

Supplying water to Famagusta: New Evidence from the Venetian Period

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Two foreign travellers, who passed through Famagusta in the 1560s on their way to the Holy Land, were struck by the abundance of water in the eastern port town. Elijah of Pesaro, the Jewish traveller who most likely settled in the town, remarked in his letter of 1565 that at every streetcorner in Famagusta one could find fountains of running water. One year later, the German traveller Christoph Furer of Haimendorf noted in his travel diary that the water consumed daily in Famagusta was provided by wells operated by the combined use of oxen and wheels. A similar description is provided by Etienne de Lusignan, who wrote shortly after the conquest of Cyprus by the Ottomans. We shall shortly see that these testimonies partly reflect a situation resulting from a project carried out during the later phases of Venetian domination.

During the first decades of Venetian rule in Cyprus, the detailed reports and despatches which were so often written by the Venetian governors of the island hardly include any references to problems of water supply. One may assume, by *argumentum ex silentio*, and also by comparing the scanty attention given to this subject with other issues, such as food supply or defence problems, that water was not a major problem in Cyprus during those days. It is probably not by chance that the material presented here belongs to the later phases of Venetian rule, when the population growth in all sectors of Cypriot society, including the urban population of Famagusta, created new needs in this field as well.

A report sent to the Venetian Senate on 25 August 1560 by Domenico Trevisan, the Venetian Captain of Famagusta, includes the results of a systematic survey of all the water sources in Famagusta carried out according to the Signatory's orders. Thus we learn that at the time the town had 107 public wells of sweet water of good quality, and 70 additional wells which were of private property. Furthermore, there were 124 wells whose water is described as mediocre, and no less than 620 producing salty water. In addition, there were 127 cisterns in private houses and 22 ruined and empty ones. At first glance, these numbers may seem quite impressive, considering that the town's population hardly reached 10,000 inhabitants at that time. But even Trevisan noted in the same dispatch that the real situation could only be established after a more thorough investigation of each well, which had to be emptied in order to check how quickly it refilled.

In fact the situation in Famagusta's wells and cisterns might not have been so rosy. At least one earlier report, to which we shall shortly return, claims that most of the water in Famagusta was of poor quality. A young Venetian patrician, who stayed on Cyprus in the late 1550s noted that the water in the wells situated near the seashore was salty, a remark which corroborates the

great number of salty wells mentioned in Trevisan's report. It is therefore understandable that several Venetian governors would attempt to improve the water system of Famagusta, probably implementing experience accumulated elsewhere. In fact, recent research has shown that considerable attention was paid by Venetian magistrates to problems of water supply, including public wells and fountains, in various other colonies of Venice's overseas empire during the early modern period.

As a matter of fact, by the time Domenico Trevisan had carried out his survey of wells and cisterns in Famagusta, the inhabitants of Famagusta also enjoyed abundant supply of running water, provided by several public fountains which were located in different parts of the town. This situation was the final result of the efforts invested by the Venetian authorities to ensure an adequate supply of running water to the eastern port town.

The first attempt to provide Famagusta with running water originating from outside the town seems to be the initiative of the Venetian Captain Zuan Matteo Bembo, who served as governor of Famagusta during the years 1547 – 48. Leonardo Dona, who as a young Venetian patrician stayed on Cyprus some ten years later in the company of his father, wrote in his Cypriot notebook that Bembo intended to build a conduit supplying water from "the well of St. Constantine", which apparently was situated at a somewhat higher level than the town. According to Dona, great efforts were invested in this project. Yet, in spite of attempts to increase the water flow by digging more wells and probably even by using explosives, the quantity of water finally proved disappointing and the conduit was not continued beyond the distance of "two shots of arquebus".

A much more successful project is connected with the initiative of another Venetian governor, Piero Navagero, who served as Captain of Famagusta in the years 1557 – 59. Our main information about this project comes from a long and detailed report sent by Navagero to the Venetian Senate on 3 January 1558. Probably in order to stress the importance of his own contribution, the governor described the previous situation of Famagusta's water supply system in rather gloomy colours. According to this report, Famagusta was lacking good water, except for one well, which was also not perfect, and a few cisterns containing rain – water which could hardly be used, since drinking the water caused sickness and mortality. This problem was solved by his organisation of a water supply system, providing water from the well of St. George, located, according to the report, in a garden in the vicinity of Famagusta at a distance of some 600 Venetian passa (about one km) to the south. According to Navagero, St. George's well supplied great quantities of perfectly healthy water.

Navagero's report also includes technical details about the execution of the project. To begin with, the water was raised from the well into several pools (alcune conserve) situated at an appropriate level which enabled its smooth descent. This was done by means of an Alakati, or Persian wheel. Consequently an underground conduit (most probably made of clay sections) was installed, to connect the well with the city, passing underneath the moat.

In the middle of Famagusta's main square of piazza, a beautiful fountain was built of fine marble "for the town's ornamentation and for the comfort of all" (per ornamento della citta et commodita de tutti). Moreover, since water was abundant, other conduits were installed, bringing water to two other locations in town: one near the church of St. George and another between the sea gate and the castle, to serve the inhabitants of the castle and the ship crews.

The cost of the project amounted to about 800 ducats, which were raised from the impost originally levied for the campaign against the locust plague. Since the locust problem, which had infested Cyprus for so long, seemed to abate during those years, the money could be used for other purposes.

In order to ensure regular supply of water to the fountains, a contract was signed with a certain Domenego de Zorzi, called "the gardener" (giardinaro), in whose garden the well was situated. For the payment of 60 ducats a year, paid in four instalments, Domenego de Zorzi undertook that he and his successors raise the water (using animals for this purpose), and supply sufficient quantities to the town fountains between the first hour before daybreak and the second hour at night. The money destined for these payments derived from the income from judicial fines. This was done, writes Navagero, to the joy and satisfaction of everybody.

A few other contemporary descriptions may help us to understand how his system looked and functioned. Leonardo Dona who stayed in Cyprus with his father when the conduit was being constructed writes that in order to create a sufficient declivity the water was raised from the well "in jars mounted in the Cypriot mode on a wheel" (con zare al modo di Cipro sopra una ruota) before being carried by water conduits into town. As a matter of fact Alakatia a few examples of which could still be observed in our century in several places on Cyprus had also been used during the Genoese occupation of Famagusta to draw water from wells (situated within the town walls) by applying horsepower. For the Venetian period we are lucky enough to have an illustration of a Cypriot Alakati, accompanying a description of this mechanism by a Venetian traveller, who happened to pass through Cyprus about the period in which Navager's project was being carried out. A rather detailed description of St. George's well belongs to the Venetian Captain Domenico Trevisan, and is included in the same letter of August 1560, in which he reported about his survey of Famagusta's wells and cisterns: "the place where this water comes from looks like a vault, situated at a distance of 192 passa (about 13.8 m.) from the bottom of the water up to ground level it is 8 passa and one piede high (c. 14.2 m.), all in the rock, from the top to the bottom". According to the same description, one could see the water flowing strongly out of cracks in the rock on the south – western side of the well.

The water supply from a source situated outside the town walls had, of course, one big disadvantage. In case of a siege, the enemy could easily disconnect the water flow. In his comprehensive report presented in Venice in 1561, the same Domenico Trevisan mentioned projects which envisaged the inclusion of the well of St. George within the town's fortifications. But after carrying out the above-mentioned survey, and later also a test of the quality

and quantity of the water in all the wells in town, he came to the conclusion that such projects were superfluous, since Famagusta had sufficient quantities of good water within the town itself. Moreover, additional wells containing good water were discovered during the construction of a new bastion (probably the Martinengo bastion). In a zone where private houses had been situated. In conclusion, Trevisan expressed his estimation that there was sufficient water in the town itself even in the event of a siege. Yet, according to another source, the great success of Navagero's project seems to have had another disadvantage: since there was such an abundance of running water in the public fountains, the wells inside the town tended to be neglected. This was the opinion of the Captain Lorenzo Bembo, expressed in his report of 1567.

The ability of Famagusta to withstand a long siege was put to the test shortly afterwards. The well of St. George became one of the foci of the bloody struggle right from the start; the Ottoman army made use of the wells situated to the south of Famagusta and even built a fort around St. George's well. Before long the inhabitants of Famagusta suffered from water shortage. The calculations of Captain Domenico Trevisan had apparently been too optimistic. But the efforts invested by the Venetian government and by its representatives in Famagusta reflect a genuine concern to ensure an adequate supply of good water to the eastern port town and its inhabitants.

It would, of course, be interesting to find traces of the Venetian water supply system in nowadays Famagusta. Considering the present political circumstances, a serious attempt to carry out such an archaeological examination is rather difficult. Nevertheless, a few tentative observations would probably not be out of place at this stage. The sources of the Venetian period locate St. George's well to the south of Famagusta – according to Navagero, at a distance of some 600 passa (about one km) and according to Trevisan, 192 passa (about 333 meters). The discrepancy between the two reports complicates the attempt to locate the well. At any rate, in the area which lies roughly at the distance indicated by both governors to the south of the town walls there are still today several operative water wells. A construction situated in the same area and worthy of further examination even seems to resemble the reservoirs constructed by the Venetians to enable a smooth descent of the water into Famagusta. It should also be indicated that whereas the moat around the town wall is generally cut into the hard rock, that section of the moat which lies between the area of the water wells to the south-west and the town wall seems to day to be less rocky and therefore more suitable for the installation of underground water conduits. Finally, one may put forward some preliminary suggestions concerning the location and identification of the above mentioned fountains. According to our sources, the most important one, and supposedly the prettiest, was situated in the piazza, i.e. in front of the palace of the Venetian governors, facing St. Nicholas' cathedral. Two old fountains, both of which unoperative today, can still be observed at two different corners of the same square, one of which bearing an Ottoman inscription. Could we identify one of them as the central fountain that had provided Famagusta with water from St. George's well during the last decade of Venetian rule? If so, it would also be interesting to know if and

under what circumstances did the Ottomans restore the water system constructed by the Venetians.