

## Just Add Water

### Domestic Water Reserves and Water-Storage Ceramics

Water-storage ceramics were an important component of Guadeloupe's ceramic culture, and procuring a good supply of water was a critical domestic issue in the early modern period. In Daniel Roche's (1984) words, this was "le temps de l'eau rare" (the time of scarce water). The difference between that time and today is striking, as now we need only to turn on the tap to get an unlimited, clean, and safe supply of water. Yet some similarities also exist. First, in many developed countries, the public is losing confidence in the quality of their water supply, just as people did in early modern societies. Our distribution systems are aging and in need of expensive upgrades. New kinds of contaminants have appeared and are raising concerns about the adequacy of our purification techniques. In response, many households have reverted to buying home water filters or carting bottled water home from the supermarket. So, now as then, steps are taken at the household level to improve the quality and taste of water. Meanwhile in developing countries, millions of people lack access to clean water, and traditional methods of collecting and storing water may still be relevant.

Naturally, people's views on water have evolved. There was no concept of waterborne diseases before the second half of the nineteenth century. For instance, yellow fever and cholera were not linked to fecal contamination in water until after 1850, and the microbes responsible for these infections were identified only in the 1880s (Hamlin 2000: 52). Yet there had long been a tradition of assessing the quality of water based on sensory judgments and assumptions about its health effects (Goubert 1989; Hamlin 2000). In Western societies, rainwater was generally the best on the water-quality scale. Water from mountain streams was favored over water from

streams in hot plains or well water, and running water was always preferable to stagnant.

Early modern European towns showed very limited “hydraulic consciousness” (Hamlin 2000). Their water management strategy often involved little more than providing access points throughout the city. In Paris, for example, water was secured via the Seine River, public fountains, and some wells. But directly piping water into individual homes had not been on Parisians’ minds since Roman times (Coleman 2001). Water quality was poor and people were aware of that fact, so treating water at home was a common practice. Worldwide, known purifying techniques ranged from removing impurities through sedimentation to decanting the water, adding purifiers (like wine or vinegar) and coagulants, or boiling the water before use (Hamlin 2000).

Carefully managing one’s home water supply was therefore crucial, and this was probably particularly true in the tropical environment of Guadeloupe. How did people obtain their supply there? Assessing Basse-Terre’s water sources and distribution system will help answer this question. Then, analysis of the water-storage ceramics listed in the probate inventories and found at the archaeological sites will show exactly how Guadeloupeans dealt with their domestic reserve.

## Sources of Water in Basse-Terre

For more than a century before the French colonized Guadeloupe, European ships had been visiting the future site of Basse-Terre. Its advantages and drawbacks as a place for settlement were well known. Its roadstead had waters deep enough for ships to anchor close to the coast, though it did not adequately protect them from bad weather. High grounds near the coast and at one end of the site could be used to build a fort, according to the recommendations of the *Compagnie des Isles d’Amérique* for new settlements (Desmoulins 2006: 40; Pérotin-Dumon 2000: 97). Above all, Basse-Terre had excellent sources of freshwater, thanks to the three permanent rivers and several seasonal creeks that flowed down to the sea—waters running downhill from mountains were in general thought to be very healthy (Hamlin 2000). The last feature was rather rare in the French Antilles. When building new settlements the French usually preferred locations with good harbors, even when these places were not well suited for human habitation. For example, the towns of Fort Royal, Martinique, and

Pointe-à-Pitre, Guadeloupe, were built in swamplands characterized by relentless heat, swarms of mosquitoes, and dire lack of freshwater (Boucher 2008: 20, 271).

In Basse-Terre, the declivity of the terrain also made it possible to build a rudimentary but efficient water distribution system. Water was diverted from the rivers upstream of town and brought down in canals using gravity and low pressure. Religious communities, who were among the earliest landowners in the city, created the first water catchments (Desmoulins 2006: 73). The Jesuits, the Carmelites, and the Brothers of Charity managed to extract water from the Ravine de l'Espérance, and the Capuchins drew from the Rivière aux Herbes (figure 1.2). In Baillif, a town west of Basse-Terre, Father Jean-Baptiste Labéat also built a 2,800 m canal to irrigate the sugar plantation of the Dominican brothers (Desmoulins 2006: 74).

Most canals in this water distribution system were simple unlined earthen ditches, though a small number were built in masonry (Desmoulins 2006: 74). A few reservoirs helped clean the water and regulate its flow. The system also used connecting pipes, which were initially made of lead but after 1850 were of cast iron. Both canals and reservoirs were usually uncovered, and small wooden bridges provided crossings over the numerous little streams that transected the city (Pérotin-Dumon 2000: 371).

As Basse-Terre grew, new connections were simply added to the original network. Though an easy way to develop a distribution system, this process came with obvious pitfalls. Every water distribution point in the city tapped the same few river sources, and the supply available at any one point was contingent on the condition of the upstream network.

Cisterns and wells were rare in Basse-Terre, especially before the nineteenth century. In her survey of the city's notarial archives, Marie-Emmanuelle Desmoulins (2006: 205) found only a single mention of a well, dating from 1822. Anne Pérotin-Dumon (2000: 429) cited the presence of a well in the courtyard of a merchant's house in the newest part of Saint-François at the end of the eighteenth century. The military had cisterns both at Fort Delgrès and at their infantry barracks by the mid-eighteenth century, but very few private houses had similar setups. Desmoulins identified only one private cistern, near the Champ d'Arbaud and dating from 1855. In the 1820s, a visitor named Longin (pennname for Le Manceau Félix Langin) also recalled drinking water from a cistern in a house near the center of town (cited in Pérotin-Dumon 2000: 761).

The first public fountain in Basse-Terre was erected in Saint-François, the

wealthiest neighborhood, in 1749. By the end of the 1780s, four more fountains had been installed (Pérotin-Dumon 2000: 373). One of them was a fountain at the shore, designed by a city planner named Mallet around 1788. It was accessible not only to individuals but also to ships' crews that needed to replenish their water supply. Other neighborhoods of Basse-Terre, even old ones like Carmel, were not as well equipped as Saint-François (Desmoulin 2006: 77).

Mallet was also commissioned to inspect the entire city's water supply network and presented his findings in a detailed 1788 report.<sup>1</sup> Mallet stressed the need for public water access outside of Saint-François, including in the neighborhood where 28 Rue Amédée Fingarol is located. He proposed that a fountain be built at the entrance to the former military hospital across the street from that site, but this project was not completed until much later, sometime after 1825. In 1842, a Basse-Terre inhabitant sought to install a fountain in a nearby street called Rue Saint-Ignace, because there were still no sources of potable water in the area. Many Basse-Terrians who lived outside of Saint-François did not have convenient access to water until late in the nineteenth century.

Visitors, though, were impressed by the sheer quantity of fountains. Some recorded their impressions, praising Basse-Terre's freshwater sources and describing how they cooled the city and made its tropical climate more bearable. For instance, Paul Erdman Isert, a German doctor, painted this picturesque portrait of the city in 1787: "One sees here and there gushing fountains that distribute fresh and crystal clear water. There are many gardens inside and outside the city that are nearly all watered with running water and that provide local people with the most delicious vegetables" (Isert 1972: 318; translation mine).

In the nearby uplands another traveler, Baron de Montlezun (1818: II. 45), found the air fresh and the waters limpid and delicious. In the 1820s, Longin admired two pyramidal fountains downtown that yielded "a very beautiful water." He also noted that this water was good for "drinking, domestic use, and cooking" (cited in Desmoulin 2006: 77). Eugène Édouard Boyer-Peyreleau (1823:1.180) lauded the quality of Basse-Terre's waters and the numerous public and private fountains he saw. He stated that many of the houses he visited had running water. Another visitor, Joseph Leggins, commented in 1830 on the many "plain" but "neat" fountains of the city (cited in Pérotin-Dumon 2000: 371). He noted that these fountains contained water that was "conveyed through pipes" from an "inexhaustible" source streaming down from the neighboring hills.

Idyllic descriptions of Basse-Terre's fountains and waters represent a trope in the travel literature of the Antilles. In most of these accounts, Basse-Terre was also sharply contrasted with Pointe-à-Pitre, which was deemed favorable for trade but very unhealthy. The Baron de Montlezun (1818: II.76), for instance, deplored the latter's unhealthy climate, unbearable heat, scarcity of shade and breeze, and lack of clean water.

The visitors' descriptions were perhaps overly idyllic. In Basse-Terre canals and gullies tended to foster chronic epidemics of malaria (Pérotin-Dumon 2000: 318). The canals leaked water into stagnant puddles that supported mosquito breeding. As explained later, the water that spouted out of Basse-Terre's fountains was also often very polluted, and it caused regular typhoid fever and cholera outbreaks. Yet eighteenth-century doctors and early nineteenth-century hygienists believed fresh air was the most important prophylactic element against all diseases. Thus, Basse-Terre's cooling sea breeze created the illusion that it was the healthiest place to live in Guadeloupe (Jennings 2002: 239). This belief persisted even despite evidence to the contrary. In 1823, for example, Boyer-Peyreleau noted that the death rate of soldiers was higher in Basse-Terre than in Pointe-à-Pitre (cited in Pérotin-Dumon 2000: 318). He surmised the difference was due to the fact that Basse-Terre attracted many more newcomers, who were naturally more susceptible to tropical diseases, rather than to Basse-Terre's environment or water supply.

The 1788 Mallet report laid out some systematic and recurrent problems with Basse-Terre's water system. First, the canal system was very unequally distributed. As in other early modern cities, priority was given to administrative buildings, religious communities, and military installations (Desmoulins 2006; Pérotin-Dumon 2000). The elite could enjoy fountains in their courtyards and even indoor running water while everybody else had to fetch their supplies.

The correlation between direct water access and wealth or status was a common feature of early modern urban life. It was the case in colonial cities like Santiago, Chile, as well as in major European cities like Paris and London (Roche 1984; Webre 1990). In general, public fountains received their water last, after administrative buildings, elite households, military installations, and religious communities. Stephen Webre (1990: 74) estimated that as little as 4 percent of Santiago's population received 62 percent of the water supply at the end of the seventeenth century. Daniel Roche (1984: 389) noted the same glaring inequalities in Paris: religious communities, important ad-