

only 10% were so involved, with many more being Nazi ‘collaborators’, and profiteers from denunciations). Along these lines, it would have been helpful to clarify why no one in the scientific community confronted the leaders of the Phage Group with information on the predecessors they ignored, even though both groups were trained in Europe and must have known each other.

By its own account, this book reflects an ‘internalist’ orientation, seeking sympathy for the underdog. Could it be that there are good reasons for the current status of internalist history of science? Although one can easily accept that both internalist and externalist outlooks are needed, limiting oneself to the research trajectories of dutiful scientists and their strings of discoveries excludes everything that gives discoveries their human passion and wider social resonance, such as overcoming institutional rivalries, authoritarian lab directors, competitive, intransigent colleagues, unstable research funding and ethical norms long tolerant of sexism, racism and a score of other social biases.

Scientific research in its historical and social context is a more complex business than what transpires in this book’s benign quest for the research trajectories of two model viruses. Hopefully, future books on viruses, whether or not inspired by the masterpieces of Dickens and Plutarch, will strive to capture the historically consequential lives of viruses, virologists and the societies which became their hosts in all their devastating complexity.

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Alisha Rankin, *The Poison Trials: Wonder Drugs, Experiment, and the Battle for Authority in Renaissance Science* (Chicago: University of Chicago Press, 2021), pp. 312, \$35, paperback, ISBN: 9780226744858.

Poison is a recurring staple of Renaissance drama for a reason. Pope Clement VII had more reason to fear it than most. For one thing, the pontificate was a game of dead man’s shoes, and ambitious cardinals were notoriously unscrupulous about emptying them. Both of Clement’s immediate predecessors had been autopsied under suspicions of poisoning, which were confirmed in one case and unreassuringly inconclusive in the other. Perhaps more importantly, he had lived through a devastating outbreak of the plague in 1522 and witnessed first-hand the ravages of a disease that was widely believed to have poison at its root. It is not surprising that Clement did not hesitate when, in the summer of 1524, a surgeon named Gregorio Caravita offered him an oil that allegedly worked as an antidote against any poison. He gave his personal physician two criminals condemned to death and instructed him to test Caravita’s oil on them. Both were given marzipan cakes laced with aconite, and Caravita anointed one of them with the oil. While his cellmate died in agony, the test subject was saved by the antidote and had his sentence commuted from death by hanging to lifelong service as a galley slave.

This is the first of a whole spate of sixteenth-century ‘poison trials’. As Alisha Rankin’s engaging and erudite monograph demonstrates, they are a fascinating and hitherto unexplored historical phenomenon. Like all good things in the Renaissance, poison trials were backed up by an intellectual tradition stretching back to antiquity. A useful outline of that genealogy in Chapter 1 explains why poisons and antidotes were seen as uniquely testable: both were understood to work through an occult quality known as a total substance effect, with all-or-nothing outcomes that were easier to observe than most drugs’ complexional effect on an individual’s balance of the four humours. While ancient and medieval texts mentioned poison trials on animals, the use of humans for testing purposes was a Renaissance rediscovery, before petering out again in the seventeenth century. *The Poison Trials* captures a historical moment of ‘experimental thinking’ that has much to teach us about human subjects, knowledge-making and authority in medicine and science.

Among gruesome tales of poisoned prisoners, Rankin tackles prevailing ideas about the premodern period as a brutal age with little regard for what we would now call medical ethics, where princes and prelates had the power to do unto their subjects (in both the political and the scientific sense) whatever they chose. Challenging Foucauldian narratives that assume little to no concern about using human subjects before the late seventeenth century, Rankin shows that sixteenth-century poison trials on humans were by no means seen as unproblematic. The official report on Pope Clement's trial went to considerable lengths to represent the event as commensurate with prevailing social, legal and religious sensibilities, from the pope's official approval for the use of the bodies to the survivor's lesser but still adequate punishment (Chapter 2). Unravelling the archival backstory of another poison trial in 1581, at the court of Wolfgang II of Hohenlohe in the Holy Roman Empire, Chapter 4 shows how the count's advisors carefully engineered a script in which the prisoner suggested the trial as his own idea, allaying any suspicions of princely abuse of power that might spur public outrage or (yet another) revolt. They emphasised the medical benefit of the trial and offered assurances that it would not disrupt the convict's chance of a good death. While no one felt the need to tell Clement's prisoners about the deadly contents of their marzipan treats in the 1520s, during the later poison trials, public benefit and the subjects' consent emerged as key legitimating factors.

The Poison Trials sheds new light on an experimental culture of medical knowledge-making that challenges traditional narratives of the Scientific Revolution. Long before the alleged birth of experimental methods in seventeenth-century physical sciences, well-known learned physicians, such as Andrea Mattioli, wrote extensively about poison trials, worried about proper method and worked hard to turn them into a scholarly endeavour, meticulously recording the physical effects of poisons and antidotes in reports modelled on existing genres of medical writing (Chapter 3). As in her previous work, Rankin engages in conversations about the role of medicine in larger narratives in the history of science. She joins scholars such as Harold Cook, Gianna Pomata and Michael Stolberg in portraying physicians as early and eager (if sometimes conflicted) adopters of observation, experiential knowledge and empirical remedies. As she quips in the introduction, 'if there was a Scientific Revolution, the revolt took hold among some of the most traditional physicians at a very early date' (p. 5).

Questions about experimental knowledge-making were inextricably linked to questions about authority and proof. A key part of Mattioli's and others' mission was to demarcate their learned poison trials from the uncomfortably similar marketplace shows of itinerant charlatans hawking antidotes and other miracle cures. This extended to the tested substances themselves. In Chapter 5, Rankin shows how physicians claimed expertise over exotic 'wonder drugs', such as bezoar stone and unicorn horn, through travel reports and clinical observations of learned colleagues as well as poison trials. The final chapter traces the divergent careers of two purveyors of new wonder drugs and how they sought to establish their authority. As the focus shifted away from eminently testable poisons and antidotes, other authorising strategies joined or replaced poison trials, including patient testimonials and alchemical rationales for universal medicines.

The Poison Trials is cultural history of knowledge at its best. Through extensive and detailed research in German and Italian archives, Rankin uncovers the stories behind poison trials and their published accounts to reveal underlying religious, political and epistemic tensions. As in her previous work, she combines a knack for archival sleuthing with an elegant prose that effortlessly conveys historical complexities. This is an eminently readable and teachable book that will appeal to historians of medicine, science and early modern intellectual culture.

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