influential upon Diderot's work. Ballstadt, by contrast, evinces no appreciation for this historical or interpretative complexity, treating a work like Diderot's *Bijoux indiscrets*, an erotic novel where, in one memorable passage, a talking vagina discourses on Cartesian philosophy, as just one more archive of statements revealing Diderot's views on 'modern science', in this case his views on the role of affirmation and supposition in experimental physics (p. 78). Texts like the *Bijoux indiscrets* actually have much to teach us about Diderot's scientific thought and its place in eighteenth-century scientific culture (Maupertuis also wrote texts that wedded eroticism with scientific discourse). But these insights can be gleaned only by reading such works in the manner of Vila, Terrall and the best recent historians as exemplars of an alien eighteenth-century conception of natural science, one where disciplinary and professional protocols did not divide science and erotic literature in the way they do today.

Diderot: Natural Philosopher avoids altogether this kind of historicism, and it is accordingly a very backward-looking study of Diderot's science. Those who share its modernist orientation may find the book a convenient summary of Diderot's recognizably modern scientific concerns. But for those longing for the new historicist synthesis of Diderot's eighteenth-century scientific thought, as called for in the book's introduction, the wait continues.

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MATTHEW D. EDDY, *The Language of Mineralogy: John Walker, Chemistry and the Edinburgh Medical School, 1750–1800*. Aldershot: Ashgate, 2008. Pp. xxi + 309. ISBN 978-0-7546-6332-4. £60.00 (hardback).
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Long ago, when I was a graduate student, historians were discovering the importance of the life sciences during the Enlightenment. Not only did this give rise to a number of important and interesting studies, it was also part of a broader reassessment of what Andrew Cunningham and Perry Williams so nicely call the 'old big picture': a picture in which mathematical physics and astronomy held pride of place. As someone who was becoming increasingly convinced that attention to the history of chemistry was equally (or more) crucial to furthering our understanding of (pardon the anachronism) 'scientific' development, I felt triply isolated. Not only did 'mainstream' historians seem to have little interest in the 'arcane' knowledge and practices of pre-Lavoisian chemistry, but I could ride this historiographical wave only by focusing on the possible links between vitalism and chemistry. Even within the community of historians of chemistry, the primary questions being asked of the eighteenth century were oriented around the chemical revolution.

It is thus with great pleasure, and a little nostalgia, that I read Matthew Eddy's polemically (semi-)biographical study of John Walker, professor of natural history at the University of