

CHAPTER III

FRONTINUS' DESCRIPTION OF THE NINE AQUEDUCTS;

FOR THE TOURIST, AND ARCHAEOLOGICAL

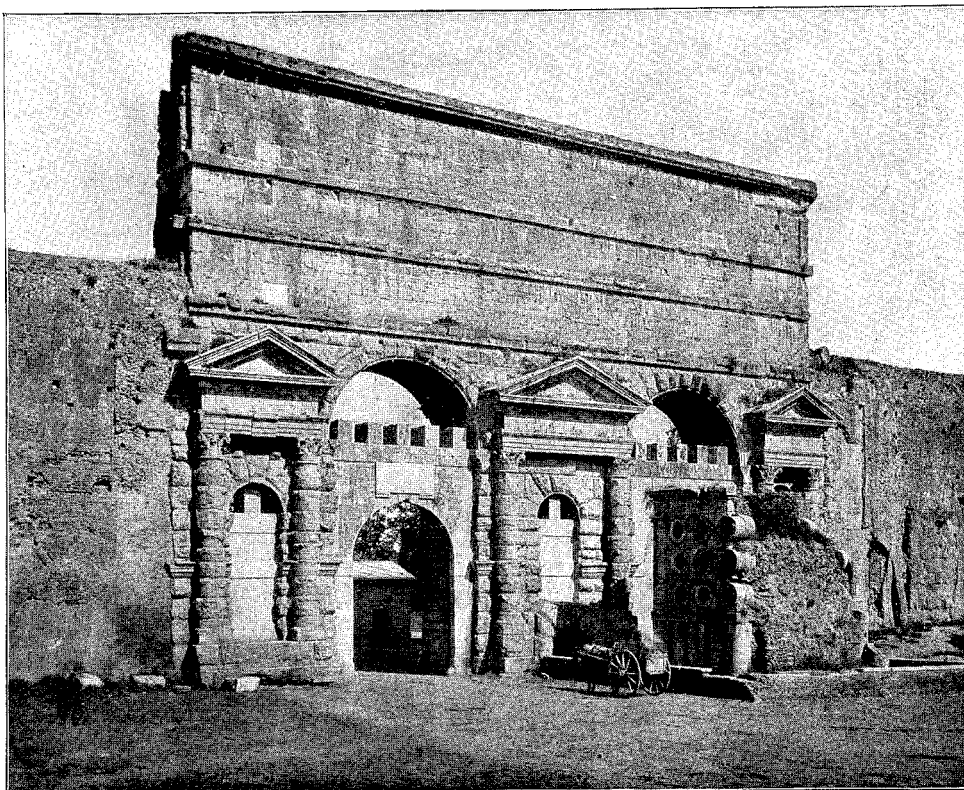
Quod si quis diligentius aestimaverit aquarum abundantiam in publico, balineis, piscinis, domibus, euripis, hortis suburbanis, villis, spatioque advenientis exstructos arcus, montes perfossos, convalles aequatas, fatebitur nihil magis mirandum fuisse in toto orbe terrarum.

PLINY (A. D. 23-79), *Nat. Hist.*, xxxvi. 24.

But if any one will note the abundance of water skilfully brought into the city, for public uses, for baths, for public basins, for houses, runnels, suburban gardens, and villas; if he will note the high aqueducts required for maintaining the proper elevation; the mountains which had to be pierced for the same reason; and the valleys it was necessary to fill up; he will conclude that the whole terrestrial orb offers nothing more marvellous.

AS a rule, when the encyclopaedias, or the text-books, speak of the aqueducts of the City of Rome, the reader is given the statistics contained in Chapters 5-15 of Frontinus, and nothing more. These chapters state the source, course, length, and similar attributes of each of the nine aqueducts in existence A. D. 97, upon which our ancient author throws off care for an instant in the famous exclamation, of the 16th chapter: "Will anybody compare the idle Pyramids, or those other useless though much renowned works of the Greeks, with these aqueducts, with these many indispensable structures?" and then starts off upon a new line of statistics, giving the elevations, or the pressure levels of the waters of the several aqueducts and further information about them. In locating these nine aqueducts on the ground at the present day, and in describing certain of their features not noted by Frontinus, we may in this chapter profitably follow the order and method of Frontinus, above alluded to.

From an engineering standpoint, nothing can be plainer than a general design or plan of the principal aqueducts of ancient Rome. In a country like the Campagna, somewhat resembling the rolling prairies of Iowa or of Illinois, where the eye has an unobstructed sweep around the horizon, but with mountains bounding the rolling



PORTA MAGGIORE IN ROME.¹

prairie on the one hand, while Rome is "seated on her seven hills" some twenty miles distant from the mountains at the other end of the line, a general oversight of the whole scheme of the works can be readily acquired. Of course there is plenty of water in the side-valleys of those mountains, and a marked ridge across the prairie prescribes the route which any self-respecting aqueduct builder of ancient or of

¹ The ancient *Porta Praenestina*, carrying Claudia and Anio Novus over the highway. The curious structure to the right is the tomb of Eurysaces, the baker, in which an attempt has been made to found a baker's order of architecture, by using, architecturally, various bread pans, dough-troughs, and baker's ovens. Middleton, ii. 275.

modern times would necessarily select to reach the higher elevations in Rome with his lines of masonry aqueducts. Whence it has happened that so many of the Roman aqueducts have followed nearly identical routes.

That there is a little brook running parallel to these structures, and on the very crest line of the ridge we are speaking of, need confuse no one. In a country of so ancient a civilization as this, it is not always easy to distinguish between the natural and the artificial, and it may well be that this brook occupies an artificial channel, and was thus conducted for purposes of irrigation. It serves irrigation uses to-day.

The key-point in Rome is the Porta Maggiore; in the mountains it is the country back of Tivoli. Any elevated view-point in Rome in the vicinity of the Central Railroad Station will give an idea of the panorama above described. On the right, facing the mountains, will be seen the peak of Monti Albani, also called Rocca di Papa (the Pope's Ridge), from a village of that name; while by letting the eye sweep around toward the left, Tivoli can be distinguished on one of the foot-hills of the Apennines. This is where the Anio River debouches upon the Campagna, and the valley of the Anio supplied the principal aqueducts of Rome in one shape or another with water, whether from the river itself, or from springs tapped in the valley of the river.

APP^{IA}, 312 B. C. "De Aquis," 5, 7, 18, 22, 65.

ideo aquam adduxi? ut ea tu inceste uterere?
ideo viam munivi? ut eam tu alienis viris comi-
tata celebrares?

CICERO (106-43 B. C.), *pro M. Caelio*.

Did I bring in the water, that thou shouldst
use it sinfully? Did I build the road, that
thou shouldst frequent it, accompanied by men
not properly with thee?

APPIUS CLAUDIUS CAECUS (3d century
B. C.), represented as addressing Clodia
(about 56 B. C.).

With Frontinus' account of the first described, the oldest of the aqueducts, — Aqua Appia, — the first of a long series of names distinguished in Roman history, mentioned by him, is brought to our attention. It constitutes a singular charm in the reading or in the

study of the classics, and of classical, especially of Latin, literature, that so much is known concerning the characters one thus encounters. Even their portraits, or portrait busts and statues, exist in unquestioned truthfulness of representation,¹ and new discoveries are constantly being made along all these lines.

At the very outset, we are thus brought in contact with two celebrated consuls, and in the builders of the first aqueduct, with one of the grandest characters of ancient Roman history, — with a man who was a century ahead of his time. Noted as an active and successful reformer in constitutional legislation, in finance, and in law, the builder of the celebrated Appian Way, and of the first aqueduct, — he was also active as an orator and a writer on grammar, and even as the founder of Latin literature, both of prose and poetry.

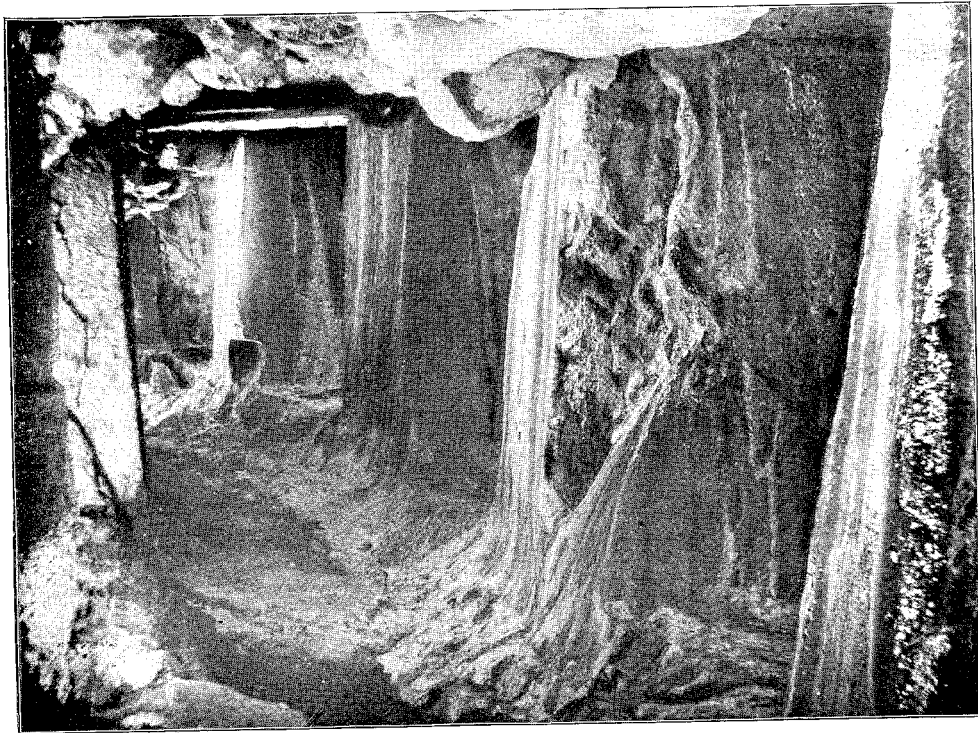
This man, then, made a new departure, — new at least, in Rome, though not an invention; for the construction of aqueducts had been practised in Greece, and in the still older civilizations of Asia, for centuries before the time of the Censor Appius. He and his fellow censor, the finder of springs (Venox), went out of the present Porta Maggiore on the Praenestine Way, then followed the Collatian Way, and about ten miles from Rome found the spring they were in need of, now to be seen at the bottom of some stone quarries not far from the Anio River; some 3,900 feet to the left, “between the seventh and eighth milestone” from Rome. The Roman mile was about 4,850 feet long, sub-divided into 1000 “paces.”

From the spring they followed the roads in a general way towards Rome, which they reached “ad Spem Veterem.” This was an open place, just inside the present Porta Maggiore, and crossing this, the aqueduct went on towards the present Via di Porta S. Sebastiano, crossed that valley near the ancient Porta Capena, a gateway in the wall of Servius Tullius, and ended on the shore of the Tiber, at the Via della Salara. The “Salinae,” or salt warehouses, where Frontinus makes it end, existed there until A. D. 1888.² Both Parker and Lanciani have seen this aqueduct in modern times.

¹ See a most interesting chapter on this topic, entitled “Personal appearance of the Caesars,” in Mrs. Frances Elliot’s *Pictures of Old Rome*.

² Lanciani, *The Ruins*, etc., p. 530.

Frontinus says, that the portion within the city was reinforced by a branch from the Augusta, built by Augustus, who gave it the name of the "Twins;" or as we should now say, in the language of United States fire departments, Augustus "siamesed" the old and the new Appian aqueducts; the term "siamese" being derived from the well-known freak called the Siamese Twins, — a renewed proof of there

SOURCES OF APPIA.¹

being nothing new under the sun, not even in familiar terms used in hydraulic constructions.

Frontinus says that "the distribution begins" at the Salinae. Of the meaning of this phrase more will be said later on, but it may be interesting to note in passing that the aqueducts all delivered into masonry cisterns or delivery tanks, whence the water was taken in separate lead pipes to each of the running fountains, private and public, and to the other places of water consumption.

¹ The incrustations caused by the excessively hard water of these springs are plainly to be seen.

As we have seen, all but about three hundred feet of this aqueduct was underground; this three hundred feet being on low arches parallel with the wall of Servius Tullius and across the valley now occupied by the Via di Porta S. Sebastiano. Except that it carried clean water, such a structure would not differ materially, or necessarily, from the walled and arched sewers, or drains for wet land, which, at the time, had existed in Rome for centuries, were it not for one other difference. Where Aqua Appia entered Rome, it was over fifty feet¹ below the surface of the ground, and this probably meant tunnelling instead of the comparatively shallow trenches which sufficed to put in drains for wet lands. I have not been able to find a description of the cross-section of this aqueduct satisfactory from the point of view of a builder. The cross-section given in "The Ruins," etc., by Lanciani, p. 48, I confess I do not understand. Various authors give the clear cross-section as about 2.5 feet wide by 5 feet high.

Sometimes the cover of the aqueducts is an arch, sometimes a slab or lintel, and again two slabs leaning against each other, like the roof of a house. And that these features do not indicate any chronological order is proven by their occurrence irrespective of the date of their use in the construction of ancient Roman sewers as well as of aqueducts. The former have been very perfectly described in the October, 1897, number of "Bulletin de la Société d'Encouragement pour l'Industrie Nationale," Paris, which gives also a description of the very perfect modern drainage works of Rome.

ANIO VETUS, 272-269 B. C. "De Aquis," 6, 7, 9, 18, 21, 92.

Aquam Anienem de manubiis Hostium in Urbem induxit.

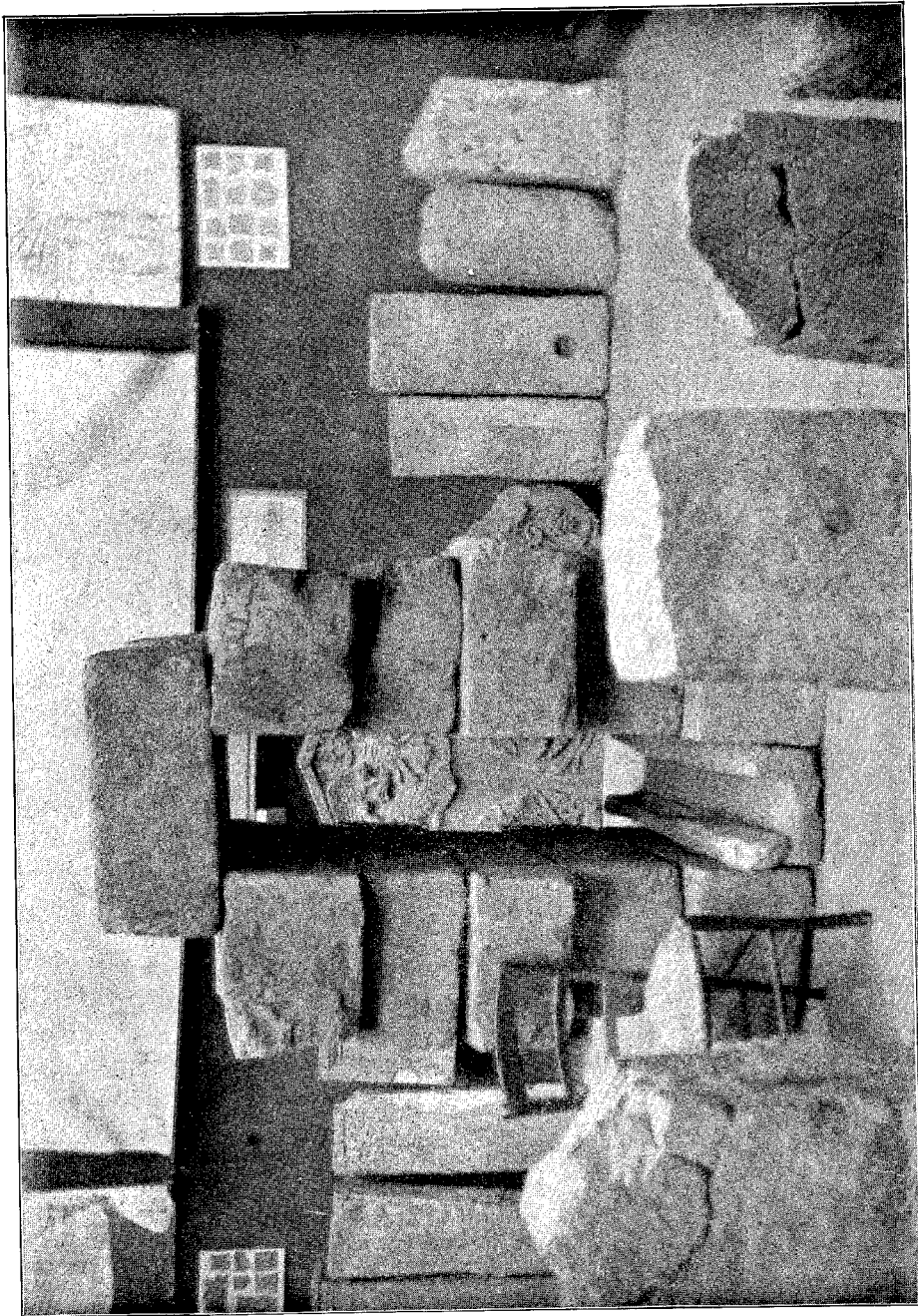
SEX. AURELIUS VICTOR (4th century),

De Viris Illustribus, 33.

He [Manius Curius Dentatus] brought into the city the waters of the Anio out of booty from the enemy.

This was another low-level aqueduct, though at an elevation some ninety feet higher than the Appia, and probably not considered a low-level aqueduct when it was built. It entered Rome near the present Porta Maggiore, at about the present ground level. Only about eleven hundred feet in length was on an artificial structure above the ground

¹ *De Aquis*, 65.



ANCIENT ROMAN SEWER.

A channel for the sewage carved out of stone; side walls and cover of dimension stone; made high enough to walk through. From photograph taken in the Magazzino Archeologico, at Rome, by the author.

END OF SAMPLE TEXT



The Complete Text can be found on our CD:
Primary Literary Sources For Ancient Literature
which can be purchased on our Website :
www.Brainfly.net

or

by sending **\$64.95** in check or money order to :
Brainfly Inc.
5100 Garfield Ave. #46
Sacramento CA 95841-3839

TEACHER'S DISCOUNT:

If you are a **TEACHER** you can take advantage of our teacher's discount. Click on **Teachers Discount** on our website (www.Brainfly.net) or **Send us \$55.95** and we will send you a full copy of *Primary Literary Sources For Ancient Literature* **AND** our *5000 Classics CD (a collection of over 5000 classic works of literature in electronic format (.txt))* plus our *Wholesale price list*.

If you have any suggestions such as books you would like to see added to the collection or if you would like our wholesale prices list please send us an email to:

webcomments@brainfly.net