(Frankfurt, 1598), which incorporated chapters not in Dioscorides' Greek text, adding the *notha* (synonym-lists) that had descended into the Renaissance alongside the text itself. Goodyer quite frequently replicated the Latin transliterations of Greek names for plants, thereby increasing confusion, in striking contrast to Dioscorides' careful precision. Now Lily Beck, a professional classicist who also knows her botany, has rendered Dioscorides accessible to anyone who reads good English. John Scarborough's introduction gathers the few biographical data on the talented author of the *De materia medica*, and is a valuable guide to contents, the history of the text, and Dioscorides' sources of information.

Dioscorides' writing style employs a paucity of words and is similar to modern science articles. He tells his readers to disregard style and pay attention to the content. He explains that, for each plant, he first read what the previous authorities had reported (often citing by name), then he travelled widely in a "military-like life", observing the plants in their habitats, talking with the people about their experiences with drugs, and finally "testing" their actions himself. Only then did he have a fact he trusted, which could be related. Beck observes in her introduction that the text is mostly devoid of what we call magic and superstition. Where there were uses that he would not endorse, he prefaced them with words to distance himself, such as, "it is reported", "they say", and "it seems". Even so, occasionally Dioscorides slipped, such as with the plant *scilla*: "ward[s] off evil when hung whole on front doors". Beck's point withstanding, Dioscorides' keen talents were remarkable in observing the effect of natural drugs on humans (and occasionally animals). In our time when alternative medicine is receiving renewed interest, one should keep in mind that natural product drugs are the result of human experiences, mostly intelligent ones.

Each chapter begins with the Greek term in the Greek alphabet and, in the case of plants, followed by the binominal scientific name with the English term. For identifications, Beck used the standard authorities; when authorities disagree, she has notes, although modest in discussion. Translating ancient Greek medical terms is perilous: for example, is *podagra* exactly our gout?; is *asthma* our asthma? The list is extensive and, for this reason, medical researchers are still advised to consult the Greek terms' lexical ranges. Particularly difficult are Greek terms for dermal lesions. (Beck should be excused from the publisher's unfortunate spelling of "Anarzarbus" on the cover.)

Lily Beck employed Max Wellmann's critical text in three volumes published between 1906 and 1914 (reprinted 1958). Having seen most of the Greek manuscripts, I am of the opinion that, despite Wellmann's erudite scholarship, a new Greek text should be made, but even after it is, Beck will survive as the standard English translation. Before publication, Beck asked me to read her translation but, alas, I was unable to do so at the time and instead gave her a very small modicum of advice. Beck's translation embodies sensitivity to Dioscorides' meaning that even a classicist, who is reading the Greek, would want to consult. So, now the medical historians can toast Beck's work with a cup of herbal tea.

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Bruce T Moran, *Distilling knowledge: alchemy, chemistry, and the scientific revolution*, New Histories of Science, Technology, and Medicine, Cambridge, MA, and London, Harvard University Press, 2005, pp. 210, $24.95, £16.95 (hardback 0-674-01495-2).

Moran begins this short, introductory book by asking how alchemy, a seemingly disordered and irrational pseudo-science, fits into a discussion of the scientific revolution. His answer, like that also offered elsewhere by William Newman and Lawrence Principe, is that alchemy is—or rather *was*—chemistry. Moran points out that sixteenth- and seventeenth-century alchemy, "although motivated by assumptions about nature not shared by many today, still occasioned an intense practical involvement with minerals, metals, and the making of medicines" (p. 2). Moran, however, is less interested in the precise nature of this practical involvement than in what its

development and the changing contemporary discourse around it tell us about "the creation of new learning" during this crucial historical period.

Moran's account of this process begins with the tradition of what he calls "distillation alchemy", and it is this tradition that leads us in to what is so relevant and important about early modern "chemistry" for the history of medicine. In the late thirteenth and early fourteenth centuries, John of Rupescissa, Raymond Lull and Roger Bacon all sought "a super-medicine, an elixir or *aqua vitae* that could purify physical bodies of their impurities, rid the human body of disease, and prolong life" (p. 11). All looked back to the works of the Arabic writer, Jabir ibn Hayyan. Through distillation, Geber (as his name was Latinized) believed it would be possible to separate the essential parts of nature into the purest substance of all. This ultimate substance became known as the quintessence or fifth essence, and, using (and sometimes discovering along the way) oils, alcohol, salts, minerals, metals, acids, alkalis and the dividing effects of fire, it was in the rarefied, secluded space of the laboratory that alchemists sought the inner essence of all nature.

This search, along with the processes and substances that might facilitate it, preoccupied the minds of many important Renaissance and early modern philosophers, from Paracelsus in the mid-sixteenth century to Boyle and Newton in the late seventeenth. As Moran points out, this pursuit was not isolated from other intellectual practices. Alchemy could and did join forces with mathematics, medicine and other experimental sciences, with the lofty career of Robert Boyle being an obvious case in point. Thus when Jean Beguin came to define alchemy—or as he also called it, chemistry—in 1669, it was to him "the art of dissolving natural mixed bodies, and of coagulating the same when dissolved, and of reducing them into salubrious, safe, and grateful medicaments" (p. 113). For his contemporary, Christofle Glaser, apothecaries "relied on chemistry to teach them how to make compositions, how to preserve the virtues of their ingredients, and how to separate the pure from the impure parts of mixtures" (p. 118). Put like this, it is clear to see how alchemy possessed a methodology and purpose aligned to what is considered the emergent modern scientific method of observation and experimentation.

Its emergence as modern pharmacy, however, was only part of the process by which alchemy gradually shed its skin and became something else. It also had to lose its (more infamous) association with transmutation—the process by which it was believed that with this same elixir, medicine or Philosophers' Stone, base metals could be turned into silver and gold. The medieval Church's condemnation that "They promise that which they do not produce" haunted alchemists down the centuries: theirs was a suspicious, specious, and even perhaps heretical, claim to knowledge.

Thus Moran suggests that "if we are looking for a place where 'alchemy' was redefined and discarded in favour of 'chemistry'" we could do worse than look to the French royal apothecary Nicholas Lemery's *Course of chemistry* (1675) (p. 119). For Lemery was amongst those philosophers who, like Descartes, sought a clean break with previous interpretations of nature: "Lemery cast alchemists into the ranks of frauds and impostors who were (all of them) solely concerned with making gold. Redefining alchemy in this way allowed chemistry to shed any connection to dubious alchemical practices. Chemistry was laundered so as to have an untraceable history. By virtue of its shared methods and types of inquiry, it claimed to be a distinct and unprecedented form of knowledge possessing its own rational mode of discovery. The new perception of chemical experience excised perceived alchemical lies and deceits and turned what had been practical alchemical wisdom into new chemical facts" (p. 119).

Moran writes of sometimes complex philosophical ideas with an easy, approachable style. As well as offering an interesting account of alchemy and chemistry in early modern Europe, he presents a good exercise in scholarly historiography that will be of value to many students new to this subject.

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