

interpretive frameworks” (302). However, a number of those in science studies who followed Polanyi, Popper, and Kuhn took their pioneering insights about the social grounding of science in directions the first generation never intended and which often distressed them.

Thus, Nye’s final chapter (the Epilogue) deals with movements such as SSK (sociology of scientific knowledge) and such figures as Barry Barnes, Harry Collins, David Bloor, Steven Shapin, and Bruno Latour. In one way or another they each raised questions about science’s special claim to truth and the disinterestedness not only of individual scientists but of the scientific enterprise as a whole. Even the ability of science to truthfully describe reality was called into question. Such impieties evoked strong, sometimes outraged reactions from many (although not all) scientists and numerous other defenders of science’s traditional claims. One very unfortunate result was the so-called science wars of the 1990s which, *inter alia*, gave rise to much hyperbolic rhetoric and *ad hominem* attacks, leaving behind fractured friendships and a bad taste in many mouths before finally petering out.

The scholarship behind Nye’s book is both wide and deep; its organization very thoughtfully plotted; and its presentation remarkably coherent, given the many-layered narrative. Due to the scope of the inquiry, readers like this reviewer may encounter individuals and ideas previously unknown to them from the fields of sociol-

ogy, philosophy, economics, and politics, in addition to a number of lesser known scientists. There were times when one wished for a scorecard to keep track of the players, but Nye has made a determined effort to focus attention on the main story lines by judicious choice of chapter titles, final paragraphs that adumbrate the thrust of the following chapter(s), and chapter openings that introduce some of the principal issues at stake in what follows.

The Epilogue summarizes the work’s overarching objective as follows: “It has been the argument of this book that Polanyi’s concern with a new epistemology of science evolved out of the experiences of his changing scientific career in Austro-Hungary, Germany and Great Britain during the revolutionary and catastrophic decades of the early twentieth century” (302). Nye’s case in support of this assertion is totally compelling. As she has also made clear, the contentions from this rich period of innovation and criticism continue to reverberate throughout the sciences, academia and the larger political and social sphere. Nye’s nuanced and persuasive narrative will amply reward the reader who gives it the close attention it deserves.

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Prospero’s America. John Winthrop, Jr., Alchemy and the Creation of New England Culture, 1606-1676, Walter W. Woodward, The University of North Carolina Press, Chapel Hill, 2010, viii + 317 pp, ISBN 978-0-8078-3301-8, \$45.

John Winthrop Jr. was born in Groton, England, in 1606 and educated at Trinity College in Dublin. In October of 1629, his father, John Winthrop Sr. (1587/8-1649), a wealthy Puritan, was selected to lead Massachusetts Bay Company’s Dissenting Puritans to the colony. Winthrop the elder served as Governor of the Massachusetts Colony from 1629 until his death. His rule was marked by religious moderation. Winthrop the younger arrived in New England in 1631 and was appointed Governor of Connecticut and of Saybrook in 1635. He returned to

England and remained between 1641 and 1643, then returned to America and founded what is now New London, Connecticut, in 1646. Winthrop served as Governor in 1657-1658, and again in 1659. Winthrop the younger’s rule was similarly moderate and tolerant and he took an active stand in opposing the execution of “witches” in seventeenth century New England.

The younger Winthrop developed an early interest in Christian alchemy while studying law at London’s Inner Temple in 1624. He attempted to make contact with members of the Brotherhood of Rosicrucians during this period. His growing interest in science and notably alchemy led young Winthrop to book passage to Constantinople to seek the wellsprings of alchemy. Modern studies of alchemy, notably by William Newman

and Lawrence Principe, have done much to give what they term “chymistry” respect and standing in laying the foundations for the chemical science that began to emerge during the seventeenth century. Winthrop was sympathetic to those “who believed Christian alchemy could hasten the pansophic—that is, divinely sanctioned, knowledge-based—reformation of the human condition.” These were guiding principles in his initiatives to create new industries in Connecticut as well as in his formulations of medicines that gave him a widespread and benign reputation in early New England among the European transplants as well as indigenous peoples including the Pequot Indians.

The inspirational use of alchemical “magic” to bring about cures and improve the economy in a distant (from England) land evokes the character of Prospero, the principal protagonist in Shakespeare’s *The Tempest*, believed to be written in 1610–11, not long after Winthrop’s birth. This reviewer cannot avoid mentioning the interesting, but unrelated, fact that Groton, Connecticut, is the headquarters of Pfizer, the world’s largest pharmaceutical firm, with facilities located briefly at nearby New London.

The first two chapters discuss the “intellectual etiology of the occult alchemical philosophy” of the period. It has much more to say about the philosophical dimensions, as represented by such as John Dee and Robert Fludd, than the practical chymistry of, say, Johann Glauber—although the latter’s spiritual and religious beliefs are discussed. The next three chapters detail Winthrop’s activities in applying alchemical practices to agriculture, mining, metallurgy, and medicine. Chapter 6 details Winthrop’s beliefs in alchemical healing (“God’s Secret”) in the context of New England’s early medical culture. It had been noted earlier in the book that the deadly impact of smallpox, which largely spared the colonists, was cited as proof positive of the Puritans’ divine mission. Chapter 7 describes Winthrop’s impact in ending witchcraft executions: “With the assistance of the alchemist-minister Gershom Bulkeley, Winthrop helped create a definition of diabolical witchcraft that would

end witchcraft executions in Connecticut permanently and help end them in all New England for more than a generation.” The final chapter focuses on the transatlantic dimensions of alchemy. Winthrop interacted with distinguished scientists of the period, including Robert Boyle, and on January 1, 1662, became the first colonial member of the newly-formed Royal Society.

It is fair to say that readers hoping to find much about early chymistry and alchemy will not find very much in this book. It is focused to a much greater extent on seventeenth-century history and politics and is amply footnoted. However, this book is rich in details and insights that will please historians, scientists, teachers, and interested lay people alike. The Old World–New World juxtaposition of such as George Starkey is fascinating, as described in detail by Newman in his book *Gehennical Fire: The Lives of George Starkey, An American Alchemist in the Scientific Revolution*. Starkey graduated from Harvard in 1646, moved to England in 1650, made his reputation in alchemy, and Newman notes that Starkey’s book *Secrets Revealed...* (1669) was cited by Isaac Newton more often than works of any other alchemist of the period. In *Prospero’s America*, Woodward successfully makes the case for how widespread and important alchemical beliefs as well as chymistry were in seventeenth-century New England. Apparently, half of Connecticut’s populace had received treatment with Winthrop’s medicines. Another fascinating theme that imbues the book is the complex politics between New England Indian tribes among themselves as well as with the European settlers. Winthrop’s credibility as a medical practitioner as well as a powerful figure in politics and business allowed him to move effectively between cultures.

In summary, this book provides a very accessible entry into the surprisingly profound role that alchemical beliefs and the practice of chymistry played in the culture of seventeenth-century New England.

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