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James Salzman, *Drinking Water: A History*

for water, such as desalinization plants and effective use of reclaimed water.

Overall, *Sharing the Common Pool* provides a basic framework for understanding water rights in Texas, including how those rights are determined and the significance of those rights for Texans. While Porter's book is geared toward those in the Lone Star State, certain aspects—such as the competing private and public demands on water resources and the importance of water to real estate transactions—are universally applicable to other states with scarce water resources. The book's discussion of legal principles and case law is somewhat vague, though this may be a result of Porter's targeting non-attorneys as his primary audience. Porter tempers this discussion by drawing attention to the importance of legal counsel in land transactions, particularly when water rights are uncertain. *Sharing the Common Pool* serves as a good primer for lawyers and non-lawyers alike who are interested in learning about Texas water rights.

Rafael Mendez

James Salzman, *Drinking Water: A History*, Overlook Duckforth Publishers, New York (2012); 320 pp; ISBN 978-1468307115.

James Salzman is the Samuel Fox Mordecai Professor of Law and the Nicholas Institute Professor of Environmental Policy at Duke University. Despite this legal background, his book, *Drinking Water: A History*, takes a historical, sociological, and political approach to analyzing humankind's relationship with drinking water. Salzman explores the human use and conception of drinking water from biblical times through the present in order to explain how society arrived at its current understanding of one of our most valuable natural resources. The book takes a worldwide perspective, exploring the politics of water from the United States to France to Bangladesh, and everywhere between. Through this framework, Salzman seeks to examine one fundamental issue with innumerable facets: our relationship with drinking water.

In the first chapter, "The Fountain of Youth," Salzman examines the mythical role that water has historically played in world history and mythology. Using Juan Ponce de León's mythical search for the Fountain of Youth as his first example, the author explores the various mythical and religious qualities attributed to water throughout the centuries. He notes that the first myth surrounding water, the goddess Ishtar's journey to the Underworld, dates back five thousand years to ancient Mesopotamia. The English knight John Mandeville also told stories of waters in China that could cure anyone of "any malady he has." In addition, Salzman discusses myths imparting water's supernatural qualities from the Middle East, Norway, Finland, China, Greece, India, and North America. He concludes the chapter by describing Bernadette Soubirous's discovery of waters in Lourdes, France, to which the Catholic Church ascribed miraculous qualities. Throughout human history, water has played a role that transcends mere sustenance.

Salzman's second chapter addresses access to drinking water throughout world history. The chapter begins by introducing a debate that courses through the rest of the book: Should drinking water be treated as a human right or as a

marketable commodity? Salzman sets the foundation by delving into the history of storage, distribution, and laws governing access to drinking water. The author compares Jewish law, Islamic law, and Australian aboriginal tradition to show that law and custom in arid regions often protected individuals' right to drinking water.

Salzman shows how ancient Romans treated water as both a marketable commodity and a public good. Wealthy citizens paid for piped water to their homes, which funded the construction of public "lacus," or public fountains, where proletariat Romans could gather water at no cost. Salzman juxtaposes this system against the Revolutionary War Era's municipally financed Philadelphia water system, the privately financed New York system, and the privately financed approach in London. All of these examples validate the concept that markets and rights to water coexisted throughout history.

The third chapter surveys water safety and asks the crucial question: How do we know what "safe" water means? Salzman points out that our conception of safety is informed by our comprehension of disease, technology, and aversion to risk, meaning our interpretations of safety vary over time and across cultures. In an effort to define this fluid concept of "safe water," Salzman posits four primary considerations: source identification, source protection, treatment, and distribution.

Salzman points out that ancient societies often had to identify an ample source of water in order to foster expansion. Once the source is identified, humans must determine its safety, and approaches to making this determination differ greatly. For example, in southwest Nigeria, modern residents examine whether water comes from mountains or springs near rocks to determine safety. By contrast, in the United States, we rely on the Safe Drinking Water Act to ensure that our water is reliably safe. Next, the author examines the evolution of sanitation in source protection, and catalogues the scientific advances underlying the discovery that disease is often transmitted through water. The chapter further examines the history of water treatment from 2000 BCE techniques to modern-day reliance on chlorine for purification in the United States. Lastly, the chapter addresses the necessity of reliable distribution methods to get water from source to mouth while avoiding contamination and excessive loss.

The fourth chapter, "Death in Small Doses," analyzes contaminants in water and how they affect the developing and developed world. Salzman uses examples from around the world to show the breadth of the problem. He analyzes the differences between Bangladesh, where drinking water often contains arsenic, and the United States, where our concerns are more focused on trace amounts of pharmaceuticals, endocrine disruptors, or fracking fluids. Using these examples, the author comes to three major conclusions concerning contaminants: (i) safety is a relative concept; (ii) drinkers must rely on the judgment of experts; and (iii) the presence of poisons or carcinogens in drinking water is not necessarily hazardous, given their presence in only trace amounts.

The fifth chapter investigates the risk that terrorist attacks pose to water systems. Salzman reveals the vulnerability of contemporary water storage facilities by using the example of teenagers in Blackstone, Massachusetts, who scaled a water tower, broke its fiberglass covering, and urinated into the water supply.

Pointing out the apparent weakness of distribution systems generally, the author explains that the four main threats to our water system take the form of chemical threats, biological threats, cyber attacks, and conventional explosives. After explaining these threats, Salzman argues that there are measures to mitigate the likelihood of attack but points out that all of these remedies have financial costs. Salzman pragmatically notes that people can install fences, hire security crews, and implement other measures to protect water distribution systems. However, these protections come at a price that many may not be willing to pay.

In the sixth chapter, the author examines the rise of the bottled water market and asks why people are willing to pay a premium for bottled water when our tap water is safer than ever. After describing the medieval market for bottled holy water, Salzman traces the rise of bottled water in mid-nineteenth century America to an increase in bottling technology and the growth of railroads. This growth continued until its demise in the 1920s due to the introduction of chlorine into municipal water systems.

Next, the author analyzes the reintroduction of bottled water in the 1970s and analyzes five factors that made bottled water a competitor with soft drinks in the American marketplace. Salzman contends that convenience, style, taste, fitness, and health concerns led to the rise of bottled water sales in the 1970s. Polyethylene terephthalate plastic allowed companies to bottle water cheaply and to present it alongside other beverages in convenience stores. High-end restaurants began providing bottled water, and celebrity advertisements furthered public perception of bottled water as a stylish commodity. Additionally, many people claim to prefer the taste of bottled water. While blind taste tests show that Americans usually cannot distinguish between bottled water and municipal tap water, Salzman hypothesizes that brand preferences outweigh any discernment in actual taste. Finally, clever marketing played off of the concerns for fitness and health that captivated many Americans in the 1970s. The author notes the impact of marketing tactics, despite the fact that tap water is regulated more stringently than bottled water and is therefore usually safer.

Salzman's discussion of bottled water concludes with an acknowledgment of the myriad problems often associated with the product, including waste, transportation issues, and health. Most importantly, the author contends that the rising aversion to bottled water is attributable to its privatization of something that many people believe to be a fundamental human right.

The seventh chapter further addresses the debate between those who regard water as a private commodity and those who consider it a public good. After analyzing access to water in the developing world, Salzman urges that markets and rights coexist and even reinforce one another. After discussing disenchantment with privatization in South America, the author points out that privatization offers three benefits: access to private capital, services less vulnerable to patronage and corruption, and more efficient distribution of water. On the other side, he discusses constitutions and laws that guarantee citizens' rights to drinking water and the ways in which public provision of services ensures the right to this invaluable resource. The chapter concludes by discussing the efforts of Charity: Water, a non-profit organization working to provide safe drink-

ing water in developing nations. Specifically, Salzman offers founder Scott Harrison's strategies as valuable lessons in how private action can provide access to safe and reliable sources of drinking water.

The final chapter, "Finding Water for the Twenty-First Century," investigates approaches to water distribution as the resource becomes increasingly scarce. Primarily, Salzman discusses moving water from water-abundant regions to water-scarce regions and generating new water supplies locally through processes such as desalinization. Salzman describes the costs associated with regional transportation and highlights failed and successful efforts for desalination and toilet-to-tap efforts. Lastly, the chapter explores utilization of built capital, such as water treatment plants, and natural capital, such as using and preserving water flows, as viable approaches to water preservation in the twenty-first century.

Drinking Water: A History provides a well-researched, thoughtful history of the title resource. Like Mark Kurlansky's works *Cod* and *Salt*, the book effectively frames world history through a lens that explains the way humanity's relationship with water shapes communities and cultures. Salzman's unique perspective combines history with an analysis of contemporary problems in a fashion that helps the layman as well as the legal professional better understand the problems facing water management. The philosopher George Santayana famously wrote, "Those who do not learn from history are condemned to repeat it." *Drinking Water* helps remind us what has worked and failed for water management in the past, and helps elucidate the path for moving forward.

Joey Risch