

# RESTORING THE ANCIENT WATER SUPPLY SYSTEM IN RENAISSANCE ROME:

The Popes, the civic administration, and the Acqua Vergine

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## Introduction

When the humanist Pier Paolo Vergerio recorded his first impressions of Rome in 1398, he described the legendary hills overlooking the Tiber as deserted, while the modern population clustered along the riverbank, erecting flimsy houses among the massive ancient remains.<sup>1</sup> Vergerio, familiar with the prosperous, orderly, mercantile towns of Padua and Florence, must have viewed the ramshackle sprawl of late-medieval Rome with fascination, and he made a pointed contrast between the imposing character of the archeological ruins and the insignificance of the modern constructions grafted onto them. He also observed the fundamental division between the *abitato*, the low-lying, densely-inhabited part of the city immediately adjacent to the Tiber, and the *disabitato*, the uninhabited, elevated regions beyond. This division would persist into the sixteenth century and was largely fixed by the range of the water-sellers, or *acquarenari*, who delivered water in barrels collected from the Tiber.<sup>2</sup> Because the higher land within the Aurelian Walls was beyond reach of the *acquarenari* and therefore without a steady water supply, it tended to be thinly populated. Vergerio's observations, perhaps unintentionally, revealed the fundamental role played by water in shaping the post-classical city.

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1. "Pars montana deserta est; plana tamen et quae est ad flumen proxima colitur, ubi collapsis veteribus aedificiis novae nunc ac fragiles casae grandibus insident fundamentis." Leonardo Smith, ed., *Epistolario di Pier Paolo Vergerio*, vol. 74, *Fonti per la storia d'Italia* (Rome: 1934), 217. The text is also available in Pier Paolo Vergerio, "Epistola (LXXXVI)," in *Codice topografico della città di Roma*, ed. Roberto Valentini and Giuseppe Zucchetti (Rome: 1953), 4.98. For Vergerio's interests, see Roberto Weiss, *The Renaissance Discovery of Classical Antiquity* (Oxford: 1969), 56-57.

2. Emma Marconcini, "La magistratura delle acque e sua evoluzione dal XIV secolo al 1860," *Il trionfo dell'acqua: acque e acquedotti a Roma, IV sec. a.c.-XX sec.* (Rome: 1986): 258.

3. As attested by thirteenth-century property sales registered near the Trevi fountain; see Robert Brentano, *Rome before Avignon* (Berkeley: 1990), 29.

The only ancient aqueduct that continued to function in Renaissance Rome was the Acqua Vergine. It supplied water to the Trevi fountain at the foot of the Quirinal hill, and in turn the surrounding district remained populous, despite its relative distance from the Tiber.<sup>3</sup> Beginning in the fifteenth century, the Acqua Vergine became the object of new restoration efforts. The maintenance of the conduit was traditionally the prerogative of the civic administration on the Capitoline hill, but increasingly such work was also driven by the Popes, who used these public works to gain political advantages and reinforce their growing temporal authority. This article will investigate how the Renaissance repairs and maintenance of the Acqua Vergine were negotiated by these two poles of political power. Restoring the aqueducts allowed the city to flourish and expand, and perhaps more any other intervention epitomized the Renaissance revival of ancient Rome.

## Ancient structure and design

In 19 BCE Agrippa completed the conduit of the new Aqua Virgo, the sixth aqueduct to be added to the network of aqueducts converging upon the capital.<sup>4</sup> According to legend, a maiden showed Agrippa's soldiers to its underground spring

4. Frontinus, the *curator aquarum* or water commissioner under Nerva, wrote the *De aquaeductu urbis Romae* in 97 CE; for a recent discussion of this text, which remains the fundamental source for the study of Roman aqueducts, see Harry Evans, *Water Distribution in Ancient Rome: the Evidence of Frontinus* (Ann Arbor: 1997). For bibliography on the Acqua Vergine see Guglielmo De Angelis D'Ossat, "Studio bibliografico sull'origine dell'Acqua Vergine," *Bollettino del naturalista*(1907): 1-32, Susanna Le Pera, "Aqua Virgo," in *Lexicon Topographicum Urbis Romae*, ed. Eva Margareta Steinby (Rome: 1993). Other sources include Alberto Cassio, *Corso delle acque antiche portate da lontane contrade fuori e dentro Roma* (Rome: 1756), Carlo Fea, *Storia delle acque antiche sorgenti in Roma* (Rome: 1832), Rodolfo Lanciani, *Le acque e gli acquedotti di Roma antica* (Rome: 1881; repr., 1975), Esther Boise Van Deman, *The Building of the Roman Aqueducts* (Washington: 1934), Thomas Ashby, *The Aqueducts of Ancient Rome* (Oxford: 1935), A. Trevor Hodge, *Roman Aqueducts and Water Supply* (London: 1992), Rabun Taylor, *Public Needs and Private Pleasures: Water Distribution, the Tiber River and the Urban Development of Ancient Rome* (Rome: 2000), Harry Evans, *Aqueduct Hunting in the 17th century: Raffaello Fabretti's De aquis et aquaeductibus veteris Romae* (Ann Arbor: 2002).

at Salone, located about ten kilometers outside of Rome.<sup>5</sup> The Aqua Virgo, like most of the other conduits, originated on the eastern side of the Tiber valley, although its source was both slightly further north and closer to Rome than the others (Fig. 1). As the low elevation of the spring dictated the height of the system, the aqueduct could only reach the lower parts of Rome. The Virgo was thus perfectly suited to supply the new monuments projected by Agrippa for the low-lying Campus Martius, including the Baths of Agrippa, the artificial lake known as the Stagnum Agrippae, and the Euripus, a broad channel leading to the Tiber.<sup>6</sup>

The conduit traveled for most of its route below grade, following the Via Collatina and then the Via Praenestina, where the only sign of its presence was a short stretch of brick arcades across the occasional valley.<sup>7</sup> Before reaching Rome, the conduit turned abruptly north to circle the city before entering at its northern gate. This significant detour may have been imposed by property owners who refused to allow the construction of a more direct route, thus forcing the Virgo to travel through less populated districts.<sup>8</sup>

The conduit entered Rome below the western slope of the Pincian hill, under the present site of the Villa Medici. It traveled underground to the lower end of the present Via Gregoriana, where it emerged to continue its trajectory across the Campus Martius on elevated arcades.<sup>9</sup> Thus within the city walls the Aqua Virgo acquired a monumental presence: the conduit rode on top of more than one hundred arches, sometimes more than ten meters above the ground. These arcades, in contrast with the brick arcades outside the city walls, seem to have featured travertine construction.<sup>10</sup> Although the

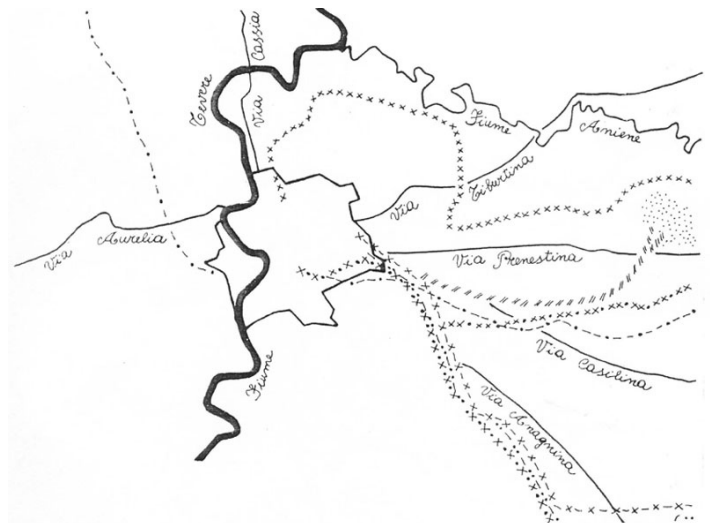


FIG. 1. Aqueduct system of ancient Rome. From Susanna Le Pera, "Aqua Virgo," in *Lexicon Topographicum Urbis Romae*, ed. Eva Margareta Steinby (Rome: 1993).

Aqua Virgo arcades ended near the present church of S Ignazio, excavations have revealed a distribution tank or *castellum* and lead piping that would have supplied water elsewhere in the Campus Martius.<sup>11</sup>

Numerous repairs were made to the Aqua Virgo in antiquity, as an essential source for the city water supply. It was restored under Tiberius, and then again under Claudius, after disruptions caused by Caligula's building projects in the Campus Martius.<sup>12</sup> Further restorations to the aqueduct took place in the fourth century under Constantine.<sup>13</sup> As part of the Claudian rebuilding program, monumental arches were constructed to carry the aqueduct across principal roads in the Campus Martius. At least one such arch still stands today, at the Via del Nazareno, north of the present Trevi fountain, built with heavily rusticated travertine blocks (Fig. 2).<sup>14</sup> A more elaborate triumphal arch carried the aqueduct across the Via Lata, the

5. A variant legend ascribed the name of the Aqua Virgo to the water for its purity and quality; another legend noted water from the channel refused to mingle with water from a neighboring spring dedicated to Hercules. See Le Pera, "Aqua Virgo," 72.

6. Ashby, *The Aqueducts of Ancient Rome*, 182. The water of the Aqua Virgo was considered especially well-suited for bathing, and it may have also supplied the Baths of Nero; see Taylor, *Public Needs and Private Pleasures*, 46.

7. As Agrippan aqueducts made extensive use of concrete, the brick construction probably dates from a later Roman restoration; see Van Deman, *The Building of the Roman Aqueducts*, 10. Of its total 21 kilometer length, 19 kilometers passed underground; see Maria Grazia Tolomeo, "L'acquedotto Vergine (sec. XVI-XVIII)," in *Il trionfo dell'acqua* (Rome: 1986), 205.

8. See Taylor, *Public Needs and Private Pleasures*, 103-06. As Taylor observes, Frontinus indicated that "almost" all the aqueducts traveled across private property; evidently the Aqua Virgo was the exception. The route through the northern Campus Martius also conveniently traversed property belonging to Agrippa's supporters.

9. According to Frontinus, "initium arcuum Virginis sub hortis Lucullanis." Lanciani calculated the total length of the Aqua Virgo carried on arcades inside the Aurelian Walls to be 1036 meters; see Rodolfo Lanciani, *Le acque e gli acquedotti di Roma antica* (Rome: 1881, repr. 1975), 337.

10. Travertine, tufa, and peperino fragments associated with these arcades have been identified; Ashby suggests the original Agrippan arcades were of high-quality travertine construction. See Ashby, *The Aqueducts of Ancient Rome*, 175-77.

11. Lanciani, *Le acque e gli acquedotti di Roma antica*, 339. An Aqua Virgo fountain built by Agrippa is described in Chifletius, "Aqua Virgo, fons Romae celeberrimus," in *Thesaurus antiquitatum romanarum* (1697), chap. 28, c. 1786. Aicher has concluded that terminal display fountains were largely an invention of the post-classical period; see Peter Aicher, "Terminal Display Fountains (Mostre) and the Aqueducts of Ancient Rome," *Phoenix* 47, 4 (1993): 339-52.

12. Emilio Rodriguez Almeida, "Arcus Claudii (Via del Nazareno)," in *Lexicon Topographicum Urbis Romae* (Rome: 1993), 86.

13. Le Pera, "Aqua Virgo," 72.

14. Almeida, "Arcus Claudii (Via del Nazareno)," 86; see also Filippo Coarelli, *Roma: guida archeologica* (Rome-Bari, 2001), 309. The arch at Via del Nazareno dates to 46 CE.



condotto dell'acqua vergine. A Monumento di Claudio. B Ingresso di Traiano fatto agli archi anteriori e successivamente al fusto monumento. C Nuova forma dell'aquedotto innalzata dai moderni unita que pulita dallo spirito antico. Questo condotto rimane in oggi interrato a livello di capilla del monumento.

FIG. 2. Giovanni Battista Piranesi, View of Arcus Claudii (Via del Nazareno).

present Via del Corso, bearing inscriptions to commemorate the Roman conquest of Britain (Fig. 3).<sup>15</sup>

Above all, the longevity of the Aqua Virgo may be attributed to its submerged conduit, which made it less vulnerable to damage, and the renowned purity of its water supply.<sup>16</sup> Nevertheless, the aqueduct still required regular maintenance; throughout its history, workers periodically descended into its channel or *specus* to repair damage and remove accumulated calcareous deposits to guarantee its continued operation.<sup>17</sup>

### Medieval history and repairs

The first major disruption to the Roman aqueduct system occurred during the attack of the Goths in 537 CE.<sup>18</sup> Evidently the damage was not catastrophic, for the system continued to function under the Byzantine administration. Significant restorations were again made in the eighth century under Hadrian I, providing enough water to satisfy “almost all of Rome.”<sup>19</sup> The peculiar advantages of the Aqua Virgo became apparent during this time of limited resources and political turbulence. The aqueduct was easier to maintain than any of the others, as it traveled only a short distance, and its submerged conduit was insulated from damage. Perhaps the most serious threat to its operation was the freeze-thaw cycle.

15. The structure was dedicated in 51-52 CE; it suffered major alterations early in its history, and some of its decorative elements were later reused in a new arch built by Diocletian further down the Via Lata. See Sandro De Maria, “Arco di Claudio per le vittorie britanniche,” in *Gli archi onorari di Roma e dell'Italia romana* (Rome: 1988), 280, Emilio Rodriguez Almeida, “Arcus Claudii (a. 43 d.C.),” in *Lexicon Topographicum Urbis Romae*, ed. Eva Margareta Steinby (Rome: 1993), 85.

16. Frontinus emphasized the clarity of the Aqua Marcia and the Claudia (see Evans, *Water Distribution in Ancient Rome: the Evidence of Frontinus*, 38.). However, in antiquity the water supplied by the Aqua Virgo was cold and of excellent quality (personal communication by Rabun Taylor).

17. The constant maintenance required for aqueducts in Rome due to the high mineral content of the water is discussed in Taylor, *Public Needs and*

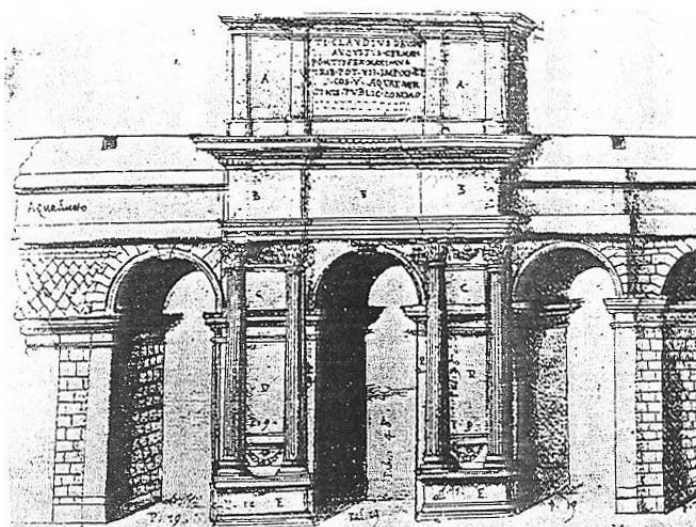


FIG. 3. Pirro Ligorio, Reconstruction of Arcus Claudii (Via del Corso). BAV Ottob. lat. 3373, between 16r-17r.

At the site where the Trevi now stands, the original channel turned abruptly west into the Campus Martius to avoid the Quirinal hill, forming an acute angle in the conduit.<sup>20</sup> This angle would be vulnerable to damage, and it is likely that the restorations of Hadrian I shortened the conduit to this point. The conduit beyond the Trevi fell into disuse, but its arcades long survived as a familiar landmark in the city; for example, the medieval Einsiedeln itinerary noted the fragmentary sections of the channel as “forma Virginis fracta.”<sup>21</sup> In the sixteenth century Andrea Fulvio noted many of the remains were still visible throughout the Campus Martius.<sup>22</sup>

*Private Pleasures*, 30. See also Hodge, *Roman Aqueducts and Water Supply*, 99-103.

18. The Gothic destruction of the aqueducts is recorded in Procopius, *History of the Wars*, 5.19. For the medieval history of the aqueduct system see Richard Krautheimer, *Rome: Profile of a City, 312-1308* (Princeton: 1980), Robert Coates-Stephens, “The Walls and Aqueducts of Rome in the Early Middle Ages, AD 500-1000,” *Journal of Roman Studies* 88 (1998): 166-78.

19. “...tantam aquae abundantiae praefulsit, qui poene totam civitatem satiavit.” *Liber Pontificalis*, ed. Duchesne, vol. 1 (Paris: 1886), 505. “Poene totam civitatem” probably referred only to the densely populated *abitato*; see Krautheimer, *Rome: Profile of a City, 312-1308*, 252. Repairs were recorded for the Aqua Virgo, the Aqua Claudia, the Aqua Traiana, and the “Aqua Jovia,” probably referring to the Aqua Alexandrina and the Aqua Antoniniana; see Coates-Stephens, “The walls and aqueducts of Rome in the early middle ages,” 172-76.

20. This was also a convenient site for a fountain, because it was easily accessible from three directions. The “tre vie” converging at the piazza also probably provided the origin for the name; see John Pinto, *The Trevi Fountain* (New Haven: 1986), 21.

21. Anonymous, “Codice Einsiedelense,” in *Codice topografico della città di Roma*, ed. Roberto Valentini and Giuseppe Zucchetti (Rome: 1942), 2.186. Valentini and Zucchetti date the Einsiedeln manuscript to 9-10 CE.

22. “...olim ea forma magnam martii campi planiciem ut signa adhuc apparet.” Andrea Fulvio, *Antiquitates Urbis* (Rome: 1527), 35r.

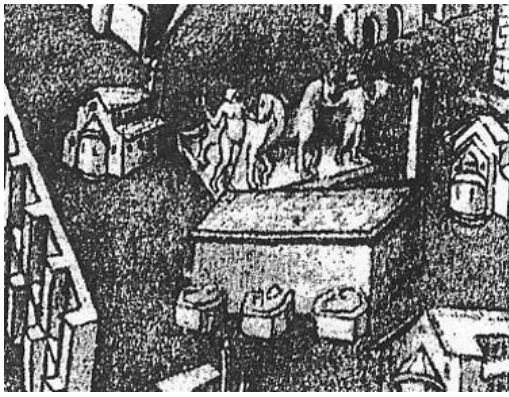


FIG. 4. Taddeo di Bartolo, Trevi Fountain, 1414

The earliest records of the Capitoline administration that still survive expressed specific interest in the maintenance and care of the Aqua Virgo, or the Acqua Vergine as it was called in Italian, and the Trevi fountain.<sup>23</sup> Already in the new city statutes issued in 1363, six paragraphs were dedicated to the care and maintenance of the Acqua Vergine, to be administered by the *marescalci curie capitollii*, or the subordinate officials appointed by the Capitoline magistrates.<sup>24</sup> These officials were entrusted with supervising the conduit along its length from its entry point at the northern gate of Rome to the Trevi fountain.<sup>25</sup> They were also authorized to protect the conduit from secondary siphons and penalize all offenders.<sup>26</sup> The 1363 statutes expressly prohibited all unsanitary practices at the Trevi that might contaminate the water supply, such as bathing, washing animals, or laundry; the statutes further stipulated that all property owners who possessed *spiragli* or openings into the channel were responsible for sealing these openings to prevent their contamination by rainwater.<sup>27</sup> The extraordinary

23. For the jurisdiction of the Capitoline administration over the Acqua Vergine, see Marconcini, "La magistratura delle acque e sua evoluzione dal XIV secolo al 1860," 258-65. See also Raffaele Marchetti, *Sulle acque di Roma antiche e moderne* (Rome: 1886).

24. "Quod marescalci curie capitollii sint patarentes et curam habeant aque fontis trivii," in book 3, chapter 126; see Camillo Re, *Statuti della città di Roma* (Rome: 1880), 264.

25. Ibid. The code stipulated the exact length of the conduit to be supervised: "requirere et requiri facere forma dicte fontis et aque trivii a cancellis trivii usque ad ortum ecclesie Sancti leonardi." This orchard, at the edge of the city, was most likely the property of S Leonardo de Porta Flaminia; see Christian Hülsen, *Le chiese di Roma nel medioevo* (Florence: 1927), 299.

26. "...nullus audeat facere nec habere goccellum caulam sive per pertussium unde de dicta forma possit extrahere aquam sive per caulas fontis trivii." Re, *Statuti della città di Roma*, 264.

27. Ibid.

28. For the Taddeo di Bartolo map, see Amedeo Frutaz, *Le piante di Roma*, vol. 1 (Rome: 1962), 125-26.

29. "[Nicholas V] raccontò la fonte de Treyo, secondoché se dimostra per lettere et arma sua in più lochi, et questo lo fece in tempo suo." Stefano Infessura, *Diario della città di Roma, Fonti per la storia d'Italia* (Rome: 1890),

attention devoted to the care of the Acqua Vergine in the civic statutes emphasized its vital importance for the life of the medieval city.

### Restoring the Acqua Vergine under Nicholas V in 1453

The 1414 map of Rome by Taddeo di Bartolo included the Trevi fountain among the city's landmarks (Fig. 4).<sup>28</sup> The medieval fountain was evidently a simple rectangular structure, with three spouts pouring water into three basins. The fountain, aligned parallel to the route of the arcades behind it, faced west toward the Corso and the *abitato*. Although interventions by the civic administration ensured water continued to flow, the conduit became less efficient as it aged, and required constant patching and repairs.

The faltering aqueduct drew the attention of Nicholas V, who became the first Pope to sponsor the restoration of the system since the eighth century.<sup>29</sup> According to Giorgio Vasari, Leon Battista Alberti served as advisor for the papal intervention, which included not only repairs to the aqueduct channel, but which also transformed the appearance of the Trevi.<sup>30</sup> Whether Alberti willingly collaborated with Nicholas V on such large-scale projects redolent of papal absolutism is disputed.<sup>31</sup> Yet despite Alberti's possible antipathy to the Pope's political agenda, it seems quite likely that he would have been intrigued by these ambitious efforts to reshape the ancient capital. Further, he would have been uniquely qualified as a consultant for the work on the Acqua Vergine, given his research and knowledge of aqueducts as attested in the *De re aedificatoria*.<sup>32</sup>

50. Other sources for the restoration of the Acqua Vergine under Nicholas V include Cassio, *Corso delle acque antiche portate da lontane contrade fuori e dentro Roma*, Carroll William Westfall, In *This Most Perfect Paradise: Alberti, Nicholas V, and the Invention of Conscious Urban Planning in Rome, 1447-1455* (University Park: 1974), Cesare D'Onofrio, *Le fontane di Roma* (Rome: 1986), Marconcini, "La magistratura delle acque e sua evoluzione dal XIV secolo al 1860," 258-65, Pinto, *The Trevi Fountain*, Maurizio Gargano, "Niccolò V, la mostra dell'acqua di Trevi," *Archivio della società romana di storia patria* 111 (1988): 225-66, Charles Burroughs, *From Signs to Design: Environmental Process and Reform in Early Renaissance Rome* (London: 1990), Manfredo Tafuri, "Cives esse non licere: Nicolò V e Leon Battista Alberti," in *Ricerca del rinascimento: principi, città, architetti* (Turin: 1992), 32-88, Anthony Grafton, *Leon Battista Alberti, Master Builder of the Italian Renaissance* (London: 2000).

30. "Il pontefice, col parere dell'uno di questi duoi [Alberti] e coll' eseguire dell'altro [Rossellino] fece molte cose utili e degne di essere lodate: come furono il condotto dell'Acqua Vergine, il quale essendo guasto, si raccontò e si fece la fonte in sulla piazza de' Trevi, con quelli armamenti di marmo che si veggiono, ne' quali sono l'arme di quel pontefice e del popolo romano." Giorgio Vasari, *Le vite dei più eccellenti pittori, scultori e architettori*, ed. Gaetano Milanesi, vol. 2 (Florence: 1906), 538-39.

31. See Tafuri, "Cives esse non licere: Nicolò V e Leon Battista Alberti," 32-88.

32. For Alberti's discussion of the construction and operation of aqueducts, see Leon Battista Alberti, *On the Art of Building in Ten Books*, ed. Joseph

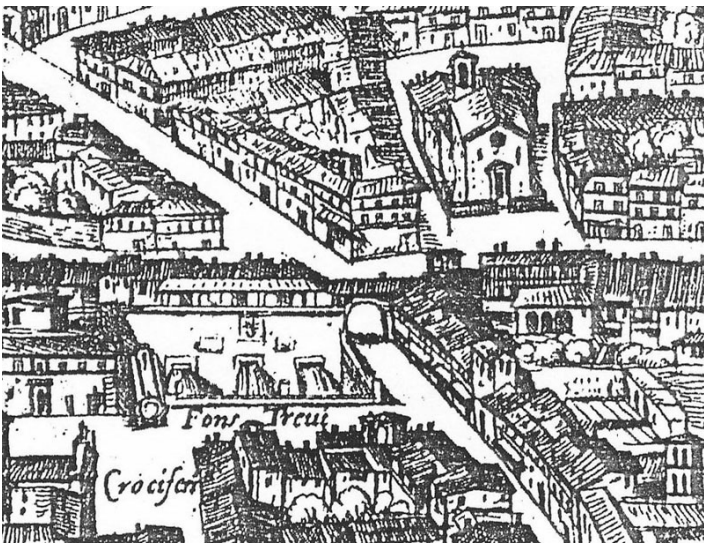


FIG. 5. Antonio Tempesta, *Recens prout hodie iacet almae Urbis Romae*, detail, Trevi Fountain. (Rome, 1593)

Unfortunately, the Trevi restoration was only visually documented almost a century and a half later, by Tempesta in the map of 1593 (Fig. 5).<sup>33</sup> However, Tempesta indicated that the overall rectangular form of the fountain was essentially unchanged from the time of Taddeo di Bartolo. A single large water trough had replaced the three individual basins, and on the wall above the spouts, heraldic shields commemorated the repairs.<sup>34</sup>

The Franzini guidebook of 1643 showed Nicholas V's fountain just before its demolition by Bernini (Fig. 6).<sup>35</sup> Despite the altered proportions, its overall form was still a plain fortified block. Franzini's view also depicted the large dedicatory inscription and heraldic shields in much greater detail; the inscription, in austere Roman letters, proclaimed the Nicholas V's role in restoring splendor to the ancient monuments of Rome.<sup>36</sup> The papal tiara and crossed keys crowned the inscription were flanked by two lower shields, each emblazoned with the "SPQR" insignia.

Such symbols allowed multiple readings through their arrangement and form. Although at first they might suggest the supremacy of the papacy over the civic government, Nicho-

Rykwert, Neil Leach, and Robert Tavernor (London: 1988), 335-41. For an incisive assessment of Alberti's involvement with Nicholas V's court, with praise for Tafuri's "scholarly magic" in transforming Alberti from champion of papal expansionism to critic of papal absolutism, see Grafton, *Leon Battista Alberti, Master Builder of the Italian Renaissance*, 302ff.

33. The earlier Du Pérac map (1577) did not show the Trevi fountain, as it was taken from the east.

34. There is evidence for more surviving remains of the ancient aqueduct in both the Du Pérac (1577) and Tempesta maps, which showed an arch spanning the Via del Lavatore to the south of the fountain, a surviving fragment of the disused arcades that originally carried the Acqua Vergine into the Campus Martius. The arch was demolished in 1617; see Pinto, *The*



FIG. 6. Federico Franzini, Trevi Fountain, 1643.

las V was the only Pope to use the crossed keys as his personal arms; thus the papal shield could have been interpreted also as a sign of personal munificence.<sup>37</sup> The reference to lions in the fountain design was equally ambiguous. The lion was the heraldic symbol of the medieval Capitoline government, and thus the use of lion-head waterspouts could suggest the subordination of the civic government to papal will, but also its continuing responsibility as curator of the Acqua Vergine.<sup>38</sup>

*Trevi Fountain*, 34.

35. See *Ibid.*, 34ff for this later history. Although Bernini's design for Urban VIII remained unrealized, it had the important urban consequence of rotating the Trevi fountain to face south, toward the papal palace on the Quirinal.

36. In fact, Franzini abbreviated the inscription; read in its entirety, it placed even greater emphasis upon the personal expenditure by the Pope in the restoration of the Acqua Vergine: "NICOLAUS V PONT. MAX / POST ILLUSTRATAM INSIGNIBUS MONUMENTIS URBEM / SUA IMPENSA IN SPLENDIDIORUM CULTUM / RESTITUI ORNARIQ. MANDAVIT / ANNO DOM. JESU CHRISTI MCCCCLIII / PONTIFICATUS SUI VII." Transcribed in A. Ciacconius, *Vitae e res gestae pontificum romanorum*, vol. 3 (Rome: 1667), 961. The austere form of the inscription has been identified as consonant with other markers commemorating Nicholas V's restorations across Rome; see Burroughs, *From Signs to Design*, 94.

37. Thanks to John Shearman for this observation. Cassio observed the similarity between Nicholas V and Agrippa, both of whom subsidized the work on the aqueduct entirely with personal funds; see Cassio, *Corso delle acque antiche portate da lontane contrade fuori e dentro Roma*, 280.

38. The lions are noted by Burroughs, *From Signs to Design*, illustration caption 33. For the eventual suppression of the lion, as medieval civic symbol, by the wolf, as symbol of the Renaissance papacy, see Massimo Miglio, "Il leone

Surviving documents provide only limited information regarding the extent of Nicholas V's repairs. A papal payment of 200 ducats was made on 18 June 1453 to Pietro di Giuliano da Cholona for repairing the *forma*.<sup>39</sup> This term could refer to a portion of the channel, or to the entire aqueduct, or even the form of the Trevi itself.<sup>40</sup> Considering the rapid completion of the repairs, the restoration probably only affected the section of conduit nearest to Rome, perhaps extending as far as the Via Salaria.<sup>41</sup>

The restorations by Nicholas V must be viewed in light of contemporary events, as the papal capital experienced severe political upheavals in the early 1450s.<sup>42</sup> Stefano Porcari's outspoken resistance to papal power fanned these tensions, and when he returned to Rome in 1453, defying a papal ban, he was swiftly captured and executed.<sup>43</sup> The repairs to the Trevi and the Acqua Vergine also took place in 1453, the same year as Porcari's execution, a coincidence that invites speculation regarding possible political motivations underlying this papal restoration.

Certainly under Nicholas V papal power expanded into spheres previously controlled exclusively by the Capitoline administration. For example, as noted earlier, the 1363 statutes delegated the care and maintenance of the Acqua Vergine to the civic magistrates and their staff, also known as the *maestri di strade*.<sup>44</sup> However, in 1452 Nicholas V authorized an extensive revision of the *maestri* statutes, which subtracted these figures from the authority of the civic administration.<sup>45</sup> Although the new statutes reaffirmed that the *maestri* were responsible for monitoring the aqueduct, they were now firmly subject to papal authority; as the introductory paragraph declared, the office

e la lupa: dal simbolo al pasticcio alla francese," *Studi Romani* 30 (1982): 177-86.

39. ASR, Camerale I, *Tesoro segreto*, busta 1287 (18 June 1453), 143r: "Spese che si fanno quest'anno in più disegni fuora di palazzo per mie mani deno dare addi XVIII de jugno duc. 200 [de Camera] con[tanti] a Pietro di Giuliano di Cholona di chomandamento di Nello, e quali N. S. dona per la forma de l'acqua de Treio, e duc. 200 papali lo dette al prefato N. S. più di sono de suo propri de quali non o fatta sicurtà." The document was published by Eugène Müntz, "Les monuments antiques de Rome au XVe siècle," *Révue archéologique* 2, 32 (1876): 166.

40. As noted by Gargano, "Niccolò V, la mostra dell'acqua di Trevi," 263. A tower shown adjacent to the fountain in the Taddeo di Bartolo map of 1414 may have been demolished as part of these works; see D'Onofrio, *Le fontane di Roma*, 46.

41. Water collected near the Ponte Salaria, "haud longe a ponte salario," was the primary source of the aqueduct by the sixteenth century; see Fulvio, *Antiquitates Urbis*, 34v.

42. Of particular relevance are Gargano, "Niccolò V, la mostra dell'acqua di Trevi," 225-66, Burroughs, *From Signs to Design*, passim, Tafuri, "Cives esse non licere: Nicolò V e Leon Battista Alberti," 32-88.

43. For Stefano Porcari, see Roberto Cessi, "La congiura di Stefano Porcari," in *Saggi romani: storia e letteratura, raccolta di studi e testi* 62 (Rome: 1956), 65-112, Hans Baron, *The Crisis of the Early Italian Renaissance* (Princeton:

was newly organized and approved by the Pope.<sup>46</sup> The papal shield inscribed upon the official registers further underlined the new allegiance of these officials to papal authority.<sup>47</sup> By extending papal control over the *maestri*, Nicholas V undermined the autonomy of the civic government and gained control over important elements of the civic infrastructure, including the Acqua Vergine.

Nicholas V's repairs to the Acqua Vergine also may have been calculated to benefit his supporters during this time of popular insurrection, and in particular the powerful Colonna family.<sup>48</sup> The church of SS Apostoli, the Colonna church, was restored in 1453, contemporary with the restoration of the Trevi. This ostensibly papal-funded restoration was actually financed using income from the sale of a large house near the Trevi, confiscated from one of the executed Porcari conspirators, to a Colonna prince. As Burroughs has observed, this "purchase...can have hardly occurred as a simple transaction on the open market."<sup>49</sup> The restoration of the Acqua Vergine caused local property to gain rapidly in value, and thus the Colonna stood to benefit significantly from papal interventions at the Trevi. Even the workman hired for the Trevi project, Pietro Giuliano da Cholona, was probably a Colonna retainer.<sup>50</sup> Thus although the repairs to the Acqua Vergine publicly advertised Nicholas V's concern for the general good, by rewarding local allies they also satisfied private political aims.

1966), 434-35, Massimo Miglio, "Viva la libertà et populo de Roma, oratoria e politica: Stefano Porcari," in *Paleographica, diplomatica et archivistica: studi in onore di Giulio Battelli* (Rome: 1979), 381-428, Charles Stinger, *The Renaissance in Rome* (Bloomington: 1998), 71. Although Porcari was highly respected in Rome, his fanatical republicanism invites question regarding his criticism of Nicholas V's government; Westfall, *In This Most Perfect Paradise*, 76.

44. For the history of this office in the fifteenth century, see Orietta Verdi, *Maestri di edifici e di strade a Roma nel secolo XV* (Rome: 1997).

45. The revised 1452 edition of the statutes is published by Emilio Re, "I maestri di strada," *Archivio della società romana di storia patria* 43 (1920), 5-102.

46. "...novamente facti et ordinati sopra li detti edefitij et strate de commandamento del prefato sanctissimo signor nostro papa Nicolò V." *Ibid.*, 88. Westfall maintains that the magistrates were not agents of the Pope, and that Nicholas V did not want to use them to extend his sway over Rome; however, he conceded they could "function as papal agents." See Westfall, *In This Most Perfect Paradise*, 83. However, Tafuri insists that Nicholas V intentionally subordinated this Capitoline office to papal authority; see Tafuri, "Cives esse non licere: Nicolò V e Leon Battista Alberti," 43-44.

47. Gargano, "Niccolò V, la mostra dell'acqua di Trevi," 237. Beginning under Paul II the *maestri* were directly paid by the *Camera apostolica* and swore fealty to the Pope.

48. For the links between Nicholas V, the Porcari conspiracy, and the Trevi, I refer to Burroughs, *From Signs to Design*, 95-97.

49. *Ibid.*, 96. The *commissarius generalis* of the papal household under Nicholas V, Nello da Bologna, was entrusted with the disposal of property confiscated from the Porcari conspirators.

50. *Ibid.*, 97.

## Collaborative papal-Capitoline administration of the Acqua Vergine

Yet the design of the Trevi fountain, in addition to its undeniable reference to Nicholas V, also indicated the continued presence of the Capitoline administration in maintaining the public utility. What were the reasons for suggesting this restoration was a shared collaborative venture between the Pope and the civic magistrates?

Nicholas V clearly had political incentives to favor an alliance with the Capitoline magistrates. In this time of extreme tension between the Pope and the leading citizenry, the Capitoline government offered the papacy a vital means to negotiate with the diverse social classes in the city.<sup>51</sup> Although the Porcari rebellion would be the last significant attempt to prevent the establishment of papal hegemony over the city of Rome, the design of papal-sponsored enterprises continued to publicize the alliance between the Popes and the civic government through the sixteenth century and beyond, undoubtedly intended as a reassuring sign of reconciliation and continuity between the two administrations.<sup>52</sup>

But Nicholas V also had practical reasons to support the traditional role of the civic magistrates as the curators of the Acqua Vergine. By 1453, the Conservators, the official title of the civic magistrates convening in the Palazzo dei Conservatori, had over a century of experience in maintaining the aqueduct system. As the aqueducts required diligent and constant care, the collective experience of the Capitoline administration represented an invaluable resource in the papal effort to increase the water supply for the growing city. As we will see, later Popes relied upon the civic magistrates to keep the system operational until the major institutional reforms of Pius V in 1570. Thus

51. For a useful discussion of the historic role of the civic government as mediator, see Laurie Nussdorfer, "Il 'popolo romano' e i papi: la vita politica della capitale religiosa," in *Storia d'Italia: Roma la città del papa* (Milan: 2000), 241-62.

52. Later designs for the Trevi fountain, such as the drawing attributed to Della Porta, retained the joint Capitoline and papal heraldry as prominent features; see Pinto, *The Trevi Fountain*, 31.

53. For documents between 1466-1468, see Müntz, "Les monuments antiques de Rome au XVe siècle," 166. The "scalpellini" hired under Paul II were from the De Tocco family, a noted family of masons from Lombardy; see Gargano, "Niccolò V, la mostra dell'acqua di Trevi," 262.

54. "Praeterea vero utilitati urbanae consulens, ductus aquae Virginis pene amissae, eliminatos prius perpetuo fornice, a monte Quirinali [Pincio] ad Trivii fontem sua impensa perduxit." Platina, *De vitis pontificum romanorum*, ed. Giacinto Gaida, vol. 2, *Rerum italicarum scriptores* (Rome: 1913-1932), 418. For the documents regarding the restoration of the Acqua Vergine under Sixtus IV, see Eugène Müntz, *Les arts à la cour des papes pendant le XVe et le XVIe siècle, Sixte IV-Leon X (1471-1521)*, vol. 28 (Paris: 1882), 174-76, Egmont Lee, *Sixtus IV and Men of Letters* (Rome: 1978), 247-48.

the conscientious presentation of the Trevi as a joint restoration had specific relevance in the context of Renaissance Rome. While the prominent heraldry emphasized the providential intervention of the Pope, it also acknowledged the indispensable contribution of the civic officials in supporting this essential service.

## Papal interventions at the Acqua Vergine, 1466-1513

Despite the political significance of Nicholas V's intervention at the Acqua Vergine, the physical function of the aqueduct was not greatly improved, and it soon required additional repairs. Work resumed on both the fountain and the conduit in 1466 under Paul II.<sup>53</sup> In preparation for the Jubilee of 1475, Sixtus IV repaired the arcades carrying the conduit to the Trevi, and cleaned the water channel.<sup>54</sup> In 1472 an ancient arch, perhaps a relic from the unused section of the Acqua Vergine, was demolished to provide travertine to build new aqueduct arcades.<sup>55</sup> The famous fresco of 1475 by Melozzo da Forlì celebrating the inauguration of the Vatican Library also celebrated the restoration of the Acqua Vergine, where the papal librarian Platina pointed to an inscription that listed the aqueduct among the greatest accomplishments of Sixtus IV's pontificate.<sup>56</sup> Francesco Albertini, writing in 1510, noted that Pope Julius II also incurred substantial expenses on behalf of the aqueduct.<sup>57</sup> Julius II, as Sixtus IV's nephew, had other motivations beside purely pragmatic reasons to repair the aqueduct, for continuing the works of Sixtus IV offered a means to perpetuate the memory of the Della Rovere dynasty in Rome.

## Humanist interest in the Acqua Vergine, 1500-1515

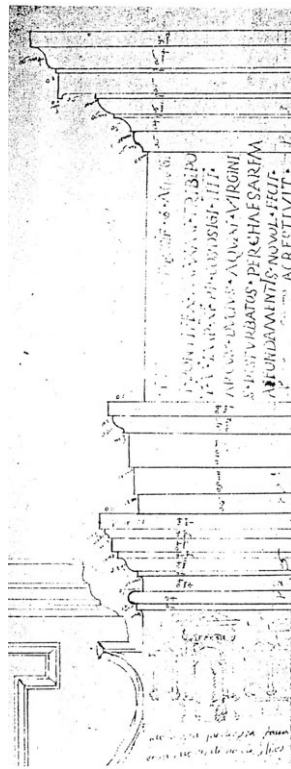
As a surviving fragment of antiquity, the Acqua Vergine also attracted the attention of humanists in early sixteenth-century Rome. Andrea Fulvio observed that the aqueduct traveled directly through the gardens of the noted humanist and antiquarian, Angelo Colocci, and mentioned a stone structure with an inscription, probably referring to the Claudian arch standing to

55. Müntz records the payment of 200 florins to masons, dated 10 October 1472: "patrono vinea in qua erat quidam arcus ex marmoribus tiburtinis qui demolitus fuit et dicta marmora portata in usum fornicum novorum aquae ductus Trivii." See Eugène Müntz, *Les arts à la cour des papes pendant le XVe et le XVIe siècle, Sixte IV-Leon X (1471-1521)*, vol. 28 (Paris: 1878-1880), 174.

56. The inscription is discussed by Matthias Winner, "Papa Sisto IV quale exemplum virtutis magnificentiae nell'affresco di Melozzo da Forlì," in *Arte, committenza, ed economia a Roma e nelle corti del rinascimento, 1420-1530* (Turin: 1995), 180-81. For the fresco and its original library setting see also Isabelle Jennifer Frank, "Melozzo da Forlì and the Rome of Pope Sixtus IV, 1471-1484" (Department of Fine Arts dissertation thesis, Harvard, 1991), 62-114.

57. "Praedictam aquam hoc anno non sine maximo dispendio Tua Sanctitas instauratis aquaeductibus restituit." Francesco Albertini, "Opusculum de mirabilibus novae et veteris urbis Romae," in *Codice topographico della città di Roma*, ed. Roberto Valentini and Giuseppe Zucchetti (Rome: 1953), 4.543.

FIG. 7. Fra Giocondo (attrib.), Arcus Claudii (Via del Nazareno), ca 1500.



tions.<sup>62</sup> Bartoli attributed a sheet of drawings with details from the Arch of Claudius to Fra Giocondo (Fig. 7).<sup>63</sup> The principal drawing, occupying the right-hand side of the sheet, documents the profile of the upper frieze and entablature of the arch, and its inscription.<sup>64</sup> Below, a small free-hand sketch depicts a portal flanked by two niches, set within a rusticated wall and crowned by the SPQR, and accompanied by a note indicating that this structure stood in the Colocci garden.<sup>65</sup> According to Bartoli, this small free-hand sketch represented an imaginary reconstruction of the Arch of Claudius.<sup>66</sup> However, the design, with its square openings and SPQR insignia, differs considerably from the design of the ancient aqueduct arch. Perhaps the sketch represented a gateway into Colocci's garden? The caption implied that the garden was a familiar landmark, and it could well have featured a noteworthy entrance. Although the SPQR inscribed above the doorway could be a gratuitous antiquarian invention, it is equally plausible that it referred to Capitoline authority over the ancient aqueduct. The presence of such an inscription would be appropriate here, confirming the role of the Capitoline administration in supervising and maintaining the aqueduct system that supplied water to Colocci's garden.

#### Capitoline supervision of the Acqua Vergine, 1513-1520

In 1513 Leo X issued a bull that authorized the Conservators to restore various civic structures, including the city's aqueducts, using an allotted income derived from the tax on wine, the *gabella studii*. The income was to be used by the civic adminis-

the north of the Trevi.<sup>58</sup> Colocci had purchased the surrounding property when he moved to Rome in 1513, and he established a villa and garden there that provided a setting for Pomponio Leto's Roman academy.<sup>59</sup> Nourished by water from the ancient aqueduct, the garden evidently made a strong impression upon visiting humanists and scholars, who praised it in their poems and epigrams.<sup>60</sup> Scholarly presence also stimulated archeological research, and Colocci himself was among the first to identify the original source of the aqueduct at Salone.<sup>61</sup>

It seems Fra Giocondo may have found occasion to investigate the Acqua Vergine. It is quite possible that the famous Vitruvian scholar would have visited Colocci's villa at the Acqua Vergine before his death in 1515, as Colocci expressed intense interest in his work, and a codex at the Vatican identified as Fra Giocondo's is closely covered with Colocci's nota-

60. For example, the Neapolitan humanist Girolamo Borgia celebrated the garden with an "Ecloga Felix" dedicated to Colocci, Julius II and his daughter Felice della Rovere Orsini; BAV, Cod. Vat. lat. 5225, 1013v-1015v. See Ingrid Rowland, *The Culture of the High Renaissance* (Cambridge: 1998), 185.

61. Colocci named Salone as the source for the Acqua Vergine in his epigram dedicated to Card. Agostino Trivulzio, who had purchased property nearby; see Ubaldini, *Vita di Mons. Angelo Colocci*, 57.

62. Ibid., 61. Fra Giocondo's edition of Vitruvius was published in 1511; see Pier Nicola Pagliara, "Vitruvio da testo a canone," in *Memoria dell'antico nell'arte italiana*, ed. Salvatore Settis, vol. 1 (Turin: 1986), 33-38. For the relations between Colocci and Fra Giocondo, see Pier Nicola Pagliara, "Una fonte di illustrazioni del Vitruvio di fra Giocondo," *Ricerche di storia dell'arte* 6 (1977): 64, no. 1a, and 90, no. 32b.

63. Uffizi Arch. 1541r, published in Alfonso Bartoli, *I monumenti antichi di Roma nei disegni degli Uffizi di Firenze*, vol. 1 (Rome: 1914), fig. 75.

64. "Arcus Ductus Aquae Virginis disturbatos per C. Caesarem a fundamentis novos fecit ac restituit." CIL 6.1252. This inscription referred to the damage caused by Caligula's construction projects (see note 12); in the drawing, the text is inserted vertically rather than horizontally, revealing more interest in textual rather than archeological veracity (and perhaps weakening the attribution to Fra Giocondo).

65. "...questo opera qui di sopra stava et sta inel girdino di Miser agnollo cholloccio in trevi." The note is transcribed by Alfonso Bartoli, *Descrizione dei disegni*, vol. 1, *I monumenti antichi di Roma nei disegni degli Uffizi di Firenze* (Rome: 1914), 19.

66. Ibid.

58. "Ea vero aqua quae nunc extat retinens solum aquae virginis nomen, concipitur extra portam pincianam, haud longe a ponte salario profundissimo labens cuniculo, per portam ingreditur pincianam, attollitur sub colle hortulorum lapidea forma ubi huiusmodi legitur inscriptio in hortulo nunc nobilis atque eruditi viri Angeli Colotii Antiquitatum unici amatoris." Fulvio, *Antiquitates Urbis*, 33v.

59. For Colocci's life and interests, see Federico Ubaldini, *Vita di Mons. Angelo Colocci, edizione del testo originale italiano* (Barb. Lat. 4882), ed. Vittorio Fanelli, *Studi e testi* 256 (Vatican City: 1969), Phyllis Pray Bober, "The Coryciana and the Nymph Corycia," *Journal of the Warburg and Courtauld Institutes* 40 (1977): 223-39, Vittorio Fanelli, "Ricerche su Angelo Colocci e sulla Roma cinquecentesca," *Studi e testi* 283 (Vatican City: 1979), Ingrid Rowland, "Raphael, Angelo Colocci and the Genesis of the Architectural Orders," *Art Bulletin* 76, 1 (1994): 81-104.



tration on behalf of improving the public appearance of Rome, including its walls, aqueducts, and bridges.<sup>67</sup> This tax had been used to subsidize civic services for almost a century, including repairs made by Sixtus IV to the Acqua Vergine.<sup>68</sup> Financing the repairs to the Acqua Vergine thus represented a collaborative process between the Pope and the civic magistrates, as funds dispensed by the Pope were then spent at the discretion of the Capitoline administration for the city's public works.

Guaranteeing the supply of water to the Trevi fountain represented a significant challenge in the early sixteenth century, as the conduit was prey to siphoning by private property-owners. Andrea Fulvio noted that a network of unofficial feeder lines flourished along the conduit, diverting water to numerous adjacent houses and gardens.<sup>69</sup> The civic administration took steps to regulate and restrict such unauthorized use, as recorded in a document of June 1520, where the Conservators complained that water intended for the Trevi instead had been diverted to a garden belonging to Girolamo Gottifredi.<sup>70</sup> Apparently Gottifredi's siphon reduced the fountain's water level noticeably, and the Conservators decreed the channel should be immediately restored to its original condition. Although it is unclear whether this legislation was successfully enforced, the document suggests the Conservators continued to attempt to uphold their traditional role as curators of the civic water supply, and actively sought to control the amount of public water diverted to private use.

### Paul III and restoring the Acqua Vergine to its original source, 1535

As demand for water from the ancient aqueduct continued to mount in the expanding papal capital, it became clear that a comprehensive restoration of the Acqua Vergine was necessary. While earlier restorations had focused only upon the section of the conduit nearest the city, by restoring the channel

67. "Donamus quoque eisdem Conservatoribus et populo in perpetuum gabellam omnem vini forensis huiusmodi, cum onere solvendi temporibus consuetis ex proventibus dictae gabellae salaria dictis collectoribus pro tempore debita, ac facultate residuum proventum in dictum ornatum (urbis) et murorum, aqueductuum et pontium, aliasque dictae urbis necessitates pro tempore ingredientes, de Consensu Consilii Romani, et non alias, convertendum." For this bull, issued 7 March 1513, see Marchetti, *Sulle acque di Roma antiche e moderne*, 193.

68. Beginning under Eugenius IV in 1433, income from the city wine tax provided a source for the university faculty salaries, with an express prohibition against diverting these funds to other sources; this prohibition however was quickly set aside. See D. S. Chambers, "Studium Urbis and Gabella Studii: the University of Rome in the Fifteenth Century," in *Cultural Aspects of the Italian Renaissance* (New York: 1976), passim.

69. "Hic sola aqua ex omnibus antiquis hodie in usum bibendi in urbem influit, et multos habet siphunculos et fistulas ad effundendas aquas vicinis domibus et accolis." Fulvio, *Antiquitates Urbis*, 35r.

to its source at Salone the quantity and quality of the water supply could be greatly improved.

This major intervention seems to have received new impetus under Paul III.<sup>71</sup> During a session meeting in November 1535, when the civic magistrates were debating ways to spend an unusual surplus income, the Pope specifically encouraged them to use it for improvements to the Acqua Vergine.<sup>72</sup> Paul III's interest may have been stimulated by a proposed renovation of the Acqua Vergine in an anonymous contemporary manuscript that has been attributed to the papal librarian, Agostino Steuco.<sup>73</sup> This text anticipated that the rehabilitated conduit would supply a splendid spectacle in the form of three new fountains along the Via del Corso (renamed the Via Paolina), celebrating the munificence of Paul III.<sup>74</sup> It has been observed that this particular proposal was not technically possible, for it envisioned a route over the Pincio that was beyond the capacity of the low-level Acqua Vergine system.<sup>75</sup> But such a proposal may have attracted the Pope's attention, and encouraged him to consider such a restoration.

Yet this restoration would be sidelined by the triumph of Charles V in 1536. Returning from his victory at Tunis, Charles V would enter Rome from the south, thus redirecting Paul III's attention to the other side of the city, so that preparations for a triumphal route from the Porta di San Sebastiano into the Forum now dominated the papal agenda. The restoration of the Acqua Vergine thus would be postponed for another generation.<sup>76</sup>

70. ASC, Cred. I, vol. 14, 125 (8 June 1520).

71. D'Onofrio, *Le fontane di Roma*, 52.

72. "Sua Santità saria desiderosa si spendessero in condur l'acqua di Salone, quale si condurria con dodici mila scudi vel circa." ASC, Cred. I, vol. 36, 319 (27 November 1535).

73. The fragmentary manuscript is BAV Vat. lat. 7246; see discussion by D'Onofrio, *Le fontane di Roma*, 52-59. Agostino Steuco has been the subject of recent investigation by Ron Delph; see Ron Delph, "From Venetian Visitor to Curial Humanist: the Development of Agostino Steuco's Counter-Reformation Thought," *Renaissance Quarterly* 47 (1994): 102-39; idem, "Vallus Grammaticus, Agostino Steuco and the Donation of Constantine," *Journal of the History of Ideas* 57 (1996): 55-77; idem, "Polishing the Papal Image in the Counter-Reformation: the Case of Agostino Steuco," *Sixteenth Century Journal* 23 (1997): 35-47. Although Delph does not discuss this fragmentary text, D'Onofrio's attribution seems plausible, based upon similarities to Steuco's 1547 publication "De revocanda in urbem aqua virgine."

74. These fountains were eventually realized at Piazza del Popolo, Piazza della Colonna, and Piazza Venezia; D'Onofrio, *Le fontane di Roma*, 57.

75. Ibid., 58.

76. The construction of the triumphal route into the city from the south effectively restored the ancient orientation of Rome toward the Mediterranean; see Maria Luisa Madonna, "L'ingresso di Carlo V a Roma," in *La festa a Roma dal Rinascimento al 1870*, vol. 1 (Roma: 1997), 53.

## Continued decline of the Acqua Vergine, 1548-1570

Toward the end of Paul III's reign, the deferred maintenance of the aqueduct had reduced the water supply at the Trevi to a trickle. In his 1548 guidebook to Rome, Lucio Fauno described the Acqua Vergine as ruined and providing hardly any water.<sup>77</sup> The progressive deterioration of the conduit in these years must also in part be ascribed to the limited resources of the Capitoline administration. Without financial support from the Pope, the civic magistrates were unable to conduct necessary maintenance; however, they periodically continued to assess its condition. In a session of 1550, the Conservators observed that if no preventative measures were taken, the ruinous state of the channel and abusive feeder lines would reduce the water supply to nothing.<sup>78</sup> The reference to abusive feeder lines was probably a thinly-disguised criticism of Pope Julius III, who had just erected his new Villa Giulia, with convenient access to the Vergine conduit, outside the northern gate to the city.<sup>79</sup> The remarkable waterworks of the immense villa, including the fountain at its entrance (Fig. 8), must have strained the capacity of the halting Acqua Vergine to the limit. Yet this deprivation evidently was not important enough to attract papal interest, for it seems that restoration only began after water did in fact cease to flow into the Trevi in 1559.<sup>80</sup>

Pius IV authorized funding for the restoration of the ancient conduit to its original spring on 3 June 1561.<sup>81</sup> The project naturally received full support from the Conservators, but as the restoration advanced, disagreements emerged be-

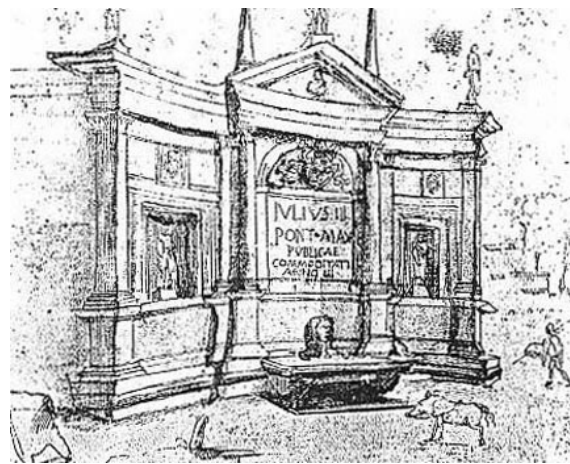


FIG. 8. Fountain at the entry to the Villa Giulia, ca 1555.

tween the civic magistrates and the clerical authorities.<sup>82</sup> The Pope and the commission of cardinals appointed to supervise the water system often overruled the Conservators in the process of expanding the aqueduct network, despite the accumulated knowledge and experience of the civic magistrates.<sup>83</sup>

However, the reliance of the Conservators upon papal largesse meant their bargaining power was limited, as revealed by their discussion of a malaria epidemic in 1567 caused by stagnant water leaking from the Acqua Vergine. First the Conservators declared, since the care and conservation of public works was their fundamental duty, that a permanent custodian should be appointed to the Trevi to prevent any such future disasters. Then they observed that the salary of the custodian would be disbursed by the general treasurer of the *Camera apostolica*, as all such officials were paid.<sup>84</sup> Clearly, despite their vocal defense of public utilities, the Conservators needed papal revenues to maintain these systems, let alone conduct any major renovations.

77. "Hora la maggior parte dell'Acquedotto Vecchio è guasto, e si toglie hoggi presso al ponte Salario da un fonte, che è nel monte, che chiamano hoggi volgarmente di Zoie. Questa sola acqua delle tante, che anticamente venivano in Roma, vi viene hoggi, e come ho detto, assai scarsa e poca." Lucio Fauno, *Delle antichità della città di Roma* (Venice: 1548), 128r.

78. "Anchora nella fonte di Treio per essere in alcuni lochi repieno il condotto di ruine et altri impedimenti, et similmente che per il tempo si sonno indebolite et rotte le mura di esso, et per li patroni delli poderi donde curre dell'acqua se ne deriva generalmente tanta acqua che alla fine per dette caggioni perviene talmente esausto che in poco tempo non si provvede à niente si raddurrà. Donde siamo di parere che vi si faccia una buona provvisione, acciò che per l'honore dell'uffitio nostro le cose publiche di questa città mantenghino et conservino con ogni miglior modo che si poté." ASC, Cred. I, vol. 36, 695.

79. For the Villa Giulia's appropriation of water from the Acqua Vergine see D'Onofrio, *Le fontane di Roma*, 169ff.

80. Lanciani, *Le acque e gli acquedotti di Roma antica*, 341.

81. The restoration inaugurated by Pius IV was recorded by Luca Peto, *De restitutione ductus Aquae Virginis* (Rome: 1570). See also Giovanni Beltrani, *Leonardo Bufalini e la sua pianta topografica di Roma* (Florence: 1880), 36-40, D'Onofrio, *Le fontane di Roma*, 61.

82. The maintenance of the Acqua Vergine was still officially the responsibility of the Capitoline administration, but the *Camera apostolica* intervened in the repairs, appointing a group of cardinals to supervise and rule upon the development of the water system. For the ensuing conflict between the Capitoline and the ecclesiastics, see D'Onofrio, *Le fontane di Roma*, 60-188. The operation of the system demonstrated the ambiguous limits of respective

jurisdictions characteristic in Rome; see Laurie Nussdorfer, *Civic Politics in the Rome of Urban VIII* (Princeton: 1992), 45ff.

83. Pius IV awarded the contract for repairing the aqueduct to Antonio Treviso, against the better judgment of the Conservators; see D'Onofrio, *Le fontane di Roma*, 62.

84. "Noi...al presente Conservatori della camera dell'alma città di Roma conoscendo con quanta spesa et industria i nostri antichi et maggiori hanno sempre havuto cura delle cose publiche in questa inclita città, havendo sempre la mira con simile et quasi maggior diligenza di conservar...per l'autorità del nostro offitio et con ogni altro miglio modo che possiamo Voi messer Cencio Bellincini sopradetto a vita deputiamo facciamo, constituiamo, et creamo custode di detta cloaca, fosso, et acqua [l'acqua Vergine di Treio]...et acciò voi habbiate premio delle vostre fatighe vi costituiamo, assegnamo, stipendio, salario, emolumento, honori, et pesi da dichiararsi da N. S. dal depositario generale della Camera apostolica dove li altri commisarii et custodi di Treio sono pagati." ASC, cred. I, vol. I, 96. The ancient precedent for such a staff responsible for caring for public structures was well-known by the sixteenth century; Lucio Fauno described the ancient positions of the *Edili* or *Censori*, appointed to protect and maintain the aqueducts, in his guidebook of 1548. See Fauno, *Delle antichità della città di Roma*, 128 recto.

suming the time-honored role of the civic magistrates as the official advocate of the Roman aqueducts.

### Pirro Ligorio's study of the Acqua Vergine conduit, 1550-1565

The writings of the antiquarian Pirro Ligorio offer a useful source for the study of ancient Roman remains and their afterlife in the Renaissance.<sup>88</sup> Ligorio examined the history and construction of the Acqua Vergine in detail in the sixteenth volume of his encyclopedic dictionary, the *Libri delle antichità*, composed between 1550 and 1565.<sup>89</sup> In this volume, Ligorio described the different building construction techniques that marked the Acqua Vergine as it emerged from the source and traveled through underground conduits and across arcades in its path toward Rome.<sup>90</sup>

Ligorio's careful archeological analysis permitted him to evaluate and criticize the quality of the aqueduct's construction techniques. In particular, the sections of the aqueduct exposed above ground attracted his attention. Although the channel itself was of solid construction, he observed that the supporting arcaded structure was *molto debilmente fabricata*, or very poorly built. He further investigated these architectural weaknesses in a series of drawings, where he reconstructed its restoration history.

88. Recent scholarship has fundamentally reassessed Ligorio's tarnished reputation as an unprincipled forger of antiquities; see the collected essays in Robert Gaston, ed. *Pirro Ligorio, Artist and Antiquarian*, (Florence: 1988), as well as Robert Gaston, "Merely Antiquarian: Pirro Ligorio and the Critical Tradition of Antiquarian Scholarship," in *The Italian Renaissance in the Twentieth Century*, ed. Allen Grieco et al. (Florence: 2003), 355-74. See also David Coffin, *Pirro Ligorio: the Renaissance artist, architect, and antiquarian* (University Park, 2004).

89. Ligorio's alphabetical dictionary of antiquities, dedicated to Duke Alfonso II d'Este but never published, dates from 1550 through 1558; the last inscriptions were added in 1565. The original (incomplete) manuscript is preserved at the Biblioteca Nazionale di Napoli; eighteen of the original twenty-three "libri" are at the Archivio di Stato di Torino. Fourteen of these volumes were copied for Christina of Sweden and are now in the Vatican Library (BAV Ottob. lat. 3364-3377). See Thomas Ashby, "The Bodleian Manuscript of Pirro Ligorio," *Journal of Roman Studies* (1919): 171. Ligorio addresses various constructions pertaining to water, including the Acqua Vergine, under the entry "Piscina," in volume 16, *Libro XVI dell'antichità di Pirro Ligorio Patrio Neapolitano et cittadino Romano, nel quale si tratta delli luoghi, et città, vichi, castelli, et ville, et d'altre cose illustri*. The corresponding volume at the Vatican is BAV Ottob. lat. 3373, 6v-17v.

90. The passage illustrates Ligorio's archeological approach and is thus worth citing in full: "Il principio del suo letto, finché durava la dura materia nativa, era incrostato l'acquedotto di calcestruzzo, et ivi a poco era di opera signina fabricata, cioè di materia di selici (probably referring to the rubble aggregate mixed into the *opus signinum* or hydraulic concrete used to line ancient aqueduct channels), sinché il rivo era a guisa di poco muro sopra terra; poscia entrato nella parte sotteranea, era di laterioli murato, et d'opera reticolata, et nelli fondi troppo acquosi, et mal sicuri, era il letto fodrato di tegoloni di piombo (this unusual lining was questioned by Ashby; see Ashby, *The Aqueducts of Ancient Rome*, 177); uscendo di sotto terra parte per opera di



FIG. 9. Pirro Ligorio, reconstruction of the original Acqua Vergine conduit.

By the time the Acqua Vergine conduit was completely restored to Salone in 1570, the authority of the civic magistrates over the aqueduct was swiftly evaporating.<sup>85</sup> Already in 1567 Pius V had created the new institution of the *Congregazione cardinalizia* to transfer the administration of the Acqua Vergine to ecclesiastical hands. Finally, in 1597, a clerical administration headed by a *soprintendente dell'Acqua Vergine* took over its operation.<sup>86</sup> The ancient privileges of the civic magistrates were annulled, and the Acqua Vergine was incorporated into the expanding papal water-supply network.<sup>87</sup> Yet if the *Congregazione* provided more efficient and centralized control over the city's water supply, it also inherited a long-established tradition, as-

85. Peto, *De restitutione ductus Aquae Virginis*, A5.  
86. Marconcini, "La magistratura delle acque e sua evoluzione dal XIV secolo al 1860," 260. The continued participation of the Capitoline administration is attested in the expansion of the system into the Campus Martius in 1570; see D'Onofrio, *Le fontane di Roma*, 99.  
87. The Acqua Felice was restored by Sixtus V in 1587, and the Acqua Paola by Paul V in 1612; the administration of these three aqueducts was in turn consolidated in 1742 under the Presidenza degli Acquedotti.

Ligorio's first drawing showed thirteen brick arches spanning a valley, near Portonaccio, at Maranella, where the Acqua Vergine turned away from its westbound course to travel north around the city (Fig. 9).<sup>91</sup> After a digression regarding the Arch of Claudius in the Campus Martius, Ligorio described the fragile condition of the ancient conduit, noting that the ancient Romans, in a misguided effort to stabilize the arcades, had filled them in with *opus reticulatum*. He concluded with the admonition that the history of this structure should persuade modern builders to build strong and durable works rather than fragile ones.<sup>92</sup>

Ligorio accompanied this discussion with two drawings of the restored aqueduct (Fig. 10). These drawings depicted the two phases of the restoration conducted by the ancient Romans. In the upper drawing, Ligorio how showed *opus reticulatum* was installed to shore up the supporting arches. Then, in the lower drawing, he showed the new buttresses built as a later restoration, adjoining the original brick piers in the attempt to reinforce the structure. In his commentary he noted the new buttresses were not integrated into the original piers, and thus allowed shrubs to take root in the gaps and causing even greater damage.<sup>93</sup>

Ligorio's analysis is extremely valuable as an early effort to distinguish between different phases in a building's history. He demonstrated a new archeological awareness of historical change and the impact of restoration interventions upon an existing structure. The Renaissance sensitivity to different building phases had been first clearly articulated in the Letter to Leo X, where Raphael judged the quality of the different components making up the Arch of Constantine.<sup>94</sup> However, where Raphael's judgments were based upon style, Ligorio's judgments were based on function. By differentiating between the individual interventions, Ligorio observed that badly-conceived restorations could have a deleterious effect. While the

muro si scopre, et di poi di novo sotto terra entra per un'altro spazio, con varii acquisiti. Il suo rivo cresce, et uscendo di nuovo di sotto terra nel principio per luogo tutto murato, ne va a trovare un'opera arcuata, parte laterizia, et parte reticulata. Passa in questa sorte di costruzione, qual vi mostro in questa prima forma disegnata con la parte più alta fatta di reticoli di tufo, con li fianchi di tre palmi grossi molto debilmente fabricata circa i muri, ma vi era il calcestruzzo grosso di quattro oncie molto bene battuto, et condensato, et palmentato, et li reticoli sono di questa fatta tagliati, et ben commessi in calce." BAV Ottob. lat. 3373, 13v-14r.

91. Van Deman, *The Building of the Roman Aqueducts*, 171. As noted earlier, Agrippan aqueducts commonly featured concrete construction; these brick arcades thus probably represented a later restoration; *ibid.*, 10.

92. "...prima per la debolezza, che havea, gli furono chiusi gl'archi più di sopra mostrati, con opera reticolata, come e qui di sotto disegnato; il che insegna a tutti coloro, che fabricare volessero, non debbano fare opere deboli, perché sono caduche, et usara col tempo alla posterità, et in questa guisa fu la prima ristaurazione." BAV Ottob. lat. 3373, 14v.

93. *Ibid.*: "La seconda volta non vi bastando, la chiuserò dell'archi, vi

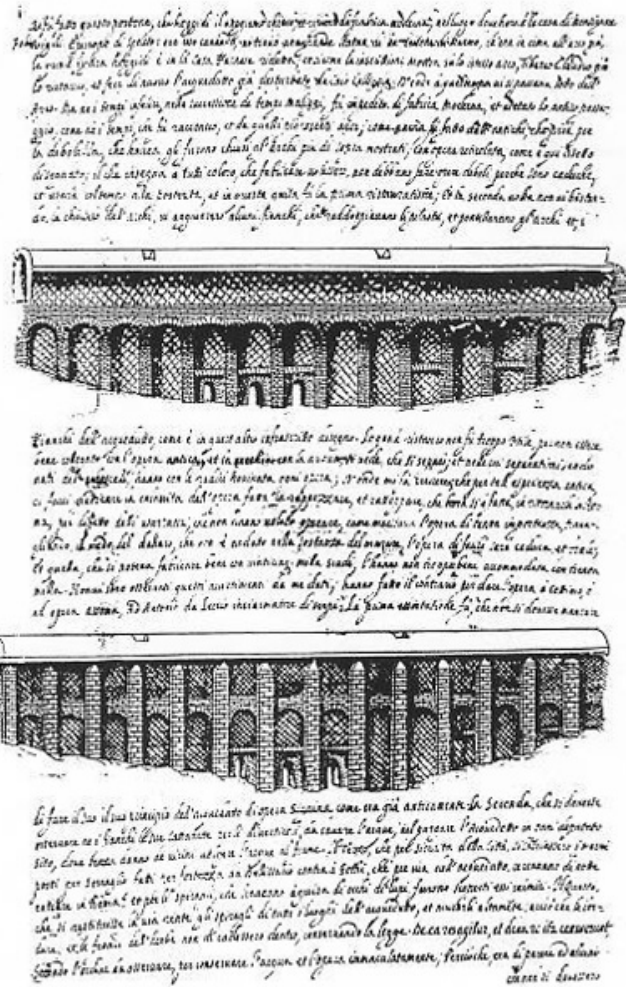


FIG. 10. Pirro Ligorio, successive restorations of the Acqua Vergine conduit.

first restoration of the arcades had failed to accomplish its purpose, the second restoration imperiled the structural integrity of the entire aqueduct. Ligorio's investigation revealed such close archeological examination offered essential guidance in conceiving and conducting repairs to historic structures.

### The Arch of Claudius on the Via Lata

As noted above, Ligorio also discussed the Arch of Claudius in the *Libri dell'antichità*. His commentary regarding the sixteenth-century fate of this structure evokes the problems of monitoring archeological remains in sixteenth-century

aggiunserò alcuni fianchi, che raddoppiavano li pilastri, et pontellavano gl'archi e i fianchi dell'acquedotto, come e in quest'altro infrascritto disegno. Lo quale ristauo non fu troppo utile, per non esser bene collegato con l'opera antica, et la vecchia con la nuova, si vede, che si separò, et nelle cui separationi essendo nati dell'arboscelli, hanno con le radici rovinata ogni opera."

94. As observed by Arnold Nesselrath, "Raphael's archaeological method," in *Raffaello a Roma* (Rome: 1983), 365.

Rome.<sup>95</sup> Although the Arch of Claudius was demolished in late antiquity, substantial remains survived into the Renaissance.<sup>96</sup> Ligorio provided a reconstruction showing a richly decorated structure, with a high attic storey carrying a dedicatory inscription and the conduit behind (Fig. 3). In his commentary, he lamented that recently many of the surviving fragments had been excavated and sold for reuse; apparently here Ligorio was speaking from bitter personal experience.<sup>97</sup> Pius IV had evidently appointed him with the official responsibility of protecting the ancient remains; perhaps he may have served as a papal Commissioner of Antiquities.<sup>98</sup> However, in this case he was unable to enforce any protective restrictions, as both he and his associates apparently received death threats if they made any attempt to stop the illegal excavation and sale of archeological remains.<sup>99</sup>

Ligorio's melodramatic brush with the underworld commerce in ancient remains underlines the fact that the illicit antiquities market had firmly taken root in sixteenth-century Rome. His discussion reveals with unusual clarity the daunting

challenges confronting those who sought to impose protective measures. The concern for preserving archeological remains was limited to a small number of antiquarians, and this fact, compounded by the value of ancient remains on the international market, made protection exceedingly difficult. Thus Ligorio painted a gloomy picture for sixteenth-century conservation efforts. Even when papal policy overtly favored the protection of the enormous archeological patrimony of Rome, many fragments, such as the Arch of Claudius, still vanished in the burgeoning antiquarian trade.

## Conclusion

Although the themes of spoliation and destruction dominate the history of ancient monuments in post-classical Rome, the history of the Acqua Vergine reminds us that some ancient structures not only survived, but were even actively restored during the Renaissance. Between 1453 and 1570, the derelict aqueduct channel experienced an extraordinary transformation, recreated as a modern water system to rival its condition in antiquity. Obviously, those ancient structures which provided vital services received first priority; while the part of the conduit remaining in use was the focus of numerous protective interventions, the abandoned section, including the Arch of Claudius, would almost entirely vanish by the end of the sixteenth century.

Perhaps the most remarkable aspect of the Acqua Vergine's Renaissance history is the manner in which the care of the ancient monuments could be negotiated in this tumultuous time of demolition and change. As the foregoing argument has sought to demonstrate, important archeological remains survived through the combined efforts of both papal and civic institutions. These two powers were often rivals with very different political agendas and strategies, yet their competitive relationship actually contributed in a vital way to the preservation of the ancient past. Such patterns become apparent in the history of the Acqua Vergine, where the joint interventions of the Popes and the civic magistrates ensured that the water of ancient Rome's one surviving aqueduct continued to flow.

95. BAV Ottob. lat. 3373, 16r-17r. For the Arcus Claudii see note 14.

96. In 1594 Flaminio Vacca recorded that excavations under Pius IV near the present Via di Caravita recovered many Claudian reliefs; he also noted that a sculptured relief from the front of the arch still stood at the site until it had been recently moved to the Capitoline. See Flaminio Vacca, "Memorie di varie antichità trovate in diversi luoghi della città di Roma," in *Miscellanea filologica critica e antiquaria* (Rome: 1594; repr. 1790), 67-68, n. 28.

97. "...per la maladetta invidia, et ira di coloro, che dissolarono Roma, et Italia, essa opera [the Arch of Claudius] a di nostri l'havemo veduta in un monte di rovina sottoterra, et cavata, et vendute le sue reliquie alle genti, che ne hanno fatto altri lavori." BAV Ottob. lat. 3373, 16r.

98. Ibid.: "È restato da noi di fare ufficio, che le cose non fossero guaste, come ricercava il suo privilegio di conservarle a noi dato dal Santissimo Pio Quarto Pontefice Maximo, appresso di cui servendo..." No official record of Ligorio's duties as Commissioner seem to have survived; for the history of the position, see Ronald Ridley, "To protect the monuments: the papal antiquarian 1534-1870," *Xenia antiqua* 1 (1992): 117-54.

99. "...nondimeno mi fu accennato sottovoce da uno, che faceva il bravo, di uccidere chiunque ne facesse querela. Laonde io ho veduto Thomaso Spica, Pietro Tedelino et Mario Frangipanio atterirsi, essendo con me disputati. Le cose furono vendute..." BAV Ottob. Lat. 3373, 16r.