

SEB FALK, *The Light Ages: The Surprising Story of Medieval Science*. New York: W. W. Norton & Company, 2020. Pp. xix, 391; black-and-white figures. \$30. ISBN: 978-1-3240-0293-2.
doi:10.1086/722949

In *The Light Ages*, Seb Falk weaves a richly textured tapestry of medieval science, and a surprising one to boot, revealing the efforts of John Westwyk (d. before 1401), a Benedictine monk. With narrative brio, the author pulls together diverse threads, covering topics from simple arithmetic to spherical trigonometry; from astronomy and medicine to astrology, magic, and bestiaries; from transcultural knowledge production to the Crusades; from English monastic life to the vibrant university culture of Oxford and the buzzing streets of London.

The story starts with a Middle English treatise, the *Equatorie of the Planetis*, which describes the construction and use of an astronomical instrument called the *equatorium*. Falk sees in its author, John Westwyk, “the perfect guide to the story of medieval science” (11), and so we first follow this monk from his presumed birthplace of Westwick (also known as Gorham) to the nearby abbey of St. Albans. He took his vows in the 1370s and may have attended the University of Oxford—at least, his advanced astronomical learning suggests as much. The first definitive record of his life is from about 1379, when Westwyk copied and annotated two astronomical treatises by Richard of Wallingford. By 1380, Westwyk had left the abbey for Tynemouth Priory, and he joined Henry Despenser’s crusade in Flanders in 1383. We have no further records until 1393, when he wrote the *Equatorie* in London. Falk impressively masters the feat of reconstructing a captivating story from very few sources and using it as a vehicle to transport us into the world of medieval science.

As we follow Westwyk through his life, Falk explains mathematical, scientific, and technical details of medieval science and instrument-making—be it the “Russian peasant method” of multiplication, astronomical trajectories on a sphere, or the mechanical details of the *equatorium*—with admirable clarity and always in their context, enlivening his account with historical anecdotes. At the same time, we are asked to reflect on our own presuppositions about “science,” and the subtitle of the North American edition, “The Surprising Story of Medieval Science,” immediately reveals the book’s framing: medieval science is “surprising” against the widespread belief that the Middle Ages were “dark ages” as far as scientific knowledge is concerned. The author hopes his readers will come to recognize “the family resemblances between the activities described in this book and their descendants in modern science” even though “much has changed in motivations, methods and language” (9).

Falk elicits this recognition by attending throughout to the sequence in which he introduces medieval science and to the reader’s probable reactions. At the beginning of the book, we see that the medieval astronomical treatises and instruments dealt very satisfactorily with problems of the period, whether in agriculture at the Westwick manor or monastic life at St. Albans; later, we learn that a network of scholars from all over Europe and the Mediterranean had contributed to these theories and practices from antiquity through to Westwyk’s times. From both their empirical content and their theoretical sophistication, therefore, readers can conclude for themselves that astronomy and astronomical instrument-making were plausibly “scientific”—without needing the author to spell out necessary and sufficient conditions of “scientific” or “science.” This allows Falk to make his case convincingly through first-order descriptions, without having to introduce complicated second-order reflections about the analytic concepts employed.

Yet there are some limitations to this strategy. For example, what about the “scientific” status of astrology, magic, and bestiaries? Perhaps Falk believes that his readers will have shed enough of their prejudices by the time they encounter such borderline cases to be more generous about these sciences as well. However, such an approach risks neglecting the epistemological dimension of calling a historical theory or practice “scientific,” which after all is

not merely a matter of recognizing a family resemblance with today's sciences, but also connotes what "scientific knowledge" is, or could have been. Indeed, when Falk says that "understanding the history of scientific ideas in their proper context" makes us "appreciate that science does not progress in a constant straight line" (9), he himself seems to assume a much tighter connection between science *simpliciter* and medieval science than a mere family resemblance. Drawing connections based on a historicized epistemological concept of scientific knowledge would have strengthened the author's point, and thirteenth- and fourteenth-century philosophical discussions about *scientia*, which could have fitted neatly into Falk's portrayal of university learning in chapter 3, would have offered an excellent path in. Medieval philosophers explored epistemological problems in great depth (for example in their commentaries on Aristotle's works), and historians of medieval philosophy have reconstructed some such medieval theories of knowledge. This might have made the "story of medieval science" even more "surprising," first, because our recognition of medieval science as such could be based on more robust epistemological criteria, and second, because the resulting story could further historicize our existing intuitions on science and scientific knowledge. Nevertheless, Falk's study is itself already a powerful contribution to rehabilitating a neglected episode in the history of science.

Although the book primarily addresses a nonspecialist audience, it can certainly be recommended to medievalists and historians of science as well. Medievalists outside the history of science will find it an excellent introduction to the science of the period, while historians of science—especially those interested in medieval astronomy—will benefit greatly from Falk's fascinating story, which also invites us to explore the *Equatorie* and its context in much more detail. The extensive annotated bibliography provides an excellent guide for that endeavor.

DOMINIC DOLD, Max-Planck-Institut für Wissenschaftsgeschichte

STEFAN FIGENSCHOW, RICHARD HOLT, and MIRIAM TVEIT, eds., *Myths and Magic in the Medieval Far North: Realities and Representations of a Region on the Edge of Europe*. (Acta Scandinavica 10.) Turnhout: Brepols, 2020. Pp. 280; color and black-and-white figures. €75. ISBN: 978-2-5035-8823-0.

Table of contents available online at http://www.brepols.net/pages/ShowProduct.aspx?prod_id=IS-9782503588230-1.
doi:10.1086/722943

The book under review has two introductory essays and ten articles that deal with the northernmost part of Norway in the Middle Ages, known as Hålogaland and Finnmark in the sources. As the title of the book suggests, this area is located on the edge of Europe geographically and culturally: it was a multi-ethnic region where different cultures encountered one another. The book examines the North, described by medieval sources as a mythical place, partly because not much information was available from this distant area and its peoples, and because the Sámi people living there were very different from the Christian, Norse farming communities in the South and West. Miriam Tveit's introductory article gives a solid overview of how non-Scandinavian medieval sources described this area.

Lars Ivar Hansen's contribution is a translation of an older article that came out in 2000 but is still relevant. As Hansen points out, it is remarkable that the *Historia Norwegiae* does not describe the Sámi completely as "others," but rather as a group with whom the Norse people could be in contact and even conduct trade. Eleanor Rosamund Barraclough's article dives into the mythical or half-mythical toponyms of the North in saga literature, which describes these places as inhabited by giants, dwarfs, and other creatures.

Peter Snekkestad's article examines the so-called Utrøst tales of Hålogaland and Trøndelag, which are related to local fishing culture. Marte Spangen's contribution is an important