The Practical Renaissance: Information Culture and the Quest for Knowledge in Early Modern England. Donna A. Seger. London: Bloomsbury Press, 2022. xii + 231 pp. $35. Hardcover ISBN: 9781350200241.

In recent years, interest in the history of knowledge has grown rather substantially. This growing fascination has resulted in new formulations and interpretations of what knowledge, in the historical sense, is and its place within the historical tradition. Often when one thinks of knowledge, they think of that form associated with high culture which specifically appeals to the philosophical or intellectual concerns of the elite. Yet knowledge is not something restricted to the realm of the elite. Donna A. Seger's *The Practical Renaissance* fills this gap by examining the emergence of the growing need for publications in "practical" knowledge in England between the years 1500-1640 CE. Taking a sweeping approach, Seger examines the intellectual development and technological innovations brought about by the knowledge associated with the practical fields of medicine, husbandry, navigation, and military affairs. It is in this discourse that Seger argues that "the practical renaissance" and its innovations "laid the foundation for the British Empire" (16).

The first two chapters of this work discuss how Early Tudor England marked an era of intellectual recovery with a demand for information focused on practical application. Seger notes that the works of Thomas Elyot (1490-1546 CE) and John Fitzherbert (d. 1531 CE) exemplify a transitionary moment in the history of knowledge in England which highlights the conflict between the rediscovery of old knowledge, often manifest in the abstract, with the current nature of applied or experienced knowledge (18). A great deal of focus is given to the publication of medical texts that specifically aimed at getting their readers to perform an action, not just contemplate upon the words within. Seger notes that two diverging theories of "diet" laid out by medical practitioners trained in either the Baconian or Salernitan traditions dominated the study of medicine. It is from these two schools of thought that the continuation of late medieval knowledge was adapted and used in conjunction with classical and contemporary knowledge in what could be called "'new' alchemical medicine" (20). These works, in turn, bring attention to the emerging conflict between the professionalization attempts of the College of Physicians and popularization attempts made by non-physicians such as Elyot found in the notion of a "medical hierarchy." This apparent conflict between the theories founded by university-trained medical practitioners, the practicing surgeons, and apothecaries is an idealistic notion which does not reflect the reality of seventeenth-century medicine (27). Lastly, Seger concludes with the husbandry texts of Fitzherbert, all of which in combination, to discuss the shift towards practice of knowledge over the science of knowledge as a response to "contemporary challenges and opportunities" (44). These challenges and changes marked a "revival" in fruit cultivation, which demonstrates a growing awareness that the theories posed in classical texts were less effective when applied in practice. Chapter two introduces the second field of knowledge that experienced a period of rediscovery brought about by new practical demands: mathematics. Seger notes that "mathematics can hardly be counted among those ancient arts 'rediscovered' by the Renaissance" (45). Here, mathematics as a unifying practice for fields such as geography, navigation, military engineering, and astrology, all of which wedded the prac-

tical and theoretical forms of knowledge through the theories, instruments, and practices themselves. Two individuals set the stage for subsequent mathematical literature in Seger's assessment, Leonard Digges and Thomas Digges. For Seger, these two mark the "emerging scientific method of experimentation and mathematical analysis in England, with promises of spectacular results" (49).

Chapters three and four looks beyond the process of gathering information and into a period of intellectual critique during the Elizabethan era. It is during this time that revived information became subject to an intellectual scrutiny brought about by this period discovery and a new inventive "spirit" (64). During this time information is challenged and expanded, resulting in both mechanical and theoretical innovations. At the start of chapter three, Seger notes that the medieval tradition of amassing knowledge in written form had lasted as a conservative intellectual tradition into Elizabethan England; however, it, too, was subjective to the new intellectual trends of the period. Intellectual authority relied less on classical authors, and discourse often referenced thinkers who were contemporary with the writers of these practical manuals. Specifically, Seger looks at plague tracts which brought together writings concerning the causation, spread, cures, and general preventions of plagues. Though these works are marked with astrological theories of medicine, the waves of plague between 1563-1636 CE called for innovations in alchemy, which Seger notes "in terms of the practice of English medicine it was primarily practical and chemical" (67). Though Seger notes the focus of alchemists was to reveal the hidden or occult properties of the organic world, innovations in English medicine were brought about by the addition of new challenges and materials which did not have a foundation in past intellectual traditions. What is most interesting in this chapter is Seger's examination of the growing interest in reproductive health specifically for women. Though the written texts contain information concerning anatomy and childbirth, Seger's section about the witch trial of Elizabeth Jackson presents a fascinating intersection of practical and theoretical knowledge. Here Seger shows how this growing interest in women's health came to the defense of Jackson, when Dr. Edward Jorden confirmed "that Mary Glover was in fact not bewitched by Jackson, but instead suffered from 'suffocation of the mother'" (86). In chapter four, Seger further demonstrates the "spirit" of invention by noting how books published prior to the Elizabethan era were strictly based on observation, which gave way to experienced knowledge based on mathematics, geography, and the instruments of navigation. Here Seger argues that "the navigational revolution" built upon the mathematical theories of John Dee which brought with it, the need for technological innovations. Seger shifts to William Bourne who developed fantastical things such as a leather diving suit and "sunken ships" (102). What is most fascinating here is his defense of his mechanical experiments by arguing that automata operated not on the basis of enchantment, but on "the skillful fashioning and alignment of wheels and springs" (103).

The last two chapters examine the process of the commercialization and subsequent publicization of knowledge. In chapter five, Seger argues that the practical knowledge produced and diffused in the seventeenth century was shaped by the experience of "collective utility," diffused information though a utilitarian lens (117). In the epidemics between the years 1603-1636,

in London many were questioning the value of the Physician, who when faced with treating the plague, chose to flee, and subsequently shifted the blame of the poor conditions on the practitioners of medicine who were not apart of the College of Physicians (119). Indeed, Seger notes that Nicholas Culpeper argued that Physicians "had transformed both Apothecaries and the Barber-Surgeons into 'crutches,' but the corporate conflicts continued for the rest of the century" (123). As Seger notes, Physicians were quick to discredit the medical practices of wise women, spell-casters, wizards, astrologers, and other lay practitioners of medicine for having trusted too much in experience and less on "reason" (125). The sixth chapter brings this work neatly to a close by examining "knowledge-mongering" throughout the entirety of the period covered in the work. "Popular texts" about medicine often presented both knowledge and practice, and this theme shaped the information of the examined period (145). Thus, whether it be a treatise of military and mechanical knowledge, navigation, or even fireworks, the wedding of practice and theory conveyed knowledge by either presenting the texts in a rediscovered manner through the collection or gathering of information or by synthesizing this information into a "finished product" or tool that could be utilized by the reader (162).

In the end, it is hard to do justice to such a thought-provoking survey of knowledge. This well written and well-argued work provides enough analysis to provide further avenues of research for the historian interested in the history of knowledge and information. It will be interesting to see where the study of practical knowledge will go from here thanks to Seger, as thinking beyond the framework of the knowledge associated with the learned elite is truly worth further exploration. In addition, this work is also of great value to those instructing undergraduates. For the undergraduate, Seger's thematic selection coupled with her clear presentation of evidence is sure to keep the attention and sate the interests of even the most ambitious and enthusiastic students.

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