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Matteo Valleriani. Metallurgy, ballistics, and epistemic instruments: The Nova scientia of Nicolò Tartaglia: A new edition. Translated by, Matteo Valleriani, Lindy Divarci, and Anna Siebold

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a close reading of Pedro Montenegro's *Materia médica misionera*, which Anagnostou calls an impressive thesaurus of officinal remedies, Sigismund Aperger's *Tratado breve de medicina*, Marcos Villodas's *Materia medica misionera o Herbario de las Reducciones Guaranies*, Johann Steinhöfer's *Florilegio medicinal*, and Paul Klein's *Remedios faciles para diferentes enfermedades*. These monographs functioned as a practical realization of rules for the collection of healing plants, their storage under local conditions, their preparation, and their dosage (p. 141). With the help of Anagnostou's metatextbook it is now possible to catalogue nearly all the medicinal plants, from rosemary to selloum, that were used in the colonies in the early modern age. The register of medicinal plants and *composita* is obviously not only useful, but the main purpose of this publication.

In the first chapter, Anagnostou describes in detail the self-sacrificing battle against diseases and epidemics fought by the Jesuits in the Americas. She bases her work on a rich trove of documents and writings produced by the missionaries themselves, mostly from the Society of Jesus. While she has accumulated an extraordinary amount of knowledge on the Jesuits and their pharmacies, this focus also leaves the impression that the only actors in the history of missionary pharmacy—besides some short appearances by the colonists—were the Catholic missionaries in the Americas and the Philippines—that is, Franciscans, Dominicans, and Jesuits. Anagnostou uses the term "*Eingeborene*" ("natives"), which was part of German colonial language use, to summarize the nameless beneficiaries of Christian welfare. Unfortunately, the reader learns nearly nothing about their own use of remedies—or even what the missionaries learned from them. The unproven statement that the relationship between missionaries and "natives" was characterized by a two-way readiness to assimilate and an intimacy that allowed for the exchange of cultural elements definitely needs further investigation (p. 229).

While one has to praise the impressive pharmaceutical knowledge Anagnostou presents in her book, which can best be used as an encyclopedia of the use of officinal plants in the colonies, the study lacks historiographical reflection, critical reading, or discourse analysis of the missionaries' writings and any perspective with regard to colonial or postcolonial studies. Pharmaceutical history could profit from opening up to historiographical debates.

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Matteo Valleriani. *Metallurgy, Ballistics, and Epistemic Instruments: The* Nova scientia *of Nicolò Tartaglia: A New Edition*. Translated by **Matteo Valleriani**, **Lindy Divarci**, and **Anna Siebold**. (Max Planck Research Library for the History and Development of Knowledge: Sources, 6.) vii + 350 pp. Berlin: Edition Open Access, 2013. Free (online); €21.29 (print on demand).

Nicolò Tartaglia's *Nova scientia* (1537) has attained "canonical" (!) status as the earliest geometrical approach to external ballistics. When Stillman Drake translated the very first parts of this book nearly fifty years ago, he described it as an Aristotelian and slightly animistic "mixture of ancient and novel ideas uninfluenced by medieval speculations on motion, impetus, or the science of weights" (Stillman Drake and I. E. Drabkin, *Mechanics in Sixteenth-Century Italy* [Wisconsin, 1969], pp. 19–20).

Now Matteo Valleriani has provided a new translation of what Drake had given, plus Tartaglia's important Book 3 on range-finding instruments, all from the later 1558 edition (also reproduced in full facsimile at the end of this volume) that allows us more fully to see Tartaglia's "New Science" for what it became. Valleriani has translated the full introduction, which lets us know what the fourth and fifth books were to have been about. Tellingly, these were the books presenting range tables and practical gunnery matters, particularly fireworks and incendiaries. It was exactly these books that Tartaglia never managed to write, reminding us that the fusion of philosophical ballistics and practical gunnery was far from complete in the mid-sixteenth century. More important is the evolution from the 1537 (Drake trans.) to the 1558 (present) edition. Valleriani's footnotes flag numerous divergences that he considers significant changes, but they present only his translations, not the original of the 1537 text. Therefore, although this is not a full critical edition of the *Nova scientia*, it does offer some evidence of the evolution of Tartaglia's thinking. Valleriani is clearly most interested in Tartaglia's work as a linchpin between natural philosophy and practical technology. The opening essay deposes the *Nova scientia* from the high pedestal of natural philosophy and grounds it slightly more in more mundane concerns of practical ballistics, instruments, and metallurgy. Valleriani argues that Tartaglia is fitting reality into the conceptual tools at hand—namely Aristotelian frameworks and Euclidean geometry—but then also notes that some of those tools are being built as Tartaglia writes. He is not as effective as he could be,

however, in looking at the position of the *Nova scientia* from the point of view of practicing gunners. Commenting on the earlier translation, Valleriani points out that Drake's interest was in finding sixteenth-century precursors to Galileo and Newton; thus he chose to translate certain words with an eye toward what they would later mean to post-Galilean science. Valleriani argues that in Tartaglia's Aristotelian framework the words should be understood differently.

The introductory material comprises eight chapters in only forty-eight pages. I am quite willing to agree that the change in cannons at the turn of the sixteenth century did occasion a reappraisal of how they worked, though the connections Valleriani draws between new metallurgy and new philosophy (Ch. 5) are less convincing—or at least insufficiently developed—than those between new military activity and epistemic instruments (i.e., the quadrant; see Ch. 6 and all of Tartaglia's Book 3). In the end, it is clear how *deductive* Tartaglia was in his analysis of how cannonballs must move, even if modern science (and Drake) hopes to find his inductive connection from real cannon shots to mathematical equations.

There are some peculiar choices that the series editors might take into account for future volumes of the Max Planck "Sources." First, and most troubling, *Metallurgy, Ballistics, and Epistemic Instruments* has no index and the table of contents offers no content descriptions for the main text and translation. Second, the edition provides facing-page translations but duplicates the same original woodcuts on both pages; I would have thought that line drawings of the geometric constructions, with clearer typography than the woodcuts, could have been useful set opposite the original images. Finally, I would argue that the choice of a woodcut from Agostino Ramelli's *Le diverse et artificose machine* (1588) that shows a cannon firing point-blank at a castle wall as the cover image may send the wrong message about what Tartaglia's work was *for*. This is exactly the kind of artillery function that Tartaglia did *not* realize in *Nova scientia*. To my view, Valleriani's enlivening discussion of the purpose of the book has not sufficiently explored how *useless* it was to practicing cannoneers. Tartaglia is crucially important for the new Archimedean mechanics, and this "new science" was indeed responding to changes in the material of gunnery, but its feedback into gunnery practice is more assumed than proven here.

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Elisa Andretta. *Roma medica: Anatomie d'un système médical au XVIe siècle*. (Collection de l'École Française de Rome, 448.) 647 pp., illus., apps., bibl., index. Rome: École Française de Rome, 2011. €80 (paper).

Rome, to be sure, is no ordinary city. This was particularly true in the sixteenth century, a high tide of political and religious conflicts where popes played a preeminent role. Recent scholarship has been revisiting the achievements of Roman science. But what did it mean to "do medicine" at the time? This is the starting question of Elisa Andretta's very substantial book, which she endeavors to answer in the course of more than six hundred pages. In the Middle Ages the city of Rome did not have a famous university, unlike Bologna or Padua, and the genesis of the *studium urbis* and *studium curiae* is a complex, discontinuous story. The institutional framework for the training of physicians and the supervision of medical practice at the time did not rely on an academic model.

In the first section of her book, dedicated to the College of Physicians, Andretta uses a wealth of archival documents to show how medical elites used their professional structures to control all activities pertaining to the care of the body, from the graduation of physicians to the inspection of apothecaries' shops. Through periodic revision of its statutes and strengthening of the power of its *Protomedicus*, which it extended to all the Pontifical States, the College of Physicians sought to impose its hegemony, although this was contested by a hitherto-unknown rival brotherhood, the Congregation of Saint Luke. The second section of the book is devoted to court physicians. In Rome this framework had specific features, owing, first, to the lack of continuity from one pontificate to the next, as each pope had his own *familia* and preferences regarding the care of his body, and, second, to the multiplicity of other courts, mainly those of cardinals. Hence the attraction exerted by Rome on physicians from all parts of Italy, and sometimes beyond, although some famous physicians of the time, Girolamo Mercuriale among others, did decline invitations to stay. With few exceptions, such as Andrea Laguna, Girolamo Accoramboni, and Realdo Colombo, the majority of papal medical practitioners were lesser figures. In any event, a distinction has to be made between papal personal physicians, who had in particular the charge to explain the causes of the pope's death, and other physicians. In the third section, the available sources, which—in this field as in others—lack continuity, are exploited to give a