

Waters/Cultures

There were a few pages about Peñón de los Baños on the internet, and my guidebook also briefly mentioned it. I had thought it would be more important, considering the presence of Peñón in the historical documents I was collecting in the archives downtown. Real hot springs in the middle of Mexico City—nature was difficult to locate amidst the densest of urban conglomerations. And because the shower seemed to have displaced the bathtub in my rented apartment, I was in dire need of a good soak. The bathhouse was located on Circuito Interior, the city's main circumferential artery, on a hill next to the airport, and occupied the lower floor of a nondescript U-shaped brick and concrete apartment building. In the courtyard garden of the building, however, a seventeenth-century chapel gave mute testimony to the powerful spiritual connections with these waters that once bubbled up from the earth on their own when this extinct volcanic hill was still an island in the lake that covered the Valley of Mexico.

As I looked around the place, I strained for glimpses of the uses, meanings, and practices sedimented in this site over time. In the foyer of the building a man peddling a spiritual cure invited me for a free diagnostic; there were flyers posted for energy alignment and a “course on miracles,” as well as more common therapeutic treatments such as massage. Sitting in the drab hallway with a number of elderly patients and their attendants, I drank a few swallows of mineral water from a disposable paper cone and perused the old maps and photographs on the walls that testified to the prominence the place had once enjoyed as a sumptuous bathhouse and the site of bottling plants beginning in the 1880s, and then its renovation as a public health facility in the 1950s.



FIGURE 1. Individual bathing room with *placer*, Peñón de los Baños, 2017. Photograph by Author.

I was escorted into my own bath cubicle by a young woman in hospital scrubs and high, white rubber boots, and given precise instructions: soak for a maximum of twenty minutes; repose sweating on the cot wrapped in a sheet; do not drink more than three cups of water. The constant deep rumble of trucks and cars from the highway outside the window greeted me in the bathing room, where a tub of chipped, stained marble slabs—what was called a *placer* in Mexico for hundreds of years—filled quickly with steaming mineral water pumped from eighty meters below the building, a water that had been used for bathing in that locale for the last five hundred years. The sink did not work; the sheet covering the flimsy chromed cot with torn vinyl cushions was bleachy-clean but bedraggled. None of that mattered too much, because like the other clients of Peñón I was not looking for a luxury spa pampering. It was all about the water: soft and hot, relaxing and curative. A moment of natural healing in one of the world's biggest, densest cities.

HOT SPRINGS AND BATHING: EVERYDAY WATER CULTURES

The visit to Peñón's mineral springs in Mexico City was one of dozens I have made over the years in different places around the world. I of course am not alone: many people seek out mineral waters for their therapeutic properties, their flavor, their enjoyable warmth, and the good times they have drinking or soaking in them with friends and family. What began in college in the late 1980s as an encounter with the peculiar splendor of these strange corners of the landscape became twenty years later an anthropological research project to understand how and

why people use these peculiar groundwaters in Mexico; how they imbue them with such intense and complex meanings; and how they understand their quotidian interactions with them, bathing and drinking. How is this most direct of experiences—drinking or soaking in water—a social and cultural construction? Who owns the mineral waters, and who is allowed access to them? What do the waters do to us? Why have scholars not embraced the topics of hot springs and bathing, when water is such a fashionable topic?

In this book I approach these as historical, anthropological questions, asking how interactions with mineral waters in Mexico took shape over the long modern period from around 1500 to the present. Most of what we know about the history of hot springs and bathing comes from Europe, and Mexico was conquered and colonized by Europeans, and so it is reasonable to start this inquiry there. While there is relatively little academic interest in mineral springs today, for millennia the study of their waters guided inquiry in Europe about the relation of humans to nature. Waters were thought of as multiple, unique liquids, much in the way that today we think of different bottles of wine as unique yet belonging to a unified category. Both everyday people and scientists also considered them efficacious—waters were agents that acted upon the world and, in particular, on the bodies of humans. The Romans are the most important influence in this quest to understand human-water relations; following the ideas of Greeks they formulated key elements of a medicine of waters that has lasted to the present day.¹ As they expanded their empire they built bathhouses on hot springs and incorporated local religious traditions into Roman bathing culture. Baths were ubiquitous in the Roman period, and still important throughout northern Europe during early Christianity. During the years from about 500 to 1000 bathing became less frequent and took on new forms, but mineral springs retained their strong significance for healing, often in the form of holy water.²

After 400 AD, Roman infrastructure fell into disuse and Roman water culture fell into disrepute, but Mediterranean Arabs carried forth those ideas and physical engagements with water during the medieval period. Between the tenth and twelfth centuries much of the classical knowledge about bathing and health was translated and conserved by scholars in the western Caliphate in Cordova (now Spain), from where it spread to Italy and France.³ For example, Peter of Eboli's narrative poem from the 1220s, about the thermal baths at Pozzuoli in southern central Italy, offers an extended discussion of mineral waters using classical references. The poem is testimony to a deeply ingrained popular culture of bathing with prominent sociality and sexuality that may have receded slightly between 500 and 1000, but was once again flourishing in the 1200s.⁴ In Spain and other areas of the Arab world bathing in bathhouses continued to be a daily event for many people in the Middle Ages, and although the steam bath replaced the immersion pool as the principal practice, the waters retained their spiritual agency. In the 1500s, the ascendancy of Christians in Spain led to a century-long hiatus in which

bathing was largely abandoned. In general, however, between 500 and 1500, people continued to take to the waters, giving lie to commonly held ideas of a dismal, dirty, and depressed medieval Europe.

As the elite renaissance of bathing expanded in France and other northern European countries in the sixteenth and seventeenth centuries, new users with new knowledge about the specificity and agency of waters butted up against existing ones. Scholars reread the works of Pliny the Elder, Aristotle, Hippocrates, Galen, and others who discussed the therapeutic benefits of bathing and drinking, especially in hot and mineral waters, and bathhouses were rebuilt using classical architectural plans.⁵ Part of the impetus behind the reemergence of therapeutic bathing literature was to control the stream of people taking the waters, and shift the basis of popular healing practices from empirical “trial and error” toward disciplined reason in the hands of doctors.⁶ Differences in hot springs water cultures were delineated by fundamental social divides, such as bourgeoisie/nobility and peasant/elite, but Renaissance science incorporated elements of late medieval popular culture that derived, albeit remotely, from the practices and knowledge of the Greeks, Romans, and later Arabs.⁷ Beginning in the 1600s, immersion and steam bathing were recast as secular practices increasingly explained as therapeutic and, later, hygienic. Bathing and the use of heterogeneous waters grew dramatically in the second half of the nineteenth century, hand in hand with the extension of urban infrastructures and new structures of feeling about nudity, odors, cleanliness, and the availability of water.⁸

Curative and hygienic practices evolved that included bathing, showering, drinking, and even inhaling mineral waters, and each of these took many forms. Bathing by immersion was for a long time the principal form of contact with waters, and different kinds of bathtubs and pools were designed for different kinds of baths: the full-body bathtub, the smaller tub for the sitting bath, and even tubs for the isolated treatment of limbs. Each particular mineral spring was thought to have powers that derived from the specific qualities of its waters, and people sought treatment of their ailments by choosing among those springs, and from among the doctors who set up practices at each. The conceptual framework for understanding these waters and treatments evolved as well, as emergent scientific disciplines provided new information about the character of the different waters. Modern chemistry and medicine, for example, were pioneered in the spas of Europe as part of a search for the causes of mineral-water cures.⁹ Even today, the labels of mineral-water bottles often provide analyses of the chemical contents of the waters they contain, and spas with mineral waters prominently display this information.

In the middle of the nineteenth century, Pasteur and the advent of microbiology shifted attention to the organisms living in water, and the effects of ingesting them. At that time drinking also became a principal focus for the prevention of disease and for curing ailments with mineral waters, as it was increasingly believed that the minerals in water were not absorbed through the skin, and therefore needed

to be introduced through the stomach. The inhalation of mineral waters in the form of steam or mist also gained prominence in the late nineteenth century, while curative and prophylactic bathing focused on the physical application of streams of water to the body—showers, jets—which were also considered important for cleansing the skin of microbiological vectors of disease, and on the effects of the temperature of waters on the body. Physical contact with waters changed as medicine, science, and technology evolved.

The modern reshaping of water cultures gained momentum with the growth of capitalism and a reworking of human-environment relations in the eighteenth and nineteenth centuries. The modern spa was born in that period, linked to the formation of a bourgeoisie who engaged in leisure activities previously restricted to the nobility.¹⁰ Historians connect European spas to the professionalization of the medical industry and its relation to state power, a process that formed part of the wider reconstruction of human relationships to water involved in public health and the sanitary city.¹¹ Increasingly, mineral and hot springs were destinations for middle-class urbanites seeking relaxation and therapy, and this movement constituted a budding tourism industry.¹² These particular social uses of mineral springs spread to other places in the world through the assemblages of empire, especially in the nineteenth century. Mineral springs were important sites of recuperation for French colonial administrators, for example, and hot springs bathing became an important activity in Brazil in the nineteenth century.¹³ The British and Hapsburg empires created global networks of spas that served colonists and tourists, and the influence of Japanese bathing traditions is seen in Europe after 1860.¹⁴ The business of bathing and bottling drove the reshaping of cultural engagements with waters.

Water cultures were formed not only in hot springs, of course. Ordinary Europeans bathed in rivers and lakes, especially where it was warm. Parisians with some money bathed at swimming clubs in the Seine as early as the thirteenth century, and people heated water to wash themselves.¹⁵ Wealthy people took baths at home in the Middle Ages, and these, like the public bathhouses in areas under Arab influence, utilized regular water heated for the purpose. Seaside resorts also became fashionable destinations in the late eighteenth and nineteenth centuries, and experts produced theories about the therapeutic effects of bathing in these other waters, as well as elaborate “bathing machines” that lowered the delicate and infirm into the beneficial liquid.¹⁶ Of course, many people just swam in whatever waters were nearby, for fun or to cool off.¹⁷

The popularity of bathing in public bathhouses culminated in the late nineteenth century. After that, the growth of urban hydraulic infrastructure moved the bath into the domestic setting, ending the era of the public bathhouse in many of the cities of Europe and North America by the early twentieth century. Simultaneously, advances in bacteriology called into question theories about the curative properties of water, and pushed medicine away from water. After the famous discovery by J. T. Snow that London’s cholera epidemics were linked

to water, the liquid was increasingly seen as a health risk rather than a benefit. Bottled spring water was favored by those who could afford it, but by 1900 the cities in the developed world built infrastructures and established water quality standards that assured clean, safe tap water for large urban populations.¹⁸ In places where public water infrastructures were slower in coming or incomplete, or where deeper cultures of social bathing reigned, such as Eastern Europe and Japan, public bathhouses lasted deeper into the twentieth century.¹⁹ Hot springs resorts fell out of style in many places in Europe and North America after 1920, while remaining popular among the middle classes in Spain and Eastern Europe, where national health care systems supported the water cure through the mid-twentieth century. The restructuring of economies around the world in the last decades of the twentieth century has changed our relationship to mineral waters once again. The neoliberal downsizing of public health systems created an opportunity for capital to refashion many of the spas in Europe as luxury establishments for a smaller, wealthier clientele.²⁰

WATER STUDIES: HOMOGENEITY AND HETEROGENEITY

Considering the long history of mineral springs, and their importance to the bottling industry today, it seems strange that most contemporary water scholars ignore them and focus instead on the infrastructure and social organization of systems that use surface waters. Anthropologists, in particular, have written a lot about public water systems, but very little about mineral waters and bathing. Why is this? It is true that hot springs and mineral springs are quite rare compared to other sources of water, and produce a very small volume of water. Despite this, hot springs are very notable features of the landscape and have been the object of intensive use and cultural activity for thousands of years. They also have held the attention of scholars and scientists from the Roman period until well into the twentieth century.²¹ In fact, mineral waters seem to have fallen from scholarly view only recently.

A more likely reason than their rarity for the neglect of mineral waters in research today is that they do not fit easily into modern narratives of water as a single, uniform, inert element that can be managed by a unified infrastructure. Christopher Hamlin and Jamie Linton have argued that for most of history waters were understood as heterogeneous, with distinct origins, properties, and powers.²² This shifted in the eighteenth century, when the prevalent idea of waters as multiple gave way to the idea that water is a single, essential element: Lavoisier's formulation of all waters as H_2O . It was a movement of thought in which chemists, biologists, and sanitarians identified both the uniformity of water and a seemingly infinite variety of dissolved and microscopic contents that made each water distinct. In the emerging science of water, the liquid was a homogeneous element

and the obvious qualitative differences among waters that so long occupied the attention of healers, city planners, farmers, and everybody else were now attributed to the “impurities” carried by those waters: sodium, iron, sulfur, carbonates, microorganisms, etc. In this cultural shift, heterogeneous waters began to share space, in an uneasy balance, with a unified water.

This paradoxical balance enabled diverse hydrosocial processes to unfold. The conceptual unification of waters into water was accompanied by the development of a new “arithmetic” style of reasoning that facilitated the management of large quantities of the liquid through extensive physical infrastructures. While the impressive hydraulic works of Rome, for example, certainly required sophisticated engineering to move large volumes of liquid, they were built to preserve the plural identities and agencies of the various waters that the city drew from different sources.²³ However, the conceptual shift from waters to water that began in the eighteenth century implied that an infinite number of sources could be brought together by a physical infrastructure extending limitlessly through Cartesian space. In this vision a singular water was subject to a single standard of quality that set acceptable amounts of different biological and chemical impurities such as bacteria, arsenic, and so on. The culmination of this process was the monumental integration of waters and waterways in the western United States after World War II, and the plans for even grander, transcontinental hydraulic works: a fully plumbed landscape.²⁴ As modern hydraulic infrastructures expanded, an ever-smaller proportion of people got their waters directly from wells, rivers, and the like, and more saw the tap or the irrigation canal as the source of water. That social, conceptual, and infrastructural shift to “water” obscured many of our uses of and knowledge about heterogeneous “waters” such as mineral springs.

HYDRAULIC SOCIETY, IRRIGATION COMMUNITIES, WATER CULTURES

The literature on water that developed in the twentieth century, including much of the historical and anthropological work on the topic today, reflects this intellectual and infrastructural domination of “waters” by “water.” Rather than devote energy to understanding particular waters and how they shape diverse human ecologies, scholarship on water in the twentieth century usually treated water as an inert, universal backdrop to the question of how humans organize themselves socially and politically to utilize the substance. These water studies can claim one origin in the work by V. Gordon Childe and Karl Wittfogel that theorized the connection between the rise of complex societies and state power and the physical and political control over water. Anthropologists Julian Steward and Angel Palerm incorporated Wittfogel’s ideas into the “cultural ecology” perspective in anthropology that they developed in the United States and Mexico in the 1940s and 1950s.²⁵ Scholars working in this tradition centered attention on the control of water to produce

agricultural surpluses, the constitution of peasant and political classes, and the transfer of surplus from the former to the latter.²⁶ For decades since, debates have wheeled around the central pivot of irrigated agriculture and the state, and histories of water that focus on the modern period in both capitalist and socialist systems reproduce the same assumptions about water as an undifferentiated and inert backdrop.²⁷ In all this work the water itself is assumed to be a homogeneous substance across diverse geographies and cultures, incapable of influencing people's bodies, their activities, or their ideas about the environment.

The critique of how irrigation served to consolidate the power of state and capital compelled many anthropologists studying water to turn their attention from "hydraulic society" to small-scale irrigation systems managed by peasant communities.²⁸ These scholars questioned a central assumption of the "hydraulic society" literature by pointing out that irrigation does not necessarily lead to despotism or state formation, but is often at the heart of the reproduction of community and peasant domestic economy.²⁹ Aspects of culture such as authority and religion were recognized as playing a key role in water management. But despite the critical angle taken by the "irrigation community" literature on the high modernist pretensions and failures of large-scale irrigation, it shared with the work on "hydraulic society" a common understanding of water as a uniform substance to be managed, and it privileged questions of social organization and technology. The differences among systems were found in the structure and scale of water management, more than the cultural understandings of the water itself, or the plethora of uses people make of waters in their daily lives other than irrigating fields and managing hydraulic infrastructure. The unitary, arithmetic notion of water as a singular, exchangeable substance persisted, carried forward in the culture of scholars and politicians who, despite the differences in their political projects, shared an ontological blindness to the heterogeneity and efficacy of waters.

Despite the rise of homogeneous water among scholars and planners, the heterogeneity of waters and water cultures never disappeared, and actually gained strength through the business of bathing and bottling. Even today people discern the particular characteristics of waters in different public water systems: New York has famously good tap water, Florida not so much. But it was mineral waters that retained their identities most strongly. During the eighteenth and nineteenth centuries, while other waters were physically integrated into infrastructural systems, mineral waters were left to themselves and their ancestral uses. Their dissolved minerals often render them harmful to agriculture fields, industrial machinery, and urban pipes, and so these heterogeneous waters continued to be used for bathing and drinking, activities that expanded during the eighteenth and nineteenth centuries, reaching a peak around 1900 before fading in the 1920s. Hot springs spas flourished all over Europe, the United States, the French and English colonies, and, as we shall see, Mexico. During the late nineteenth and early twentieth

centuries, mineral waters and other watery drinks became a major industry, and today the business of bottling heterogeneous waters is expanding once again.³⁰

The recent proliferation of heterogeneous watery use-values takes place in the context of a global “water crisis” defined by serious contamination problems and an absolute scarcity of the resource brought on by waste and hard limits to the amount of fresh water that can be captured and stored with infrastructures we have built over the last century. Water managers in the United States realize that the construction of yet more massive, elaborate, and energy-intensive hydraulic systems is not a sustainable solution.³¹ The World Bank and other national governments have followed suit in seeking less costly infrastructural solutions to providing water for irrigation and urban use, and placing more emphasis on decentralized organizational and political solutions to reducing overall consumption of the liquid.³² This turn to decentralized demand management has brought with it a recentralization of water management in the realm of culture.³³ But the concept of “culture” at work here is often narrow and instrumental: shared economic and environmental values for the liquid to be distributed from the top down. Where possible, demand management programs start by setting prices for water that will lower consumption. Usually these are tiered pricing schemes in which a basic quantity of the liquid is assured at low or no cost, and greater amounts can be purchased at increasingly higher unit rates. The assumption behind these schemes is that high prices serve as signals for consumers to reduce their consumption. “Culture,” from this perspective, is a unified system of values, shared within a group, that guide the universal, economic decision-making of rational individuals.

Decentralization and demand management in the neoliberal moment have also been initiated from below as popular processes, and these movements are rooted in deep cultural histories and local meanings for waters and landscapes. For example, the “New Water Culture” (*Nueva Cultura del Agua*) movement in Spain came together in the 1990s to recover, foster, and create environmental ethics and participatory management.³⁴ Activists and scholars argued that irreplaceable elements of their environment, society, and culture were threatened by the government’s 1992 National Hydraulic Plan, and they spearheaded an effort to chronicle and valorize the multiple uses, values, and meanings of the water.³⁵ Another example of how sensitivity to local meanings and waters is being propelled by local action comes from the Standing Rock Sioux Tribe Reservation, in what is today the U.S. states of North and South Dakota. Thousands of people from all walks of life have joined the struggle of the Lakota Sioux to defend their lands, their waters, and themselves from contamination and dispossession by oil companies and their government allies. A key phrase in this mobilization is “water is life,” which expresses an unyielding respect and love for the planet and its beings that is at odds with a way of life built on extraction. The politics of water has clearly moved onto the terrain of culture.

THE POLITICAL ECOLOGY OF WATERS: NEW
MATERIALISMS, OLD ONTOLOGIES

Scholars are contributing to this upsurge in interest in water cultures in at least two ways. On the one hand, they are producing studies on a number of important topics, including the varied and complex meanings for water,³⁶ practices of swimming and bathing,³⁷ long-standing uses and meanings of mineral springs,³⁸ the current boom in bottled waters,³⁹ and role of science in shaping our interactions with the liquid.⁴⁰ Along with these new topics of study, scholars are exploring new ways of theorizing and depicting the relations humans have with the world that surrounds them. The modernist assumption of the centrality of human will, intentionality, and action has been roundly questioned, and a whole array of animate and inanimate nonhuman agents are now contemplated as participants in “assemblages” or systems that make history and act politically.⁴¹

The foundations for this scholarly perspective of “new materialism” are often found in Spinoza, Deleuze, and other philosophers, but in this book I suggest that nondualist ontologies of material vitality and efficacy permeate popular culture, and can be identified in the history of mineral waters and bathing. For thousands of years people have ingested and immersed themselves in mineral springs because they believe these waters have a beneficial effect on their bodies and souls. These waters are still considered to be efficacious, as evidenced by the immense market for bottled mineral waters and mineral water-based cosmetics. This is not simply the idea that pure waters do no harm and dirty waters are bad for you, but rather that mineral waters are “virtuous”—that they are powerful agents that act beneficially and therapeutically on the human organism to increase well-being. Drinking and bathing in mineral waters are activities motivated by a popular ontology not entirely commensurable with that which holds the individual human self to be sovereign.

To understand the long history of this popular ontology of waters this book takes a political ecology approach to the social relations and cultures of mineral waters, bathing, and infrastructures. Political ecology infuses a materialist focus on human-environment dynamics, social organization, and power with a critique of the conceptual categories that structure socioenvironmental inequality and destruction.⁴² Political ecology thus urges us to consider how a modern ontology of water came to dominate other ways of understanding waters as a material, social process. The book shows how conceptual dimensions of the waters/water dynamic are connected to the expansion of hydraulic infrastructures, the integrated of waters and people into coordinated hydrosocial systems, the displacement of some forms of bathing by others, the inclusion of heterogeneous waters in commodity exchange, and the role of the mineral waters themselves in shaping all of this. But political ecology also helps us to recognize that this historical process of domination is neither unilinear nor complete, and that alternate concepts and uses of waters continue to exist together with the groups that nurture them.⁴³

CHAPTERS AND ARGUMENTS

In 1500 Iberoamerican water cultures were marked by deep conflict. In chapter 2 I use secondary literature and firsthand accounts of soldiers and priests to discuss how, at the close of the Reconquista, ascendant Christians in Spain attacked Jewish and Arab institutions and practices of bathing, especially the *hammam*, or steambath, driving the bath out of sight in the sixteenth century. Conquering Spaniards in what is today central and southern Mexico brought this deep hostility toward bathing to bear on the indigenous steambath, or *temazcal*, which was the principal mode of bathing in the Americas and an important site for social, therapeutic, sexual, and religious activities. Bathing in water recovered its acceptability by 1600, although Spanish missionaries and government officials continued the effort to extirpate indigenous cultural practices from the *temazcal* and reduce its multiple functions to only the cleansing of bodies. By 1700 the *temazcal* was widely accepted among American-born Spaniards, and many indigenous people and humble mestizos also periodically immersed themselves in hot water bathtubs (*placeras*) offered by the bathhouses in Mexico City. During this period the first evidence appears that Mexican hot springs were developed into baths by religious orders to treat diseases and ailments, part of a burgeoning transatlantic field of medicine that carried with it the revaluation of hot and mineral spring-waters. Records of popular bathing for health and pleasure in the hot springs of Peñón de los Baños and Michoacán also appear at this time, showing that this was a cultural shift that worked its way throughout society. This chapter discusses the intersections of class and race that shaped bathing and the social use of hot springs in colonial Mexico, and shows how these cultures of water were shaped by hierarchical fields of power, notions of bodily difference, and inequality in access and property.

Chapters 3 and 4 focus on bath practices and water science in the Enlightenment. The late eighteenth century is a particularly important moment in which notions of cleanliness, public health, and urban order came together in the reorganization and regulation of Mexico City's water system and the practices and meanings of bathing. Chapter 3 shows how ideas of rational government were deployed to deal with problems of water scarcity and social effervescence. Investments in infrastructure brought together multiple waters, and the material and conceptual unification of waters as a singular substance began to take shape unevenly. Mexico City suffered from a scarcity of freshwater, and so the viceroy Conde de Revillagigedo launched a campaign to extend and improve the hydraulic infrastructure. These material developments were accompanied by a moral effort to reshape popular bathing practices that were deemed dangerous to boundaries of race, class, and sex, and the social order those boundaries defined. Archival documents from the Departments of Water and Police of the Mexico City government attest to efforts by the ruling class to circumscribe popular bathing practices and discipline unruly subjects. Much of this was aimed at keeping people and waters in the right place:

local officials intervened to stop people from bathing themselves and their animals in the public fountains, to keep men and women apart in the bathhouses, and to keep wastewater separate from freshwater. The arts of government were enacted in the spaces of the bath and on the bodies of bathers in a quest to form modern moral and political subjects.

The late eighteenth century also witnessed the emergence of science, and Mexican mineral waters were a principal object of study for chemists, pharmacists, and doctors. In chapter 4 I discuss how mineral springs medicine flourished during a time marked by intellectual and cultural opening and, eventually, the dismantling of the Spanish colonial government in the Americas. Studies of various Mexican hot springs were carried out under Royal orders in Michoacán, Tehuacán, and the Valley of Mexico, and the church conducted other studies. It was during the rule of the Bourbon government that the bathhouse at Peñón de los Baños was rebuilt, a sign of the prosperity generated by increased trade as well as technological advances in mining and industry. Growing wealth and the upwelling of scientific ideas about the efficacy of waters only partially displaced, however, everyday practices of bathing and access to these waters by the poor.

Chapter 5 shows how, in the second half of the nineteenth century, improved drilling and pumping technology integrated subterranean aquifers into urban water infrastructure, providing an unprecedented opulence of water. New sources of groundwater facilitated the creation of many new public bathing facilities in Mexico City and a related reduction of the flow of springs that served local communities in the Valley of Mexico for thousands of years. Swimming pools and bathhouses opened in the new, wealthy neighborhoods near Chapultepec Park and along Paseo de la Reforma, marking an explosion of social bathing. A period of exaggerated economic growth between 1890 and 1910 supported a dramatic expansion of the urban water system, the building of household bathrooms, and the practice of individual private bathing. This marked the beginning of a long, and never fully consummated, shift from public bathing to private bathing.

Chapter 6 shows how this changing sociality of bathing in the nineteenth century was accompanied by advances in chemistry, microbiology, and medicine. Journal articles from the mid-1800s tell us about the project to scientifically characterize the diversity of the waters used for bathing and drinking in Mexico. These documents reveal how microbiology defined established practices of bathing and drinking as potentially dangerous for public health, and set new parameters for the healthful interaction with water. Biological approaches did not displace chemistry from its position of authority in the realm of public health; in fact, belief in the therapeutic virtues of mineral waters only increased. Businesses of mineral water treatments—bathing and drinking—were established in Peñón de los Baños, Guadalupe, Topo Chico, Aguascalientes, Tehuacán, and elsewhere, and these businesses reinforced concepts of heterogeneous waters and alternate bathing practices.

The development of businesses at mineral springs did not occur in a vacuum. In chapter 7 I evaluate the role of the Mexican state in promoting the transfer of control over mineral springs from communities of peasants to urban industrial businessmen. The incursion of capital into Mexico during the late nineteenth and twentieth centuries led to the renovation of bathing facilities after almost a century of neglect, the creation of mineral water bottling plants, and the privatization of mineral and hot springs. In Tehuacán the state facilitated the consolidation of the bottling industry by imposing public health regulations that eliminated small and artisanal companies. State regulations insisted on a homogeneous standard of biological quality that enabled bottlers to increase their production of heterogeneous mineral waters and soft drinks. In Topo Chico, state lawyers and scientists helped to wrest control of the waters from peasants, who for centuries relied on them for agricultural and domestic uses, and place them in those of industrial bottlers including the Coca-Cola Company.

In chapter 8 I argue that the ongoing heterogeneity of water cultures is rooted in social heterogeneity. The pressure on hot springs generated by capital expansion into Mexico between roughly 1880 and 1930 met with strong resistance by rural, small-town Mexicans who fought to maintain their waters as common property with open access. After the revolution, national elites inspired by the model of tourist development put into practice at the Agua Caliente hot springs in Baja California and in Tehuacán collaborated with local actors in an effort to turn the town of Ixtapan de la Sal, in Mexico State, into a destination for bourgeois tourists from Mexico City. However, residents of that town challenged the new monopoly by outsiders over the hot springs they had always used, and charted an alternative plan for community ownership and management of those waters that preserved access to them for locals and humble visitors. I argue that this struggle and others over Mexico's mineral springs were brought on by competing cultural projects defined in terms of race, class, ethnicity, and locality.

I conclude on a positive note. There often seems to be little hope for restoring a respectful relationship with the waters in our world. The construction of massive infrastructure proceeds apace, and groundwater in all parts of the world is rapidly being depleted. Visit most households in most cities and the unification of water appears to have gotten the upper hand: people are hard pressed to identify their water, its qualities and origins, and most have just as little understanding of the infrastructures that serve to connect them to the world and each other. Sit a while in a hot mineral spring, however, and the people you meet will explain the particular qualities and therapeutic uses for that spring, and compare them with those of other springs: some salty; some sulfurous; some metallic. The springwaters you soak in will leave your skin feeling and smelling a certain way, which may compel you to consider how those particular waters act upon your body.

This book concludes that such experiences are vitally important to any project of reconstructing our relation to water, and that our daily interactions with

water—bathing and drinking in particular—are potential sites for this reconstruction. Most efforts to deal with problems of scarcity and pollution of water try to increase supply or decrease demand through modern universalizing approaches such as monumental infrastructures or water markets. These approaches have not worked so far, and the book suggests that they may be part of the problem rather than the solution. Our modern water cultures are relatively recent developments, and even today not all aspects of our water cultures are alienated and homogenized; they never fully will be. Water cultures are products of long material and meaningful histories that we can trace back hundreds or, in some cases, thousands of years. And while the economic, social, and cultural dimensions of modern water may push us toward integration, uniformity and exchangeability at ever-greater scales, they never fail to reproduce heterogeneity. The wealth of varied practices, ideas, and values that make up this heterogeneity may help us to move our relationship with water in a more sustainable, less damaging direction.

A NOTE ON THE TEXT AND METHODS OF HISTORICAL ANTHROPOLOGY

This book uses techniques from history and anthropology to tell a long story about waters and people. It deploys mostly archival and documentary evidence to locate the origins and describe the evolution of our relationship with waters in Mexico. In this sense it is cultural and social history. However, I spent days, weeks, and months at hot springs in Mexico, bathing and socializing, taking interviews and notes, and drawing site maps. That fieldwork is not visible in the text, but it frames the historical research, and defines many of the questions I hope to have answered in the book. What may be more apparent is the ethnographic approach I take to the archival and documentary evidence, always looking for the quotidian experiences and cultural understandings of people who drank and bathed in the past. I reproduce, verbatim, the words and testimony of participants in this history, and set these passages apart in boxes, in quotation marks. In other places I reconstruct what I imagine was happening from the perspective of those participants. These reconstructed passages are also set apart in boxes, but have no quotation marks, as they are, finally, my own words.