
Frontinus: De aquaeductu urbis Romae by Robert H. Rodgers

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Reviewed by

John Peter Oleson
University of Victoria
jpoleson@uvic.ca

In AD 97, Sextus Julius Frontinus, one of the most distinguished and influential men in late first century Rome, accepted from Nerva the post of *curator aquarum* for the city. Not coincidentally, at the same time, he served on a senatorial commission looking for ways to cut the costs of administering Rome and the Empire. In 98, Frontinus was part of the small group of senators who held the constitutional reins of power until the arrival of Trajan, and he may have continued in office as *curator aquarum* until 100, or even until his death in 103/4. After a life of these and other accomplishments, with ironic modesty, he declared that a funerary monument would be superfluous: *impensa monumenti supervacua est; memoria nostri durabit, si vita meruimus*¹ [Pliny, *Ep.* 9.19.6–8]. Sometime around 98, Frontinus prepared a booklet that may have been entitled *De aquaeductu urbis Romae*. This *commentarius* on the water-supply system of Rome is unique among the surviving works of Latin literature, and—although relatively brief (about 12,750 words in length)—it has spawned a bulky modern bibliography. Rodgers has meticulously prepared a critical edition of the text and a commentary that synthesizes all this previous work, and supersedes previous editions and commentaries. It is a shame that Rodgers' elegant and precise translation, which has now appeared with notes for undergraduate readers in Rodgers 2005, was not included with the edition.²

The issues involved in the study of the *De aquaeductu* are many and varied: the text, the form of the booklet, its intended audience

¹ 'The expense of a monument is superfluous. My memory will endure if my life has merited it.'

² The text is now online at <http://www.uvm.edu/~rrogers/Frontinus.html>.

and purpose, and its utility as a guide to the topography, technology, and administration of the water-supply system of Rome. In consequence, any thorough consideration of the *De aquaeductu* has to marshal evidence from paleography, Latin literature, Roman history, law, epigraphy, topography, architecture, and hydraulic technology. Perhaps for this reason, there has been no ‘full commentary’ on the text since that of Giovanni Poleni in 1722 [xii]. Despite the challenge, Rodgers orchestrates all these sources in a masterful manner, although he gratefully farmed out to Brunn discussion of the vexing problem of the exact value of the *quinaria* measure [appendix C].

The first half of the introduction [1–61] provides a concise but thorough introduction to the life and career of Frontinus; the date, content, form, audience, and purpose of the *De aquaeductu*; and the administrative role of the *curator aquarum*, along with discussion of the sources, language and style of the booklet. The second half provides a full discussion of the textual tradition and evaluation of the modern editions and commentaries. The text and apparatus occupy 53 printed pages [64–117], while the dense commentary extends to 215 pages [121–336]. There are three short appendices: ‘A. Poggio’s Use of the *De Aquaeductu*’ [337–338], ‘B. Inscriptions Pertinent to Frontinus’ Text’ [339–341], and ‘C. The Impossibility of Reaching an Exact Value for the Roman *Quinaria* Measure’ by Christer Brunn [342–346]. Three overly schematic maps display the routes of the aqueducts outside and inside the city [347–349], and 11 Tables [350–359] marshal evidence regarding the lengths of the aqueducts, Roman mathematical fractions, small adjutages relative to the *quinaria*, pipe sizes, *quinariae* assigned to the various aqueducts, categories of distribution, *castella* and distributions, distributions of water outside and inside the city, distributions by regions, and known *curatores aquarum* up to the time of Frontinus. There is a lengthy bibliography [360–403], followed by indices of literary and epigraphical citations [404–412] and of terms and names [413–431]. The latter index includes Latin words from the text which are discussed in the commentary. As with the other titles in this series, the book has been very carefully edited and nicely produced. I did not notice any typographical errors or incorrect index entries. I found that one bibliographical reference appears to be missing: ‘Wikstrand 2000’, cited as the source of Lewis 2000.

Rodger's book is in many ways the labour of a lifetime, undertaken in 1978 [xii], but even then based on a decade of experience with the manuscripts of Peter the Deacon at the Abbey of Monte Cassino. There was something of a renaissance in Frontinus studies over this same period, presenting Rodgers with ongoing challenges, but in the end allowing him to produce a comprehensive and convincing text and commentary. Two editions of the text appeared during these decades—those of Kunderewicz in 1973 and Gonzáles Rólan in 1985—and at least seven translations: Hainzmann (1979), Kühne (1982), Pace (1983), Gonzáles Rólan (1985), Hansen (1986), Evans (1994), and Galli (1997). In addition, during the 1990s, F. Del Chicca was at work on an edition, translation, and commentary on the *De aquaeductu*, which appeared only a few months after the publication of Rodgers' book [see Del Chicca 2004]. Finally, *L'année philologique* (online) lists 71 articles, books, and chapters concerned with Frontinus and the *De aquaeductu* published between 1973 and 2003. I have not noted any substantive omissions from the bibliography prior to 2002, after which, apparently, the book went into production. In fact, other than Del Chicca 2004 and Peachin 2005, no major publications relevant to Rodgers' topic have appeared since 2002.

Rodgers' Latin text of the *De aquaeductu*, of course, is the foundation for the rest of the book. It is the first text since Krone's Teubner edition (1922) to be based on 'the single authoritative witness' [xii], the Codex Casinensis 361 (labeled 'C'). This manuscript, probably based on a Carolingian original, was copied around 1130 at Monte Cassino by Peter the Deacon. Since the eccentric personality of this individual has had some effect on the text of C, Rodgers reconstructs Peter's life and provides a brief but fascinating portrait of the man [34–44]. He concludes that

an editor of Frontinus... ought not to ignore the dangers of placing undue confidence in the authority of a manuscript written by a man whose attitude and purposes are always questionable and whose concern for exactitude is never conspicuous. [44]

Although the absence of a second independent manuscript tradition simplifies some editorial problems, the archetype itself presents difficulties: errors of transcription, blank spaces, and dreadful handwriting. The humanist scholar Poggio Bracciolini, who hunted this

codex down in the abbey library in person in 1429, described it as ‘*mendosus et pessimis litteris adeo ut vix queam legere*’³ [33]. Poggio made a copy, which apparently is lost or unidentified; but Rodgers argues convincingly that all 11 surviving 15th-century manuscripts are descendants of C [44–52]. Del Chicca has arrived at the same conclusion. In the end, Rodgers constructs a conservative edition of the text while recording instructive conjectures in the apparatus.

We sometimes learn most from those whose views are different, and at risk of being scorned for lack of judgment, I have piously recorded suggestions, implausible in themselves, which have helped me understand the author I study. [61]

The preface and the first half of the introduction present in concise form Rodgers’ conclusions about the major issues surrounding Frontinus and his *De aquaeductu*. The preface provides a stark summary of the issues:

Our author sketches the history of Rome’s aqueducts, furnishes a wealth of technical data on supply and delivery, quotes verbatim from legal documents and touches on a variety of other topics incidental to his administrator’s viewpoint. Yet he is not composing a treatise on the engineering of aqueducts, he barely concerns himself with fiscal aspects of management, nor does he compile what might comprise a comprehensive administrative manual of use to a successor. In plain truth we do not surely understand what purpose he might have intended for the *De Aquaeductu* and the work remains something of an enigma. Nothing quite like it is known, let alone survives, from the ancient world. [xi-xii]

Given Frontinus’ elevated social position, active military and political careers, and literary friends such as Pliny the Younger and Martial, there is significant literary and epigraphical evidence for his life [1–5]. Frontinus himself dates his assumption of the office of *curator aquarum* to 97 [*De aqu. c.*102.17], and historical events at the end of the first and beginning of the second century suggest to Rodgers that he continued in office until at least his third consulship in 100, and possibly until his death in 103/4 [7]. Self-referential comments

³ ‘full of faults, and written in such dreadful script that I could scarcely read it’.

about the purpose and utility of the booklet do not conflict with an assumption that it was composed while Frontinus was still in office.

Rodgers highlights the ambiguity concerning the intended contents and the literary form of the *De aquaeductu* [c.2.3]. In his prologue, Frontinus himself describes the work as a *commentarius* [c.2.2–3], a genre not easily defined since it applied ‘to notes and records of many sorts, some of which might remain in the form of data such as lists or compendia, while others might... be polished for wider circulation’ [10]. In his ‘Table of Contents’ [c.3], Frontinus promises to provide data on individual aqueducts [cc.5–22], data on distribution [cc.23–86], and legal matters pertinent to water rights, upkeep, damage [cc.94–130]. Frontinus states that the work originated as a collection of material for self-instruction and personal reference [c.2.2–3], and he goes well beyond his declared subject matter in providing here and there a ‘critical review of the data he has collected and his administrative analysis of the system’ [9], e.g., chapters 64–76 and 87–93. Rodgers concludes that

such a combination is not the rule for a *commentarius* and, given the rather abstruse subject-matter of water-conduits and water-rights, oversight and upkeep, the *De aquaeductu* is in fact unique as a specimen of Roman literature, and even perhaps of the ancient world as a whole. [11]

He concurs with recent scholarly opinion that Frontinus should not be considered ‘a technical writer’ simply because his booklet included some technical discussions, and that the work is certainly not a *manual* for construction, maintenance, or even for administration of the water-supply system of Rome. The intended audience was apparently the senatorial class as a whole and the new *princeps*, Trajan [13]. While the purpose of the *De aquaeductu* must remain the object of conjecture, Rodgers cites various recent proposals and concludes with an appealing theory by Michael Peachin.⁴ The *De aquaeductu* should be described as a pamphlet, perhaps originally delivered as a speech, addressed to fellow senators and to commercial consumers of public water, announcing the restoration of policies and penalties that had been overlooked for some time by the responsible officials [14].

⁴ Now published in Peachin 2005.

Finally, Frontinus' frequent emphasis on the emperor as both the source of his administrative authority and a colleague in the oversight of the enormous aqueduct system indicate to Rodgers an interest in restoring senatorial claims to this kind of administrative post. After Marcus Agrippa, the administration of the water system had gradually passed in large part to imperial slaves and the emperor's freedmen, a system parallel to the senatorial curatorial post. The subsequent administrative confusion, in Frontinus' eyes, had given rise to the abuses he undertook to correct [14–19].

The sources of Frontinus' *commentarius* seem clear enough: 'documents found in the archives of his own and closely related bureaux' [20]. At several points, Frontinus cites *commentarii principum* as a source of data [cc. 31.2, 64.1], and he refers to *commentarii* on the water-supply system kept by Marcus Agrippa [cc. 25.1, 99.3–4]. Legal texts also figured among his sources [20–21]. This mixed bag of source material, along with the diverse ostensible and tendentious motives for composition of the booklet, prescribed a variety of prose styles, from the tabular and formulaic to the rhetorical. Rodgers provides excellent documentation and discussion of these styles, both in the introduction [21–29] and throughout the commentary.

Although the introduction will serve for many years as a reliable and comprehensive summation of the major issues surrounding Frontinus and the *De aquaeductu*, the meat of Rodgers' book naturally is the commentary. This is also the sort of material that cannot be reviewed in detail, and I must pass over many fascinating discussions. In short, Rodgers does justice to all aspects of this complex text. Although the commentary is not intended to serve as a guide to the surviving remains of the aqueduct system, there is frequent reference to topographical information where it is relevant to interpretation or reconstruction of the text. For example, he discusses the many problems concerning the location of the intake for the Anio Vetus and of the point where it entered Rome [153–156]. Definition of water distribution points is important to an understanding of the system, and there is discussion of this question at pages 199–200 and elsewhere. Rodgers also carefully explicates Frontinus' occasional forays into rhetorical embellishment [e.g., 121–122, 188–189, 335–336]. Legal and administrative issues naturally constitute an important focus: the availability of statistics and maps [190–191], the provision of water grants [283–284, 288–289], personnel in the *curator's* office [173,

298–302], and verbatim recording of important legal documents and inscriptions [257, 263–264, 318–335].

I suspect, however, that most readers will come to Rodgers' book in search of information concerning the technological details of the water-supply system, so it is reassuring to find that he provides a reliable account of this aspect of the *De aquaeductu*. Such topics include the use of arcades as opposed to underground channels [133, 183], the function of distribution tanks [*castella*: 135–136, 193–194, 219, 289], removal of calcium carbonate deposits from channels [*sinter*: 252, 309], the purpose of continuous night-time flow (to justify an interpolation: 281–282), the manufacture and classification of pipes [211, 267, and Brunn's appendix], pressurized pipe systems or inverted siphons [93–94], the setting of an off-take pipe [*modulus, calix*: 220–221], the nature of gauges to measure flow or volume [*mensurae*: 197, 228, 231], construction materials [183, 310–311, 315–316], and the composition of construction crews [299–300]. One can occasionally quibble about details. For example, water in a pipeline, particularly a long one, will not rise of its own accord 'up to the level at which it first issued' [194], since the coefficient of friction impedes the flow. At other points, Rodgers seems aware of this problem of 'hydraulic gradient' [e.g., 219]. Brunn's appendix provides a clear summary of the evidence that 'the Romans were not capable of calculating exactly the volume of flowing water' [346]; and that therefore they (and we) cannot reach an exact value for the *quinaria* measure.

In summary, this long-awaited book does not disappoint in any way. The text is judicious; the introduction and commentary, thorough and engaging. Rodger's scholarship will appeal to a wide and varied audience and will undoubtedly serve as a firm foundation for future research concerning Frontinus, the water-supply system of ancient Rome, and Roman municipal administration. The dedication to Herbert Bloch, and several warm references to Rodgers' 'beloved master', will strike a chord with other of Bloch's former students, including this reviewer.

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See also <http://www.uvm.edu/~rrodgers/Frontinus.html>.