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De Aquaeductu Urbis Romae and the Plebeian Nature of the Augustan Aventine

According to the legendary founding of the city of Rome, the Aventine Hill was home to the plebeian settlement of Remus- the rival to Romulus' community on the patrician Palatine. Remus' death at the hands of his brother cemented the separation between the neighboring hills and confirmed the identity of the Aventine as a place "where the plebs manifested strong self-esteem".[1] By the late Republic, the notion of the Aventine as a bastion of the proletariat was presumably etched in the people's collective subconscious. Thus, it was to the Aventine that the champion of the plebs, Gaius Gracchus, and his supporters retreated to make their final stand against the senatorial conservatives in 121 BC.

Unlike the inhabitants of Rome's other six hills, residents of the Aventine had no direct access to the Forum, as the Palatine lay in between. This topographical and geographical separation from the rest of the city seems to have aided in the development of the hill's individualized plebeian identity. Even today when one climbs the steep route of the *Clivus Publicius* (which has changed little since antiquity) to the Piazza del Tempio di Diana, the sense of isolation from the rest of the bustling city is undeniable. The Aventine's insular nature in the Augustan period is reflected by its omission from the *pomerium*, Rome's sacred boundary.[2]

It is quite likely, then, that when Augustus reorganized the city into the *Regiones Quattuordecim*, the populace of *Aventinus* was composed largely of plebeians. Evidence for demographic distribution in this part of early imperial Rome, however, is distinctly lacking. Unlike the traditionally affluent (and better excavated) neighborhoods on the Palatine and the hills surrounding the Forum, much less is known about the population of the Aventine. Though the archaeological record provides some data, it generally excludes domestic dwellings from the Augustan period, with the exception of two houses located on the western slopes of the hill.[3] The textual record also provides little assistance. Cicero remarks in one of his letters to Atticus that he owned rental houses "in the *Argiletum* and the Aventine"[4], and according to Vitruvius, a

[1] Haselberger, 2002, 62.
[2] ibid, 63.
[3] ibid, 62.
[4] Letters, 12.32.

scribe named Faberius lived in a lavish peristyle-house, also located on the Aventine.[5]

The houses found during excavations and those described above indicate a wealthier class of resident than would be expected in an area with plebeian heritage. However, the residential landscape of ancient Rome, unlike that of the well-excavated Campanian cities, developed spontaneously.[6] It was not uncommon to find an opulent *domus* located amongst hastily built tenements or apartment buildings. In the poorer neighborhoods, however, lavish private dwellings would certainly not have been the rule. This would likely have been the case on the Aventine; tradition dictates that the vast majority of its citizens lived in *insulae*, or apartment blocks.

One possible means of verifying the validity of this common perception lies in the work of Sextus Julius Frontinus, who became *curator aquarum* in AD 97. Upon his ascension to the post, Frontinus conducted a personal review of the Roman water system. The results of this survey were recorded in *De Aquaeductu Urbis Romae*, a manual examining the state of the aqueducts at Rome- Frontinus provided descriptions of the individual aqueduct lines, their sources, delivery points and capacity.[7] In doing so, he also presented measurements of the amount of water delivered to the city via each aqueduct. The aim of this paper is to determine whether the traditionally plebeian population of the Augustan Aventine is represented in the data of *De Aquaeductu Urbis Romae*.

Frontinus' calculations have been poured over by numerous scholars in an attempt to elucidate a modern measure of Rome's water consumption. The conversion to modern units has proven difficult due to Frontinus' reliance on the quinaria- a unit of volume, not flow rate. Undeterred by the inherent difficulties, however, scholars have used these numbers in effort to determine both total population and population density within the city. This work has resulted in a wide range of outcomes and has led some scholars to question the validity of Frontinus' figures.[8]

As the *quinariae* was a measure solely of volume, Frontinus tells us how much water was present in a given aqueduct at the time of inspection. This is the difficulty in attempting to convert *quinariae* into a modern equivalent- there is no way to estimate at what rate each aqueduct was providing water. Modern research has attempted to eliminate this problem by estimating the flow velocity of individual aqueducts, but this provides far from certain results. Consequently, we are left with an ancient data set that, in large, cannot be accurately related to a modern day equivalent.

A fact which is often overlooked by historians is the validity of Frontinus' measurements in relation to one another. Though we cannot quantify the data in modern terms, we can observe how much water was being delivered by one aqueduct relative to another. The water delivered by each aqueduct was divided by Frontinus into three categories- that which was delivered "in Caesar's name"[9], that which was supplied for private

[5] de Architectura, 7.9.2.
[6] Livy 5.55.
[7] Dodge, 2000, 166.
[8] See Bruun, 1991, 13-19 and Delaine, 1995, 117-41.
[9] Front. 23.1.

consumption, and that which was provided to the public. These figures allow us to understand how water was being used in different parts of the city, and will provide the foundational data for this paper.

The Aventine

In addition to the historical evidence for the Aventine's largely plebeian composition, this concept is also reflected in its public buildings. Of the structures known to have been extant during the reign of Augustus, the most important was the *Temple of Diana Aventinus*, located on the central part of the hill. Built by Servius Tullius in the 6th century BC, this temple was the first public structure on the Aventine; it was surrounded by the *Lauretum*, a laurel grove in which was also housed the tomb of Titus Tatius, king of the Sabines.[10] By the Augusutan period, these ancient buildings would have served as a reminder of the city's founding and the Aventine's independent heritage.

In addition, the hill was home to its own version of the Capitoline triad, found in the temples of *Jupiter Libertas*, *Juno Regina*, and *Minerva*, which were rebuilt by Augustus, perhaps as a sign of good faith to the plebs. The main access to the northern Aventine from the city was by way of the *Clivus Publicius*, a road constructed by plebeian *aediles* and along which the Temple of Ceres, the bread market, and the *castellum* of the Aqua Appia were located.[11] All of these structures are in some way connected with plebeian interests, and provide further evidence for the traditional understanding of the Aventine as the home of a large lower-class population.

The hill itself is made up of two elevated areas, based on a roughly NW-SE axis. A channel runs between these heights, and in the Augustan period it contained a street which ran from what was probably the *Porta Rauduscula* in the south to the southern end of the *Circus Maximus* in the north. The northernmost of the two heights the Romans referred to as *Aventinus Major*; it will be referred to in this work as the Aventine proper. To the south, the *Aventinus Minor* was halved by the Servian Wall, which likely interrupted its urban development. It is this southern height, however, that was home to the sanctuary of *Bona Dea*; it was also purported to be the location where Remus was buried. For the purposes of this paper, however, it is the Aventine proper that is of main concern, as it made up the majority of the region *Aventinus*.

Aqua Appia & Regions Served

The first aqueduct to provide water to the city of Rome was the Aqua Appia, built in 321 BC by the censors C. Plautius Venox and Appius Claudius.[12] The Appia crossed the *Via Praenestina* at *Spes Vetus*, an area of high ground which was home to settling chambers of later aqueducts. Here its course continued without settling, however, and crossed the Caelian near the *Porta Capena* and then the lower Aventine before emptying into its *castellum*

[10] Dion. 3.43.
[11] Haselberger, 2002, 62.
[12] Front. 5.1.15.

at a place called *Salinae* near the *Clivus Publicius*. It was below ground for the vast majority of its length, only emerging upon arches at the *Porta Capena* for 60 feet before returning underground into the Aventine.[13]

In 144 BC, the Appia was repaired by Q. Marcius Rex; Agrippa refurbished it again in 33 BC followed by another repair by Augustus between 11 and 4 BC. During this final program, the aqueduct was supplemented by the Aqua Augusta, an ancillary branch which joined the Appia near *Spes Vetus*.[14] For the first 50 years of its existence, the Appia was the sole supplier of water to Rome. It was followed over the next three centuries by the introduction of the Anio Vetus, the Aqua Marcia, Tepula, Julia, and Virgo- so that by the time of Augustus' reign all quarters of the city were well supplied with water.

Fig. 1 | **Number** | **Name** | **Aqueduct(s)**
---|---|---
1 | Porta Capena | Anio Vetus, Marcia
2 | Caelimontium | Appia, Julia
3 | Isis et Serapis | Anio Vetus, Marcia, Julia
4 | Templum Pacis | Anio Vetus, Marcia, Tepula
5 | Esquilae | Anio Vetus, Marcia, Tepula, Julia
6 | Alta Semita | Anio Vetus, Marcia, Tepula, Julia
7 | Via Lata | Anio Vetus, Marcia, Tepula, Virgo
8 | Forum Romanum | Appia, Anio Vetus, Marcia, Julia
9 | Circus Flaminius | Appia, Anio Vetus, Marcia, Virgo
10 | Palatium | Marcia, Julia
11 | Circus Maximus | Appia
12 | Piscina Publica | Appia, Anio Vetus, Julia
13 | Aventinus | Appia
14 | Transtiberim | Appia, Anio Vetus, Marcia, Virgo

serving the Aqueducts Regiones Quattuordecim during the time of Augustus

As a result of this increase in availability, it was no longer necessary for the Aqua Appia to supply all districts with water in the Augustan age. Frontinus provides us with a list of the wards served by each aqueduct, and it seems likely that the Appia's distribution was refocused to serve the areas closest to its distribution point, particularly the Aventine and the Circus Maximus (*Fig. 1*). The Caelian, Forum, *Circus Flaminius*, *Piscina Publica*, and *Transtiberim* are also listed as receiving water from the Appia in the time of Frontinus. All of these regions, however, were served by at least one other aqueduct- the Forum, *Circus Flaminius*, and *Transtiberim* augmented by an additional three. So the focus of the Appia's water supply seems to have been the public buildings in *Circus Maximus* and the generally private dwellings of *Aventinus*.

The boundaries between the Augustan *Regiones* are difficult to ascertain; it is often unclear where one district ended and another began. For

[13] ibid.,. 5.4.22.
[14] ibid., 5.6.26.

Aventinus, however, the southern and eastern ends of the region seem to have been well defined by the Servian Wall- as Haselberger states, "it was the wall-defined terrain- not the natural topography- that describes the extent and essential unity of what was perceived, at least during the late-Republican and Augustan eras, as the *Aventinus*".[15] The western end of the region was also clearly delineated, both by the Servian Wall and the Tiber. In the valley to the north, lay the Circus Maximus, and here the boundary was defined by topography as well as the presence of the 11th ward, which probably began just at the bottom of the Aventine. *Aventinus*, then, would have been composed of the Aventine proper and a small portion of *Aventinus Minor*.

The area defined by *Circus Maximus*, though its boundaries are less clear, can also be determined by the nature of the topography and wards surrounding it. To the south and the north, the region was bounded by *Aventinus* and *Palatium*, to the west by the Tiber. Here it probably included parts of the *Forum Bovarium*. The eastern portion of the district would have been defined by the Servian Wall and *Caelemontium*. In general, we may think of *Circus Maximus* as a very public ward- the presence of the Circus and the city's major cattle market point to this fact. Though there must have been some domestic areas present during the Augustan period, it seems unlikely that they defined the region's urban identity. Thus, we may be fairly certain that of the two wards solely served by the Aqua Appia, the residential population of *Aventinus* would have had a far greater need for a localized public water supply.

Data

Because Frontinus' work was completed in the last decade of the 1st c. AD, using his calculations to examine the water systems of other periods in Rome's history presents a number of concerns. One of the great benefits of investigating the distribution of the Aqua Appia in *Aventinus* is that these problems can be addressed by adjusting the time period of examination. Because the last repair and refurbishment of the Appia prior to the creation of *De Aquaeductu* occurred with the addition of the Aqua Augusta in 4 BC[16], we can assume that Frontinus' distribution figures are reasonably accurate for the late Augustan period.

The volume of the aqueduct may have suffered to some extent due to a lack of maintenance, but no more so than the other aqueducts under consideration. This universal reduction would not have greatly affected the percentages of distribution within the system. As the Aqua Claudia and Anio Novus (which augmented the water supply of all districts) were constructed during the reign of Claudius, they have been omitted from examination. Further, since the Aqua Alsietina delivered water only to *Transtiberim*, it too has been omitted. What we are left with, then, are the six aqueducts providing water to districts inside the city in the last years of Augustus' reign (*Fig. 2*).

[15] 2002, 62.
[16] Front. 5.6.25.

Aqueducts			
Name	**Wards served**	**Amount of water/ Quinariae**	**Percentage**
Anio Vetus	3,4,5,6,7,8,9,12,14	1508	22
Appia	***2,8,9,11,12,13,14***	***697***	***10***
Julia	2,3,5,6,8,10,12	548	8
Marcia	1,3,4,5,6,7,8,9,10,14	1472	21
Tepula	4,5,6,7	331	5
Virgo	7,9,14	2304	34

Fig. 2

Amount of water distributed by each aqueduct

Critically, the water provided by each of these aqueducts was further broken down by Frontinus into imperial, private and public allotments (*Fig. 3*). These calculations provide a far more detailed understanding of how water was used. In areas of high affluence, one would expect to find a large percentage of water being provided to private housing. However, these numbers are relatively similar for each aqueduct at the time of Augustus. This is surprising- we know from the *Notitia Regionem* that the *insula* outnumbered the *domus* 26 to 1 by the fourth century (*insulae per urbem totem* XLVI.DCII, *domos* M.DCCXC).[17] Though this ratio would not have been as drastic in the Augustan period, it is clearly not reflected at all in the water numbers provided by Frontinus. However, water flowed constantly to homes given permission to tap the line, and it was used not only for cooking and cleaning but also in private baths and gardens. This type of conspicuous consumption renders it virtually impossible to compare private to public use.

Aqueduct	% Caesar	% Private	% Public
Anio Vetus	4	30	37
Appia	***22***	***28***	***51***
Julia	3	27	70
Marcia	8	37	30
Tepula	10	72	15
Virgo	22	15	63
Average	13	29	47

Fig. 3 Distribution breakdown

Frontinus' statistics on public consumption provide far greater detail about its consumers, particularly in respect to the Aqua Appia. *Figure 3* indicates that the public distribution of the Appia was only slightly above the city average of 47%. This is not necessarily unexpected, since the table is somewhat distorted by the presence of Agrippa's monumental building program on the *Campus Martius*, which utilized some 1380 of the 2304

[17] *Not.Reg. HB 20*.

quinariae provided by the Aqua Virgo– by far the city's largest water supplier (see "*% Public Works*" in *Fig. 4*).

Aqueduct	%Camps/Total Water Supplied	%Public Works/Total Water Supplied	%Munera/Total Water Supplied	%Public Basins/Total Water Supplied
Anio Vetus	3	13	6	14
Appia	***1***	***18***	***0***	***32***
Julia	13	33	12	12
Marcia	3	3	7	17
Tepula	4	2	0	10
Virgo	0	60	1	2
Average	3	28	4	12

Fig. 4 Percentages of public distribution

The more important numbers are revealed in *Fig. 4*, however, which indicates the types of public consumption occurring via each aqueduct. In areas where the majority of the population was poor, we would expect to find a much higher percentage of an aqueduct's supply being provided to public basins. Here we see that the percentage of water supplied to basins by the Aqua Appia (32%) is dramatically higher than that of any other aqueduct in the city. In fact, the Appia provided over a quarter of the total water to public basins in the city- this is a huge amount for an aqueduct which supplied only a tenth of the overall distribution.

Conclusions

As noted earlier, Frontinus' distribution data indicates that *Circus Maximus* and *Aventinus* were the two major benefactors of Aqua Appia's waters. Though there was, no doubt, distribution to other wards, the entire water supply of these two regions was provided by the Appia. It is also notable that the other reasonably large amount of the Appia's public distribution went to public works. These would typically include baths, monuments, theatres, or *stadia*- just the sort of buildings present in the region of *Circus Maximus.*

Frontinus notes that the Appia provided 226 quinariae to 92 basins[18], but fails to describe where any of the basins are located. The *Notitia Regionem*, however, does indicate the number of basins present in each city ward, listing 20 for *Circus Maximus* and 88 for *Aventinus* (*Regio XI Circus Maximus: lacos XX, Regio XIII Aventinus: lacos LXXXVIII*).[19] Though there was obviously an increase in these numbers between the first and third centuries, this evidence indicates that the Aventine was the major consumer of water supplied to basins regardless of century. This being the case, it is not unreasonable to assume that Frontinus' numbers do reflect the plebeian nature of the population present on the Aventine during Augustus' reign.

[18] Front. 2.79
[19] *Not. Reg. Reg. XI, 25, Reg.XIII, 26.*

Hodge and Blackman maintain that the data provided by Frontinus indicate the aqueducts which *may* have provided water to each region. They argue that the *curatores aquarum* were capable of rerouting certain aqueducts in an effort to meet shifts in demand throughout the city.[20] In particular, they question the validity of the Aqua Appia's distribution to the Campus Martius and *Transtiberim*, due to their more remote locations.[21] What they fail to recognize, however, is the Appia's initial role in the city's water system. As the first aqueduct to supply Rome with water, it would have been necessary to provide distribution to as many regions as possible. Though neither the Campus Martius nor *Transtiberim* were densely populated areas during the late 4th and early 3rd centuries BC, there is certainly not enough evidence to be sure that the Appia wasn't providing them water. Due to expanding populations over the following centuries, further aqueducts were built in an effort to match demand in these regions. By the time of Augustus, this construction program would have allowed the Appia to focus its distribution in the areas near its main *castellum,* functioning mainly in a supporting or emergency role for the other regions in the city.

Whether an individual *curator aquarum* had the capability of rerouting the flows of specific aqueducts depending upon circumstances is essentially irrelevant to this paper. It is the distribution of water after its arrival at the main *castellum* of each aqueduct that is critical, as it was here that the water was divided into the three subsidiary branches (Caesar, private, public). Whether water was coming from another aqueduct to augment the flow at this point is generally of no consequence- it is only the numbers following the division that help to determine the nature of the Aventine's population.

The data presented here cannot be viewed as definitive evidence for the presence of a large lower class population in *Aventinus*. An ancient record such as *De Aquaeductu Urbis Romae* is always subject to miscalculations or errors in translation. When presented alongside the popular history of the hill and the traditional understanding of its Augustan makeup, the large amount of water delivered to public basins in the district seems appropriate. Certainly there is much work left to be done on this subject- surveys of *castella* and basins in other areas believed to be densely populated (Ostia, for example) would be greatly beneficial. A greater understanding of exactly how water was used both publicly and privately in the Roman world would also help to verify Frontinus' numbers, for as Kleijn states, "no systematic archaeological studies of water use indoors or on private property have been published yet".[22] However, if we assume that what Frontinus documented made sense to *him*- and that his numbers are valid in respect to one another- then hopefully the arguments presented here go some way in providing a better understanding of the urban character of the Augustan Aventine.

[20] 2001, 127.
[21] ibid, 126.
[22] 2001, 78.

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