Book Reviews

Bruce T. Moran: *Andreas Libavius and the Transformation of Alchemy: Separating Chemical Cultures with Polemical Fire*, Sagamore Beach MA: Science History Publications, 2007, 344 pp. [ISBN 978-0-88135-395-2]

Situated in northern, Protestant Germany amid the intellectual ferment and social disquiet of the decades prior to the Thirty Years' War, Andreas Libavius witnessed the rising cultural influence of Paracelsian medical philosophy, which proliferated in new editions from German printing houses, was gaining a foothold in the politically powerful princely courts, and was establishing promising beachheads in the academic world. Alarmed by the Paracelsians' religious heterodoxy and an epistemology that promised revealed scientific knowledge without academic study, Libavius was equally provoked by Galenic physicians' refusal to admit the legitimacy of alchemical theory and practice in medicine. Seeking a middle way, Libavius undertook to shape an identity for alchemy through an extensive campaign of written skirmishes, defensive actions, and frontal assaults on those who threatened his effort to remove it from the metaphysical and theological controversies that racked Reformation Europe and facilitate its entry into the university curriculum. Moran focuses on Libavius' combative prose as providing important clues to the actual practice of discipline formation, what he terms the 'cultural clearing' that was necessary to define the rules and methods by which not only chemistry, but all sciences should proceed and by which they should be judged. But exactly how did Libavius' verbal jousting with his contemporaries contribute to the development of chemistry?

The identity that Libavius imagined for academic chemistry was a practical science forged in the laboratory experiences of medieval Arabic and Latin alchemists and given philosophical meaning through Aristotle's natural philosophy and logic. But both of these legacies were under attack in the sixteenth century. The university professors, most egregiously those of the powerful Paris faculty of medicine, closed the doors to alchemy as mere application, a lower-class craft without merit as a philosophical study. At the opposite end of the medical spectrum, Paracelsians and other Renaissance Platonist authors denied the validity of Aristotelian philosophy and appropriated alchemy and its lore for their own uses, to explain the unseen and support their scriptural exegesis, Christology, and cosmology. Libavius needed to refute the Paracelsians and uphold the philosophical validity of alchemical matter theory, while claiming the academic legitimacy of empirical laboratory work.

A key point Moran emphasizes is that Libavius was not merely reforming laboratory chemistry, but engaged in a more thorough-going refinement of scientific logic and the proper methods for distinguishing good science from bogus contention, about "learning the proper habits of truthfulness and language required for unraveling and communicating the secrets of nature" (p. 5). In executing this plan, Libavius was not dismantling scholastic Aristotelian philosophy to permit the emergence of the new science, as the traditional twentieth-century narrative of the Scientific Revolution stressed; rather, his work

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exhibits an active and flexible late-Renaissance Aristotelianism that embraced artisanal experience and reached toward experimental philosophy.

Moran's line of argumentation for the importance of Libavius as a discipline builder, defining a new scientific alchemy, valorizes the work of early modern academic intellectuals in precipitating and forming the foundations of modern science from within the walls and also tempers the materialist historiography recently empowered in cultural history, which underscores the seminal role of the artisans themselves in originating the transformation of scholastic *scientia* to modern science. The Libavius that Moran portrays was keen to *describe* laboratory processes and to defend the intellectual validity of alchemy as applied science, but was mainly a wordsmith, a rhetorician and well read schoolmaster, and not an artisan. His relative dearth of personal hands-on experience was, indeed, a point on which he was criticized by contemporaries. His goal in composing *Alchemia* was to bring clarity to a subject beset with divergence and confusion in part by bringing together key constitutional ideas of other authors into one discourse. Moran describes Libavius' *Alchemia* as a humanist schoolman's presentation of an art, not as an artist's description of his art. His epistemology is philosophical and scholarly, not artisanal, emerging from a subjective grappling with material nature in the workshop. Libavius sought to give rigorous verbal form to the expressible, not to express the ineffable through action.

Moran's study of Libavius' place in laying the ground rules for modern scientific inquiry raises an important historiographical question: "Have Paracelsus and those described as Paracelsians been complimented perhaps too much as representatives of artisanal experience and bearers of new learning in the history of early modern chymistry?" (p. 293) Has attention to Paracelsians caused us to neglect more straightforward paths of development? This argument applies also to our assessment of the Paracelsians' role in transforming chemistry and medicine: Is what they contributed to the history of chemistry actually dependent on their Paracelsianism, or has our lens colored how we interpret what we see in their writings and forced on them a Paracelsian identity that is unwarranted by sixteenth-century standards? Indeed, Moran points out that even Paracelsus' sixteenth-century fans found his ideas to be in part traditional or conformable to Aristotelian and Neoplatonic ideas, that Richard Bostocke in England praised Paracelsus not as an innovator, but as a restorer of ancient philosophy. If one reads deeply in the books of Paracelsian authors such as the Dane Petrus Severinus and the German Johann Hartmann, one is struck by the amount of Aristotelian terminology and physics that is mingled with Neoplatonic metaphysics and Paracelsian maxims. Has the Paracelsian scholarship of the past fifty years overconstrued both the importance and the novelty of Paracelsus and his ideas?

Moran thinks that Paracelsus came to overshadow the Aristotelian and Arabic alchemical tradition within modern historiography because he "achieved the status of a cultural icon" in the hands of 19th-century historians of medicine, especially Karl Sudhoff, who turned a spotlight on Paracelsus as a chief actor and blinded us to the rest of the stage: "Paying attention to Libavius's diatribes is important because it illuminates what gets left in the dark as a result of casting too much light in one place, and believing that what we see there is all there is to see. In regard to early modern chymistry, what is there besides Paracelsus, what has always been there, is not a personality but a cultural site filled with alchemical artistry." (p. 299) This is an important methodological caveat, but "when we look past personality and toward cultural place" (p. 300) we must also see that early moderns

used both Paracelsus and their own constructions of a Paracelsian tradition as a kind of shorthand for a cohort of ideas and maybe even an ideology that inhabited their cultural sites. Paracelsus is not strictly a modernist construction. Already at the end of the eighteenth century he and his followers were inserted by Kurt Sprengel into the narrative core of German medical history, which we have inherited and elaborated in our general histories of Western science and medicine. Indeed, Moran's close reading of Libavius' concerns, walking us chapter by chapter through key texts and the responses they evoked, reveals that Libavius used Paracelsus and his followers in just this way, to denote a particular world view with theological and pedagogical ramifications that he found distasteful and tirelessly refuted.

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