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Emergence of a Scientific Culture: Science and the Shaping of Modernity, 1210-1685 (Book Review)

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but an argument could be made that Glory is. Though not so complex a character as Jack, Glory is engaged in her own quest for significance, hurt and grieving over her own recent past, searching for peace and a sense of well-being in her life. She fears and hopes that she may have come home for good to Gilead. To her surprise, Jack ministers to her in her struggle just as she ministers so patiently and gently to him. Her epiphany at the very end of the novel, her recognition of the goodness of her life, is immensely satisfying.

Home is not the kind of novel that rides along blithely on its plot; it moves slowly, character driven. At some point you may look back over the last fifty pages you have read and wonder if anything significant has happened.

Gaukroger, Stephen. *The Emergence of a Scientific Culture: Science and the Shaping of Modernity, 1210-1685*. Oxford: Oxford University Press, 2006. ix + 563 pp., with bibliography. ISBN: 978-0-19-929644-6. Reviewed by Keith C. Sewell, Professor of History at Dordt College

Almost sixty years ago, Herbert Butterfield published *The Origins of Modern Science* (1949), a book that more than many others helped numerous students make the history of science central to their understanding of the history of western civilization. Butterfield's work was significant for its "thinking cap" and "lantern slide" metaphors, which were so suggestive to Thomas S. Kuhn of "paradigm change" fame. Butterfield also maintained that by uncritically reading our notions of "science" back into the times of late-medieval and early-modern Europe, we could be ensnaring ourselves in all manner of anachronistic misperceptions from the crude to the subtle. Butterfield was not, of course, without his precursors and contemporaries—the Americans George Sarton (1884-1956) and Lynn Thorndike (1882-1965), and European giants such as Pierre Duhem (1861-1916) and Alexandre Koyré (1892-1964), had already made important contributions. Butterfield warned against the fallacies of anachronism in the history of science as in other branches of historical study. In the sixteenth and seventeenth centuries, for example, we can find astronomy and astrology intertwined in a complex web of conjecture, discovery, and debate. This complex web has led some to seek the "origins" of *our* truly "modern" science in the nineteenth century—after all, while the word "*scientia*" is of classical lineage, "scientist" comes to us from the century of Charles Darwin and Thomas Huxley. Yet such a stance is less than satisfactory. At the very least, it would seem to under-appreciate the deeper continuities of history; our "modern science" is, in truth, the result of a long process of historical maturation.

In this work, Stephen Gaukroger, Professor of History of Philosophy and History of Science at the University of Sydney, Australia, demonstrates two: to account for how modern science emerged in the West, and to explain why scientific knowledge came to be regarded as the basis upon

But then you recognize that you have been drawn forward, captivated by the subtle growth and change in the relationship between Glory and Jack or Jack's ongoing struggle to understand his relationship with his father.

Does *Home* measure up to *Gilead*? I think it does—as a work of art. But I do not think it will be as popular as *Gilead*, for even though *Home* wrestles with more puzzling and challenging questions than *Gilead* does, its slow pace will put some people off. Nevertheless, it is a fine companion piece to *Gilead*. Both novels move with a patient gentleness; both are inhabited by characters one would like to have as friends; and both evoke a sense of wonder (and sometimes fear) about the deep joys and sorrows at the core of human existence.

which all other claims to knowledge should be assessed. These questions cannot be settled with reference to the nineteenth and twentieth centuries alone. Moreover, as soon as the longer term is taken into consideration, the immense impact of Aristotelian thinking in the late-medieval and early-modern periods must be traversed with care. Accordingly, Gaukroger takes the long view, commencing his discussions with the Paris condemnations of Aristotle in 1210 and 1277 (70 f.). In truth, the synthesis of Aristotelian natural philosophy and Christian theology that we so rightly associate with Thomas Aquinas (d. 1274) enjoyed no smooth path to official (Papal) sanction as latter-day "Thomism"; instead, it encountered repeated challenges from both old Platonism and as well as from varieties of the new Nominalism (80 f.).

This volume traverses the broad late-medieval and early-modern periods. It ends with the beginnings of modern-style reflections on the antiquity of man, which also anticipated the development of scientific geology (496-503), to a point where we find ourselves on the brink of Newton's *Principia Mathematica* of 1687 (352-6, 462-8).

Gaukroger is nothing but thorough; he peers into the nooks and crannies, explores half-forgotten byways, and surveys dead-ends, for these all exhibit their instructive moments. He helps keep us from the pitfalls of anachronism by using the term "natural philosophy," reminding us that this was not a single uniform enterprise but exhibited diverse articulations in fields such as mathematics, mechanics and optics (35, 253 ff.). As befits the author of a full length biography (see his *Descartes: An Intellectual Biography*, 1995), Gaukroger is particularly strong on Descartes (1596-1650), whose philosophical project was a response to the perceived failure of Thomism. That failure was already evident in the writings of Pietro Pomponazzi (1462-1525), who had decisively called into

question the tenability of Aristotelian natural philosophy “in its Christianized version” to “serve in the role of a philosophical foundation for . . . systematic theology” (102).

The relationship between the Christian religion and the pagan thinking of classical Greece remains one of the greatest questions confronting Christian thought and scholarship. Gaukroger does not write explicitly as a Christian, but he is more fully aware of the problems than many contemporary Christians (7, cf. 50). More readily than some of our contemporary scholastic theologians, he recognizes that so-called “Christian Aristotelianism” is an “amalgam” and not intrinsically Christian (77, 80). His assessment is that Catholicism’s adoption of Thomism as “the official Church philosophy” represented a “finely balanced compromise” ultimately destined to unravel (82-3). As he puts it later, “Aristotelian natural philosophy . . . never presented a wholly satisfactory conception of the natural realm as far as Christian theology was concerned, because it failed to capture the single origin of the natural world . . .” (507). Only when “natural philosophy” learned to abandon Aristotle (186, 324) was it possible for what we call “scientific progress” to emerge and achieve a continuous momentum. Contra-Aristotle, men such as Francis Bacon (1561-1626) came to understand the truths of “natural philosophy” as practical and not merely contemplative (228). The result was an outlook that we can

recognize as more decidedly modern, marked by a shift from how best to live in the world to how the world might be changed for the better.

For all his insights, not all of Gaukroger’s assertions will pass unchallenged. Certainly, the first Jewish Christians, both at home and across the *Diaspora*, were subject to varying levels of Hellenization, but not all readers will be ready to concur that the canonical authors Paul and John should be numbered among the Hellenizers (61, cf. 83). There is an issue of New Testament interpretation here that should not pass unchallenged (see also 377-8 and 397-9), especially as Gaukroger adumbrates his view that it was not the physical sciences that eventually were to threaten the faith *but the emergence of a certain kind of historical-mindedness* (3, 23), perhaps because—yet also in spite of—Christianity itself being so historically grounded. And across the extensive vistas he commands, it is not altogether clear that our author here achieves his objective of explaining precisely why scientific knowledge came to be widely regarded as the basis upon which all other claims to knowledge would be assessed by the end of the seventeenth century. Gaukroger is philosophically formidable, but something seems to be missing here *historically*. However, the “Preface” informs us that this is but the first of five projected volumes, so patience will be in order as we expectantly await his conclusions.