Minerva (2006) 44:223–227
DOI 10.1007/s11024-006-0011-y

Review

SCIENCE AND DISSENT

Paul Wood (ed.), *Science and Dissent in England, 1688–1945* (Aldershot: Ashgate Publishing, 2004), xii + 274 pp., ISBN 0-7546-3718-2, £47.50

There are two classic theories of the relationship between science and religion in the modern West. The 'conflict thesis', first advanced in the late nineteenth century and most closely associated with the names Andrew Dickson White and John Draper, is no longer taken seriously by historians (although its hold on the popular imagination has proven more tenacious).

The other classic narrative is the 'Merton thesis', named for the sociologist Robert K. Merton, who in a 1936 article adopted the theoretical work of R.H. Tawney and Max Weber, and proposed a positive historical association between Puritanism and the emergence of modern science. This thesis has attracted criticism from historians – some of it focused on the question of what counts as 'Puritanism', some of it pointing to apparent counter examples in Catholic Europe. However, it retains considerable potency as an overarching narrative, partly owing to the more recent work of Charles Webster, who put beyond reasonable doubt the link between Puritan ideals and the promotion of science in seventeenth-century England.

What both critics and advocates of the Merton thesis have tended to ignore, however, is the fact that Merton's interest was not so much in the origin of revolutionary ideas about the natural world, but rather in the emergence of an ethos that would promote what we call a 'scientific culture', in which the values of utilitarianism, empiricism, and rationalism are given primary place. In other words, the Merton thesis has implications that apply not only to the origins of modern science, but reach well beyond to the processes through which, over the course of the eighteenth and nineteenth centuries, science was to become a pervasive and distinctive

feature of Western society. It is with this relatively neglected aspect of the Merton thesis that the eleven essays in this well-conceived volume deal, as they explore in different ways the connection between 'dissenting', or 'non-conforming' Protestants and the progress of science in these periods.

The general case for such a collection is well established by Paul Wood in the opening chapter and in John Hedley Brooke's contribution that offers characteristically perceptive observations on the historiographical issues associated with the project. Both authors acknowledge that 'Dissent' is not a simple category. Brooke also points out that, while the religious convictions of Dissenters may have directly informed their ideas and inspired their activities, the formal disabilities attached to non-conformity meant that the cultivation of science was one of the few avenues open to talented individuals who might otherwise have adopted traditional occupations.

A useful test case for this distinction, perhaps, is Isaac Newton, the subject of Stephen D. Snobelen's chapter. Newton entertained notoriously heterodox views, but because these were not widely known during his lifetime, he suffered no obstacles to social advancement. Snobelen makes a strong case that Newton's religious views had a significant impact on his natural philosophy. Snobelen nicely demonstrates that Newton sought the reform of what in his view were corrupted forms of both natural philosophy and Christian theology.

The various geographical locations that became sites of interplay among science, technology, and non-conformist religion are dealt with in the next three chapters. John Money considers Arnold Thackray's 'Manchester Model', which links the social and intellectual isolation of Northerners with their penchant for non-conforming religion and technology-driven capitalism. While this seems a plausible combination, and broadly consistent with the Merton thesis, Money provides numerous examples that point to a rather more complex situation than that supposed by Thackray.

With the contributions of Larry Stewart and Trevor H. Levere, the focus of the book shifts to London. Stewart builds on his earlier work on the public culture of science with a detailed account of the nexus of radical politics, religious dissent, and experimental natural philosophy. The exclusionary policies of the ancient universities, he argues, contributed to the strength of these tendencies in London, fuelling the fears of those who considered the heady mix

of heterodox religion, republican politics, and public science to be socially destabilizing. Levere traverses similar terrain, but also introduces the little known 'Coffee House Philosophical Society'. While many amongst this group shared the values described by Stewart, Levere points out that – as in the Royal Society – the discussion of politics was excluded from their meetings, if for no other reason than that politics were potentially divisive. Levere draws attention to the informal connections of the metropolitan organization with the provinces, the Continent, and North America.

No study of science and religious dissent in England would be complete without a treatment of the Quakers and science, on which there is already a significant literature. While their success in a variety of endeavours may have been exaggerated, their scientific achievements certainly invite analysis. Geoffrey Cantor provides an exceptionally clear and helpful account of the 'Quaker phenomenon', pointing to the prominence of science in Quaker schools and the 'dissenting academies'. The exclusion of Dissenters from Oxford and Cambridge (mandated by the Test Act, which was repealed only in 1871) served to ensure that the Quakers were far better instructed in the sciences than their Anglican counterparts, who laboured under the 'advantages' of an Oxbridge education. Both the fact of exclusion and the encouragement of science help explain their prominence.

Cantor's account is supplemented by biographical treatments of two Quaker scientists. Hannah Gay considers the possible religious motivations of Silvanus Phillips Thompson (1851–1916), and makes the worthwhile point that Quakers are not easily assimilated into the ideology of either Calvinism or Baconianism. If anything, Quakers were distinguished by the absence of commitment to specific doctrinal formulae, and it may have been this, Gay suggests, that contributed to their capacity to absorb scientific claims that, for other groups, may have had problematic implications. The other Quaker scientist considered in this volume – Arthur Stanley Eddington (1882–1944) – is better known. Alan H. Batten establishes the important place of religious convictions in his scientific work, but concludes that Eddington (unlike Michael Faraday) was not a particularly good exemplar of the 'Merton thesis', on account of his commitment to the primacy of theory and non-utilitarian science.

Treatments of two additional figures round out the volume. Richard Helmstadter considers the case of John Pye Smith (1774–

1851), the first Congregationalist Fellow of the Royal Society. While seeming to subscribe to an older model of Mosaic geology, Pye Smith combined insights drawn from both the historical criticism of the Bible and the new geological sciences to demonstrate the harmony between God's 'two books'. In so doing, he problematized a common view that attributed to evangelical non-conformists a hostile view of the sciences. Thomas Henry Huxley is the other, perhaps surprising, inclusion. In one of the most intriguing essays in the collection, Bernard Lightman points to the influence of nonconformist ideas and institutions on Huxley's development as an agnostic champion of science. Huxley's final position, he points out, might well be represented as Nonconformism without the theology – a view that accords with James Moore's thesis that there is congruence between certain aspects of 'dissenting religion' and evolutionary naturalism.

Each of the essays in this volume has much to commend it, and the reader is likely to glean new insights into the various forms of non-conforming religion and their intersection with scientific activity. As regards the two broad theses, the collection drives a few more nails into the coffin of the 'conflict thesis'. However, its implications for the Merton thesis are less easy to characterize. Certainly, it confirms existing views of the generally positive relationship between Dissent and science. However, the judgment of Paul Wood about the previous literature on the subject – 'no coherent or comprehensive narrative of the shifting relations between Dissent and science from the seventeenth to the twentieth century emerges' (p. 5) – could as easily apply to this volume. This is not necessarily a criticism; it might well not be possible to provide such a coherent narrative. And if, in the long run, some general thesis about the relationship between non-conforming religion and science turns out to be viable, it will be because essays like these have filled in critical gaps in a larger puzzle.

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