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History 493: Seminar – Food in America

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Bottled Water in America - Its Nineteenth Century Origins

The current bottled water industry has about three thousand brands sold all over the world. As of the year 2000, in America alone bottled water is a five billion dollar per year industry. In 2007, according to one estimate, the total spending on bottled water in the United States reached an estimated \$12 billion. The mass-production of bottled water began largely in the nineteenth century, when companies began to sell their product for its beneficial effects. The first bottling of spring waters in the nineteenth century in America was a product of the belief that certain springs had medicinal qualities that were curative of various types of ailments. These springs, which had been known to Indians, were discovered by Europeans as source of both medicinal remedies, and later, clean drinking water. By the end of the nineteenth century several companies marketed and sold medicinal water across the country, such as Saratoga Springs and Poland Spring. Also, in the nineteenth century outbreaks of typhoid fever and cholera due to contaminated city water supplies promoted bottled water as a clean alternative to the often polluted municipal supplies. Thus, water from natural sources was bottled and sold by in the nineteenth century largely because it came from a unique source held to have medicinal qualities, and it was considered to be a safe alternative to potentially contaminated city water.

The bottling of natural spring water in America had its genesis with the native Indian's need to transport and store potable water in clay pots. Often, Indians would visit certain springs

to heal the sick, such as the Creek Indians did in the springs of what is now Indians Springs State Park.¹ Once Europeans arrived, the practice of bottling mineral waters for curative purposes began among the European settlers. Europeans had long been bottling medicinal spring waters. In fact, the first recorded bottling of spring water in glass bottles was in Malvern, England in 1622 at Holy Well Spring,² but Europeans had long before visited healing springs, since ancient times. By the nineteenth century in America, numerous spas and resorts were built around healing springs such as Saratoga Springs and Poland Spring. With the demand for the healing benefits of medicinal spring waters for those who could not afford or were disinclined to go the spas, and with the cheaper manufacture of glass bottles, the bottling of medicinal spring waters on a larger scale began in America. This bottling of mineral spring waters was largely driven by the market for curative waters, as well as safe drinking water or “table water.”

Many physicians and others were fascinated by the medicinal qualities of certain springs, and called for investigation of the healing properties of the waters at various springs. In fact, according to Dr. Francis Chapelle, a research hydrologist, “chemical hydrology as a scientific discipline can be traced to the early nineteenth century and human curiosity about the medicinal effects of spring water.”³ But water as a medicinal remedy was not the only reason it was bottled, the demand for safe drinking water also fueled the bottled water industry in in the nineteenth century. According to Chapelle, “[b]y the end of the nineteenth century, bottled water had evolved into a cleaner alternative to often polluted municipal water supplies.”⁴ The advent of

¹ “Indian Springs State Park,” Wikipedia, accessed November 6, 2014, http://en.wikipedia.org/wiki/Indian_Springs_State_Park.

² “1622,” Metapedia, accessed Nov. 16, 2014, <http://en.metapedia.org/wiki/1622>.

³Francis H. Chapelle, *Wellsprings: A Natural History of Bottled Spring Waters* (New Jersey: Rutgers University Press, 2005), xvi.

⁴Chapelle, xii.

chlorination, which eliminated harmful pathogens from city water, as well as muckraking journalism against folk remedies, all but destroyed the bottled water industry by the early twentieth century. But by the 1970s, renewed interest in bottled water stemmed from the environmental movement and the fear of impurities (such as heavy metals, fluoride, and chlorine itself) in municipal water supplies, all with view toward living healthier lifestyles. The desire for purity in the modern bottled water industry stemmed largely from stories in the media about contamination in city water supplies and the marketing of water as a “pure” alternative to tap water, as well as the trend in America for healthier lifestyles.

Europeans had a long tradition of coping with contaminated water supplies by drinking water mixed with beer or other alcohol. In 1620 a party from the Mayflower, led by Captain Miles Standish, marched out into the “hideous and desolate wilderness,” as William Bradford described it, to explore the land of New England.⁵ They encountered about five or six Indians and proceeded to chase them in order to catch them, but were unsuccessful. They spent the night in the wilderness, and the next day they became lost and suffered terrible thirst. They discovered fresh water and remarked that it was as refreshing as the beer they were accustomed to drinking. This is remarkable because at the time Europeans almost never drank pure water, it was always mixed with beer because of the microorganisms that infested most water sources in Europe. Only the very poor would drink water. While the Pilgrims did not know the science of microbiology, there was a strong taboo and against drinking plain water, and the Pilgrims complained that they had no beer. This prejudice against water would continue for over one-hundred years until a new fashion among the rich gentry of visiting springs and spas and “taking the waters” for health

⁵Chapelle, 101.

reasons developed in the early eighteenth century. This practice, also emulated by the newly rich industrial tradesmen of the eighteenth century, eventually reversed the taboo against drinking water.⁶ Spas where people would come to relax and ease their ailments were numerous by the late nineteenth century. These spas, including “Berkeley Springs and White Sulphur Springs in West Virginia, Hot Springs in Virginia, Ephrata in Pennsylvania, Saratoga in New York, Poland Springs in Maine, Bartlett Mineral Springs in California, and Hot Springs in Arkansas” which “offered grand hotels to match the best of Europe.”⁷ This “spa craze” in America was largely introduced by European immigrants. And while the wealthy could afford to visit the spas, there was a market demand for the curative water of these springs, which became a major impetus for the bottled water industry in the nineteenth century.

However, prior to the Europeans, Indians were very familiar with medicinal springs, with the Iroquois utilizing Saratoga Springs in New York at least as early as the fourteenth century. A Spanish account from 1541 tells of Tula Indians drinking from what is now Mountain Valley Springs. Tolenas Indians in what is now California's Solano Country consumed mineral water from springs, one of whose waters would be marketed in the mid-nineteenth century for its aphrodisiac effects: “To those suffering from loss of virile power, this beverage is an absolute blessing,” read a pamphlet from that time.⁸ It seemingly also was a cure for malaria and hangovers as well. Furthermore, the Wappo Indians of the northern Napa Valley utilized the geyser springs that would eventually become the Calistoga Mineral Water Company (now owned

⁶Chapelle, 105

⁷Maureen & Timothy Green, *The Good Water Guide: The World's Best Bottled Waters*, (London: Rosendale Press, 1985), 132.

⁸Elizabeth Royte, *Bottlemania: How Water Went on Sale and Why We Bought It*, (New York: Bloomsbury, 2008), 31.

by Nestle).⁹ Clearly, the desire for mineral waters with medicinal properties was significant to American Indian inhabitants due to their unique properties that were highly valued. These properties would be a major source for the demand for these waters by later European settlers.

Healing Springs in South Carolina was another spring known to Indians to have healing properties, which created a remarkable demand for the water. The legend of the spring is that in 1750 Nathaniel Walker received a tract of land containing a spring. He saw an Indian bathing in the spring. Upon asking the Indian where the waters came from, “the Indian replied that they were from the Great Spirit and that they could heal sickness and injuries.”¹⁰ Walker then purchased the spring from the Indian for maize. This part of the story may or may not be true, according to Chapelle. However, it is documented that in 1782 during the Revolutionary War, six wounded British soldiers bathed in the spring and drank the water and were healed of their wounds. The legend continued with numerous other stories of people being healed by the Healing Springs. The demand for the water of the spring because of the healing properties attributed to it would continue until today.

The Boylston family acquired the Healing Springs of South Carolina in the 1800s, and in 1907 Lute Boylston, the owner of the spring, attempted to bottle and sell the water; selling it under the name of Healing Springs Bottling Company. However, the demand for healing waters was waning due in part to advances in medical science and the muckraking journalism of Samuel Hopkins Adams, whose attempts to expose fraudulent healing remedies also caused a decline in the market for healing waters (though he did not directly attack them). So Lute Boylston's business in bottling spring water failed, and he ended up giving the spring and an acre of land

⁹Royte, 31.

¹⁰Chapelle, 20.

surrounding it to “God Almighty” in his will, which went into effect in 1944. Today, people still visit the spring to fill up bottles with water.

Numerous other springs with healing properties were widely recognized in colonial and early America, as witnessed by newspaper reports of medicinal springs from that time. For example, a letter in the *American Weekly Mercury*, from 1722, reports about a spring of "Mineral and Medicinal water" which is health-bringing and allegedly cures "all sicknesses, wounds, and diseases" in the Great Valley west of Philadelphia.¹¹ And an advertisement from 1722 for a 150 acre plantation mentions a “famous Medicinal Spring” on the land near Bristol.¹² These and similar reports indicate that during colonial times Americans readily believed in the virtues of medicinal waters, but it was not until the nineteenth century when glass bottles became cheaper to manufacture and the creation of health spas inspired by Europeans created a larger market, that spring water began to be bottled on a commercial scale. But the lure of mineral water's healing properties was the attraction that largely birthed the bottled water industry. This factor in the genesis of the bottled water industry has been largely lost in the modern bottled water industry.

How mineral spring water gets its purported healing properties which are so desirable and make it a sought after commodity lies in the natural geology and hydrology of mineral springs. The vast majority of water that falls as rain enters rivers and streams, picking up sediments and organic materials. Only a minute portion of water seeps downward into natural underground aquifers. This water has been filtered as it goes and is pristine and free from particulate and

¹¹“To the Author of the *American Weekly Mercury*,” *THE AMERICAN Weekly Mercury*, Thursday July 12th to Thursday July 19th, 1722, accessed December 1, 2014, America’s Historical Newspapers.

¹²“*THE AMERICAN Weekly Mercury*, Thursday August 16th to Thursday August 23th, 1722, accessed December 1, 2014, American Historical Newspapers.

organic matter. It has also picked up minerals from the various rocks it has encountered. Therefore, water from deep underground aquifers is free from bacteria and also contains a healthy amount of minerals with known health benefits. These factors made such waters highly desirable as drinking water. For most of history, wealthy Europeans would travel to springs that contained mineral water from deep underground aquifers for their healing effects. However, according to Chapelle, while some of the minerals in the water do have beneficial effects on health, it may also be likely that simply drinking water that was free from organic matter and bacterial contamination for a few days would also produce remarkable healing effects.¹³ For these reasons, the wealthy would often travel to healing springs to “take the waters.” The bottled water industry in America in the nineteenth century was largely a product of the demand for the healing mineral waters of springs from people who could not readily travel to the spas or who could not afford to do so. Also, because medical science was somewhat crude in the early nineteenth century, people tended to medicate themselves, often looking to medicinal spring waters to cure their ailments. There are hundreds of springs in America that are claimed to have more or less healing properties. Three of the main companies in the nineteenth century that bottled and sold medicinal waters were Saratoga Springs, Mountain Valley Springs, and Poland Springs. These three companies would largely dominate the bottled water industry in the nineteenth century, marketing their waters for their curative effects, something which today FDA regulations on what kinds of medical claims can be made largely prohibit.

Some of the earliest recorded bottling of medicinal mineral waters got its impetus from the work of a physician named Dr. John De Normandie. He wrote a paper, which he read to the

¹³Chapelle, 14.

American Philosophical Society in Philadelphia, that described the medicinal properties of a spring in Bristol, New Jersey, that spouted mineral water. He described the water as “similar to those of the much-celebrated waters of the German Spa” which had similar effects such as “quicken the pulse, exciting an agreeable warmth in the stomach, promoting the appetite, occasioning a flow of spirits and a greater degree of cheerfulness.”¹⁴ Furthermore, according to Dr. De Normandie, the mineral waters of the spring had the most salutary effect on the digestive organs, and were able to relieve the intestinal discomforts many people suffered from. As a result of his prestigious endorsement and that of the Philosophical Society, Bristol became an acclaimed resort, and the water of the medicinal spring was bottled and found on the shelves of apothecary shops in Philadelphia to be sold as medicines. This reinforced the idea that mineral waters were medicines for much of the nineteenth century.

The use of chemical analysis of mineral waters aided man's understanding of the medicinal properties of mineral waters. By 1820 the science of chemistry had advanced to the point where mineral waters could be analyzed for the types of dissolved solids that they contained. This allowed doctors to know what types of minerals were in the waters. For example, mineral waters high in iron could cure simple anemia. Mineral waters that contained high magnesium sulfate were used as laxatives. Magnesium sulfate is also known as Epsom salt, which is still used today. The chemical analysis of healing waters in the nineteenth century allowed for the production of medicines to heal various ailments, such that cures for anemia and goiters and scurvy were all developed through study of the medicinal effects of mineral waters. Even today, mineral waters are used by people for health reasons, such as at Healing Springs in

¹⁴Chapelle, 109.

South Carolina. Clearly, for Americans living in the nineteenth century, the lure of the promise of good health a cure for diseases made drinking certain mineral waters highly desirable.

New glass-making technology also aided in the marketing of bottled waters in the nineteenth century. With advances in glass-making technology in the nineteenth century, glass bottles became cheaper to produce, making it financially productive to bottle natural spring water on a much larger scale, reducing its price. According to Chapelle, “as glass bottles became cheaper and more widely available in the middle 1800s, bottled spring waters came to be viewed less as medicines and more as sources of relatively clean drinking water.”¹⁵ Heavy five-gallon water jars began to be used to supply offices and homes in the nineteenth century, being filled with water from wells and springs in the countryside. Because of the likelihood of contamination of city water, these businesses thrived as customers from all classes began to turn to this bottled water as a source of clean drinking water, or table water.

The production of cheaper glass bottles had its genesis in the liquor industry. In the mid seventeenth century in England, the demand for gin and other distilled spirits produced a demand for glass bottles. Due to this demand, glass bottles began to be produced from dip molds, allowing for the mass production of uniform bottles by less skilled artisans. By the mid eighteenth century, the demand for glass bottles and the utilization of dip mold technology made glass bottles much cheaper to produce than earlier. It was not long before medicinal waters were being bottled and sold with the cheaper glass bottles. Prior to the nineteenth century, only the wealthy could afford to use glass bottles to procure spring waters, but there was a general demand for these healing waters. The use of dip-mold technology allowed for considerably

¹⁵Chapelle, 4.

cheaper production of glass bottles, making the cost of the bottle cheaper than the value of some mineral waters.¹⁶ According to Chapelle, “This confluence of circumstances, which had taken more than 2,500 years since the invention of glass, was the real beginning of the bottled water industry in America.”¹⁷ Machine-produced glass bottles utilizing glassblowing machines and an automatic process for making bottles was invented by Michael J. Owens in 1903, making glass bottles considerably cheaper by the twentieth century. The bottled water companies that remained in business after the use of chlorination in city water all utilized these much cheaper bottles. Thus, the cheaper manufacture of glass bottles meant a growing marketability in terms of price for spring waters in the nineteenth century, whether for curative purposes or for clean drinking water.

Besides the medicinal appeal of spring water, there was also a demand for a clean alternative to contaminated city water in the nineteenth century. In the rapidly industrializing cities of the nineteenth century, clean drinking water was hard to come by. The large concentration of people and animals generally meant that local water supplies, such as rivers and wells, were contaminated by fecal matter, as water has a tendency to pick up whatever material is in the soil. The bacteria that cause typhoid fever and cholera were carried in the fecal matter of infected people and would sometimes contaminate the local city water. Many people living in urban areas turned to drinking bottled waters from country springs and wells in order to avoid the possible contamination of city water. This led to a substantial demand for bottled water from clean sources in the nineteenth century.

Furthermore, as the wealthy would visit springs to “take the waters” for their health,

¹⁶Chapelle, 72-73.

¹⁷Chapelle, 73.

hotels and resorts were built around medicinal springs, adding to the demand for this water. As the demand for mineral water grew in conjunction with cheaper methods of producing glass bottles, the bottled water industry in America took off. As early as 1767 water from Jackson's Spa in Boston was bottled and sold as a curative. Additionally, water from Albany, New York, was bottled and marketed around the year 1800.¹⁸ Water from other springs was reportedly bottled in the late eighteenth century and early nineteenth century. According to Chapelle, "Some historians credit a Philadelphia druggist named Elie Maglorie Druand as being the first person to bottle mineral water in 1825, although the evidence is murky."¹⁹ However, Saratoga Springs was the first major water bottling operation in America.

The first major bottled water operation in the United States began in about 1820 with a man named Rev. D. O. Griswold, who began bottling the spring water of Saratoga Springs, New York, which was naturally effervescent. He initially began bottling this water as a curative for dyspepsia, labeling the water "Doctor Clark," but soon it was viewed more as a clean alternative to potentially contaminated city water. Officially, the first mineral water marketed for medicinal use, in 1844 Mt. Vernon Glass Works Company, a manufacturer of dip-mold bottles, moved to Saratoga Springs as a supplier of glass bottles to Saratoga Springs. Soon, by 1856, more than 7 million bottles were being produced annually. A newspaper ad from 1820, tells of one William C. De Forest, agent of D.O. Griswold, who "offers his services to the public as a bottler of the Mineral Waters of Saratoga Springs, having made arrangements for a constant supply of the best English Bottles and Corks, and having the aid of experienced workmen;" even offering to

¹⁸Michael Mascha, *Fine Waters: A Connoisseur's Guide to the World's Most Distinctive Bottled Waters*, (Philadelphia: Quirk Books, 2006), 18.

¹⁹Chapelle, 73.

provide the water "to any part of the continent, on the most reasonable terms."²⁰ Saratoga Springs would soon become one of the largest suppliers of bottled water in the nineteenth century, marketing its water for its health benefits.

The lure of the waters of Saratoga Springs stemmed from its apparent curative properties. According to Chapelle, the first recorded visitor to Saratoga Springs was a gentleman named Sir William Johnson. His leg wound was healed by the spring water. Soon, an inn was built in the 1790s to accommodate the influx of visitors to the famed spring. However a different story appears in a letter to the Lowell Courier in 1851, with the editor of the paper relating a story on the discovery of Saragota Springs. He declared, "Fifty-nine years ago, when this section of the town was a barren spot, containing only here and there a dwelling house, John Tayler Gilman, Governor of New Hampshire, and at the time a member of Congress from that State, while on a hunting excursion in the Summer, discovered the sparkling water gushing from the cleft of a rock in the vicinity. Upon trial the running stream proved to possess medicinal qualities, and thus was the original discovery of the far-famed mineral springs of Saratoga . . . it is to the spring, accidentally discovered by a citizen of New Hampshire in 1792, that Saratoga owes her present prosperous existence."²¹ These two similar accounts both relate that the spring was found to have healing properties, and in the nineteenth century such claims were readily believed and a sure market for the bottled water of Saratoga Springs developed.

The Saratoga Springs had a long history of being popular for its medicinal qualities. In the late eighteenth century, "no springs in America were more highly sought after for their

²⁰ *Woodstock Observer*, August 8, 1820, accessed Dec 1, 2014, America's Historical Newspapers.

²¹ "Discovery of Saratoga Springs," *The Semi-Weekly Eagle*, September 4, 1851, accessed December 1, 2014, America's Historical Newspapers,.

medicinal properties than those of Saratoga Springs, New York,"²² according to Chapelle. Even George Washington visited High Rock Spring (near the town of Saratoga Spring) in 1783. As the reputation of the springs increased, a resort with expensive hotels and entertainment was built at Saratoga Springs. Soon however, the demand for the water by those who could not afford to spend time at the resort created a market for the bottled waters of Saratoga Springs. Some of the water (from Congress Spring, which contained iodine) sold for as high as \$1.75 per pint (over \$10 per pint in today's dollars). By the late nineteenth century, Saratoga Springs water was mass-marketed, as is evident from newspapers from the era, such as an ad for "Saratoga Kissingen Water" in *The North American*, Philadelphia, from September 17, 1892, that claims that Saratoga Spring water is "the ONLY Table Water bottled with its own natural gas just as it flows from the spring."²³ While the medicinal claims of Saratoga Springs would be prohibited by the FDA today, which has set regulations on what kinds of medicinal claims can be made, for the nineteenth century, the bottling of Saratoga Springs water was made possible by the market for health remedies.

There was other publicity for Saratoga Springs in American newspapers in the nineteenth century, mostly touting its medicinal virtues. For example, an article from 1818 entitled "Ballston's Saratoga Springs" says the waters are celebrated "for their medicinal and salubrious character" and visited by thousands every year. The springs "are found in a low piece of ground, extending from Ballston to Saratoga." The article calls for attention by men of science to investigate and draw up a "topographical description of the region," saying that "the sources of these waters, and their remarkable varieties and qualities, are well worthy of investigation." It

²²Chapelle, 59.

²³"Saratoga Kissingen Water," *The North American*, September 17, 1892, American Historical Newspapers.

continues, "We are aware that different persons have undertaken to analyse the water, with a view to discover their medicinal character."²⁴ These calls to investigate the chemical attributes of Saratoga Spring water were possible due to advances in chemistry during the nineteenth century.

One of the first to analyze the chemical nature of the Saratoga Spring waters was a medical doctor named Valentine Seaman. He noted that the spring waters of Saratoga Springs contained elements such as iron, lime, salt, and alkali, which the waters, infused with carbonic acid (carbonation) readily absorbed. According to Chapelle, "Waters from Saratoga Springs have several medicinal properties that were used by physicians in the nineteenth century."²⁵ The waters containing high levels of iron were used successfully to treat anemia, especially in women. While waters containing high concentrations of sulfate and magnesium were used effectively as laxatives. The waters that contained a neutral pH and high concentrations of bicarbonate were used effectively to treat dyspepsia (upset stomachs). Interestingly enough, some of the waters of Saratoga Springs were used to treat goiters because of the prevalence of iodine, something considered a medical miracle at the time. (This was before salt was commonly iodized.)²⁶ The waters of Saratoga Springs vary in chemical composition; this meant that they varied in their abilities to heal different ailments. These remarkable healing qualities of the mineral waters of Saratoga Springs created a substantial market for the water in the nineteenth century. As Chapelle writes, "By 1856, more than [sic] 7 million bottles of Saratoga Springs waters were being produced and sold each year, and they fetched as much as \$1.75 per pint in

²⁴ "Monday, July 27, 1818," *New-York Daily Advertiser*, July 27, 1818, accessed December 1, 2014, American Historical Newspapers.

²⁵Chapelle, 59.

²⁶Chapelle 59.

New York City.”²⁷ This market for medicinal waters was undoubtedly emulated by other bottled water companies.

Another major bottled water company in the nineteenth century was Poland Springs. Poland Spring is located twenty-five miles from Portland, Maine. The story of Poland Springs involves a farmer named Hiram Ricker whose kidney stones were cured after he drank from a spring on his farm in the town of Poland, Maine. The water was marketed as a cure for kidney ailments beginning in 1844, and the Ricker family began bottling and selling the spring water from the family farm. By 1855 ceramic jugs of it were being shipped by wagon to Boston and to the west in wagon trains. An upscale inn was built near the spring, where classy visitors would take steam baths and other water cures.²⁸ Poland Spring is an example of the nature of bottled water in the nineteenth century which was marketed as a curative of various medical ailments, much unlike today.

Poland Springs water was marketed as a medicinal remedy for various ailments throughout the nineteenth century and its healing properties were highly hailed in newspapers and in the general public. For example, an ad in the *Boston Daily Advertiser* from 1894 for “Poland Water” from Poland Springs, Maine, claimed it cured Rheumatism, Indigestion, Gravel, and excess of uric acid.²⁹ An article in the *New York Times* from 1891 for “Poland Water” called it “Nature’s Great Remedy.” It claimed that it “cures all diseases originating from dyspepsia, kidney and liver complaints, and all diseases of the urinary organs.”³⁰ An 1880 add in the New

²⁷Chapelle, 59.

²⁸Royte, 27.

²⁹ “The Annual Sales of Poland Water Exceed the Sales of All the Saratoga Springs Combined,” *Boston Daily Advertiser*, May 9, 1894.

³⁰“Poland Water,” *New York Times*, August 9, 1891, ProQuest Historical Newspapers, accessed November 6, 2014.

York Times for Poland Spring House, a summer resort, touted the health-giving benefits of "Poland Spring water as a cure for kidney and other diseases."³¹ And a *New York Times* article from 1903 entitled "The 'Poland Water Book,'" advertised a book by Hiram Ricker & Sons, the owners of Poland Spring in Maine, which contained "facts about Poland Waters" stating that "many remarkable cures have been recorded, among them Bright's Disease, Albuminuria, Diabetes, Uric Acid Diathesis, Inflammation of Kidneys and Bladder, Fevers and Stomachic Disorders."³² Clearly, Poland Springs water was heavily marketed as a therapeutic cure for numerous ailments in the late nineteenth century, and was a major player in the bottled water industry during that time. This shows that bottled mineral waters from certain springs were generally considered to be medicinal and effective cures for health problems. Such claims would be considered highly dubious today.

Poland Springs was popular in the nineteenth century, but began to wane due to several factors, and was eventually bought by the major food corporation Nestlé. Sales of Poland Spring water slumped due to improved city water with the chlorination of tap water in the early twentieth century, and with the perception of bottled water as being old fashioned. The company declined and was bought by Perrier in 1980, and then by Nestlé in 1992. Nestlé expanded the sales of Poland Spring water and soon began using water from different sources than the original spring. Nestlé lobbied the FDA to allow water drawn from boreholes around the original spring to be labeled as "spring water." These boreholes or wells are located all around the southern Maine. The FDA currently allows water to be labeled as "spring" as long as it comes from an underground source that is hydraulically connected to a natural spring, has substantially the same

³¹"Poland Spring House," *New York Times*, Jun 29, 1880, ProQuest Historical Newspapers.

³²"Poland Water Book," *New York Times*, April 7, 1903, ProQuest Historical Newspapers.

physical properties as the original spring, and the original spring continues to flow.³³ However, groups challenged Nestlé's Poland Spring water as having no connection to a spring at all.

The lawsuit against Nestlé centered around the integrity of the company's bottling and labeling practices of Poland Spring water. According to an article in the *New York Times* dated June 20, 2003, a lawsuit was filed against Nestlé Water North America, saying that Poland Spring bottled water “is little more than tap water that comes from ground water sources surrounded by ‘asphalt parking lots.’” The lawsuit claimed that the original Poland Springs had not flowed since 1967, and that Nestlé “draws its water from a site 30 miles away from the original Poland Spring and often uses ground water and a spring that is near the site of a former garbage dump”³⁴ among other things. According to Royte, the class-action suit “was brought by several small springwater bottling companies in 2003 . . . to get Nestle to either abandon its boreholes or to change its Poland Spring labels, which did not list spring sources.”³⁵ Nestlé settled the lawsuit in 2004, agreeing to pay about eleven million dollars in discounts and giveaways to consumers and to make various charitable contributions, but was not forced to change its labeling.³⁶ The question of the integrity and honesty of modern corporations like Nestlé, as they market bottled waters, probably has much to do with the corporate culture of profit margins being the driving factor in their operations. With the corporate muscle of companies like Nestlé, they can either effectively circumvent regulations or lobby the FDA to implement favorable regulations, and the quality of the products that they label as such things as “spring water” suffers.

³³Royte, 28.

³⁴Sherri Day, “Suite Disputes Integrity of Poland Spring Water,” *The New York Times*, June 20, 2003, ProQuest Historical Newspapers.

³⁵Royte, 28.

³⁶Royte, 28.

The third major bottled water company in the nineteenth century was “Mountain Valley Spring water, from Hot Springs, Arkansas, which began bottling operations in 1871,”³⁷ and there existed a plethora of smaller bottling operations in nineteenth century. A perusal of American newspapers of that time reveals a significant number of water bottling operations claiming their water possessed healing virtues. Numerous articles from the nineteenth century call for scientific investigation of the healing properties for mineral waters, and numerous advertisements claim healing benefits from the mineral waters. The market was so vibrant for healing waters that often they were imported from across the Atlantic to America for those who were able to afford them.

For example, an 1879 article from the *New York Times* discusses “table water,” this being bottled mineral water which helps with digestion and to help avoid “typhoid fever and other infectious diseases frequently resulting from drinking impure water.”³⁸ In this instance the water is the water from Apollinaris Spring, in the Valley of Ahr, Rhenish Prussia. Furthermore, an 1874 article from the *New York Times*³⁹ discusses the virtues of Vichy Water bottled and imported to the United States from France. The article states that that Vichy Water is a unique source of cures for almost whatever ailment a man could have, stating “Vichy Water has effected permanent cures, where all other treatment was abortive. Operating as an alterative, resolvent, and diuretic, without being aperient or diaphoretic, it affects, most perceptibly, the kidneys, increasing the quantity of their secretions, and altering its quality, so as to render it alkaline; and while it has no equal in chronic disorders of the liver, spleen, and the digestive organs, it

³⁷Chapelle, 15.

³⁸ “NATURAL MINERAL WATER: From Gilignani's Messenger,” *The New York Times*, Aug 10, 1879, ProQuest Historical Newspapers.

³⁹ “Genuine Vichy Water,” *The New York Times*, Mar 22, 1874, ProQuest Historical Newspapers.

produces miraculous effects in chronic cases of gravel, and calculi emanating from uric acid; also gout, rheumatism, heart disease, female complaints, malarial maladies, albuminuria (or Bright's disease), diabetes, &c." It contends that "these merits are derived only from the natural waters, direct from the Springs, and cannot be expected from artificial preparations, no matter where concocted, or how designated." It reassures the consumer that the medicinal effects of the water are retained during the bottling and transport of the water over long distances. The fact that the article says that only genuine Vichy water has the healing properties that it has and that these properties cannot be replicated by artificial concoctions makes one wonder if even today medical science is unable to reproduce fully the healing benefits of certain mineral waters, and if we have lost something valuable with the decline in the availability of these natural mineral waters.

Another example of imported medicinal water lies in an ad in *The Daily Picayune*, New Orleans, from 1896: "Natural Aperient water" was bottled by a company called "Apenta" from Uj Hunyada Springs in Buda Pest, Hungary and sold for 10 and 25 cents. It calls attention to the fact that Hungarian "Bitter Water Springs" should be "desirable for the medical profession" and that "these Springs [are] carried on in a scientific manner, and not merely on commercial lines."⁴⁰ This market for imported mineral waters shows that in the nineteenth century there was a widely held belief in America that mineral waters had true healing virtues.

Healing properties attributed also to local and domestic waters became an impetus to their being bottled and marketed. For example, 1897 article in *the Sentinel*, a Waukesha, Wisconsin newspaper entitled "Water to be Bottled," says that "it has been definitely decided to engage extensively in the bottling of water for the mineral water trade." The article says that a spring and

⁴⁰ "Apenta," *The Daily Picayune*, June 16, 1896, Nineteenth-Century U.S. Newspapers.

twenty-four acres of land were purchased and it was proposed that the water would be “conducted in pipes” to a bottling and distribution plant along a railroad.⁴¹ And an 1883 article in *The Daily News* of Denver, claims that “Medicinal Virtues Abound in the Denver Artesian Water.” It states that “Typhoid and Gastric Fevers, Kidney Diseases, Cholera Morbus and Other Ailments cured.”⁴² According to the article, a number of physicians were interviewed whose general consensus is that the artesian water found in Denver was beneficial if for no other reason than that it was pure of all contaminants. The speculation that the mineral content of the water may have medicinal properties was also attested by some of them. It appears that the general consensus among the medical community in the nineteenth century was that certain mineral waters were truly effective in curing various ailments, something probably less so today.

Another example of a springs containing highly desirable medicinal water is a printed correspondence of the *New York Herald*, from 1843. The letter tells of Avon springs, where some visitors come for the “healing waters, in the hope of early restoration. The sanative qualities of the New Bath Spring are fast winning their way to enviable celebrity.” The letter states that Reuben K. Hickox, Esq., “discovered this salubrious fount in 1834; the waters possess ingredients common to other springs in the neighborhood, but in different combination.” The author claims to have “visited the celebrated German spring, also Sharon, Saratoga, and Warm, White, and Red Sulphur Springs in Virginia, Harrow, and other watering places in England, but have never drank at a fountain that so highly impressed me with its value as an active and powerful agent in the cure of disease, as the New Bath Spring of Avon.”⁴³ This is a clear example

⁴¹ “Water to be Bottled,” *The Sentinel*, May 9, 1897, Nineteenth Century U.S. Newspapers.

⁴² “Medicinal Virtues,” *The Daily News*, September 6, 1883, Nineteenth Century U.S. Newspapers.

⁴³ “Avon Springs: (Correspondence of the Herald),” *The New York Herald*, August 12, 1843, Nineteenth-Century

of how Americans in the nineteenth century readily accepted the medicinal claims of certain springs, which would be a major source for the market demand of bottled spring waters.

Other examples of medicinal properties attributed to spring water abound from the nineteenth century. For instance an 1892 article in *The Galveston Daily News*, entitled “Virtue in the Water: Galveston Artesian Wells Said to be Medicinal,” states that after an artesian well was developed in Galveston, though the water was held to be “a little off” in taste, it was held by many to have “valuable medicinal qualities.” Hundreds of Galveston residents, according to the article, “have been drinking it since to cure a variety of physical disorders, and while, as a rule, they have been regarded as mild cranks, not a few physicians join them in attributing great virtue to the water.” The article states that the professional opinion of one physician is that it “possesses rare virtues in dyspepsia.” The author says a member of his family was cured of “catarrh of the stomach” and he was cured of dyspepsia, and he calls for medical and scientific investigation of the water, especially in testing its cure of dyspepsia. He mentions that “in Saratoga a great many citizens consider the different springs as humbugs to attract fools, but the facts remain that 70,000 strangers go to Saratoga every summer and the great weight of testimony is in favor of the water.”⁴⁴ These articles demonstrate how the medicinal quality of certain mineral waters was generally held to be true in the nineteenth century, being perhaps the primary reason why these waters were often bottled and sold.

Another article from 1873 entitled "Almshouse Soda-Water" discusses a running spring of water found to contain medicinal properties, including natural carbonation and other minerals

U.S. Newspapers.

⁴⁴ “Virtue in the Water: Galveston Artesian Wells Said to be Medicinal,” *The Galveston Daily News*, March 3, 1892, Nineteenth-Century U.S. Newspapers.

such as "sulphate of lime, chloride of sodium, [and] chloride of potassium."⁴⁵ And a brief news snippet from the Rocky Mountain News, 1891, says "Sulpho-salix is a natural mineral water, bottled at Excelsior Springs, Mo,"⁴⁶ for its medicinal value. There were numerous small bottling operations by 1900 that catered to the market not only for healing water but also simply for clean drinking water in a time when clean drinking water was often hard to come by. Generally, both of these characteristics of mineral spring water were what created the market demand for them in the nineteenth century.

A modern and local story about the history of bottled spring water is told by the Pueblo Chieftain, in the "Local News" section of their paper from October, 27 2014.⁴⁷ The article on page 5A of the paper is entitled "Thicker than Water: Five Generations operate Clark Spring Water for 135 years," tells the history of the Clark family business, currently run by Eric Clark, and their artesian well, where 135 years ago Silas Clark was looking to get rich by mining for gold, but decided to drill for oil instead. According to the article, "When the drill hit 1,425 feet, what bubbled to the surface wasn't crude, but clear, clean water, and in 1879 Clark Spring Water Company was born." The company sold the water as drinking water which they delivered to businesses and residents throughout Pueblo. A bathhouse was built for people to take the waters and bathe and get treatments. The 2014 article tells of a Pueblo Chieftain article from 1901 which mentions plans to build the bathhouse and which stated: "Already the Clark waters have a reputation all over country [sic] for their curative properties and, with the new sanitarium, they will undoubtedly attract many people to Pueblo in search of health." Also according to the

⁴⁵ "Board of Health: Almshouse Soda-Water," *Daily Evening Bulletin*, February 24, 1873, Nineteenth-Century U.S. Newspapers.

⁴⁶ *Rocky Mountain News*, April 20, 1891, Nineteenth-Century U.S. Newspapers.

⁴⁷ Jeff Tucker, "Thicker Than Water," *The Pueblo Chieftain*, October 27, 2014.

article, the Clark artesian water won second place for best tasting water at the 1905 St. Louis World's Fair. By 1960 Eric Clark's father modernized and expanded the water plant, and the company still delivers fresh clean water to residents and businesses today.

The bottled water industry today prefers spring water with low mineral content, and most bottled spring water today comes from young unmineralized waters such as that from the Sierra Nevada. Many springs of the Sierra Nevada mountain range, which receives ample precipitation from the Pacific Ocean air, are bottled as highly prized spring water, because of their supposed purity, but not because of their mineral content or curative effects. However, in the nineteenth century, the highly mineralized waters from Saratoga Springs were the most popular in America. All told, the bottling natural mineral waters for therapeutic purposes reached its zenith in the late nineteenth century, when artificially produced “soda water” began to displace it the turn of the century. Currently mineral water has become a drink primarily for the wealthy as a curative⁴⁸

In 1913 the first use of chlorination for the disinfecting of municipal water supplies began the demise of the bottled water industry in America. Prior to that time, municipal water was susceptible to carrying disease-causing bacteria. Outbreaks of typhoid fever and cholera, diseases caused by water-borne bacteria (*Samonella typhia* and *Vibrio cholorae*, respectively) occurred during the nineteenth century. Engineers began to experiment with adding chlorine to municipal water supplies, because chlorine was effective in killing or deactivating the dangerous bacteria. In 1913, Philadelphia was the first city to install a permanent water treatment plant and before too long most major cities were chlorinating their water.⁴⁹ By providing safe drinking water from the tap, chlorination of municipal water largely eliminated the demand for bottled water in

⁴⁸Mascha, 18.

⁴⁹Chapelle, 3.

America, virtually wiping out the industry. Most local bottled water providers went out of business, the big companies like Poland Spring, Saratoga Springs, and Mountain Valley reduced their operations significantly. However, some businesses that could or would not invest in decent plumbing remained a market for bottled water after the advent of chlorination. Bottled water companies would supply these businesses with fresh drinking water. This is where the expression “gathering around the watercooler” came from.⁵⁰ As the perception of bottled medicinal water declined and the new and modern method of disinfecting municipal water was developed, the bottled water industry waned, and the market began to shift toward the purity of the product versus the therapeutic qualities.

The bottled water company that paved the way for the modern bottled water industry is Perrier. The story of Perrier begins with a spring that was used by an ancient renowned general, Hannibal Barca with the Carthaginian army, who on his way to attack Rome in the third century BC, rested with his elephants and drank from a spring that had naturally carbonated water. This water came from cracks in surface rocks that fed a pool. The underground aquifers that fed the spring contained both naturally carbonated water from a volcanic aquifer as well as a limestone aquifer, and a third source from melted snow, producing unique properties.

This spring that Hannibal and his elephant drank from is alleged to be the same spring from which Perrier water is drawn. According to Chapelle, “in 1884, a Dr. Louis Perrier leased the spring and began to market its water for drinking.”⁵¹ According to Royte, “A French physician named Louis-Eugène Perrier, who specialized in mineral water treatments, bought it

⁵⁰Chapelle, 5.

⁵¹Chapelle, 13

from a local businessman in 1898.⁵² Dr. Perrier was looking for financial backing when a wealthy Englishman named St. John Harmsworth had an auto accident near Nimes and went to the hospital where he drank water from the spring whereupon he recovered. He immediately toured the spring and was enthralled. He first leased, and then purchased the spring from Dr. Perrier. Harmsworth saw the economic potential of the spring, and began to market the water in bottles to sell to the British Empire. By 1908 five million bottles of Perrier were selling every year.⁵³ Eighteen million bottles were being sold per year by 1930.⁵⁴ Harmsworth died in 1933 when the company was selling nineteen million bottles per year and the company was taken over by British shareholders. It was sold to a Paris broker named Gustav Levin after World War II who modernized the bottling operation. Levin would set the company up for even greater expansion.

By the 1970s with the renewed concern over the environment and the purity of water, as well as bottled water's marketability as an alternative to soft drinks, new invigoration to the bottled water industry began. Levin launched a five million dollar marketing campaign in America in 1977 targeting yuppies (young, upwardly-mobile professionals), which paid off handsomely. The new clientèle, that is yuppies, began sipping the “cool, sophisticated, European, and expensive”⁵⁵ drink called Perrier. The rest of the bottled water industry followed suit.

Because New York City gets its water from the Catskill Mountains via aqueducts, a relatively pristine source, and the city water officials regularly test it for organic or chemical contaminants, it is some of the best tap water in the world. Despite this, bottled water

⁵²Royte, 29.

⁵³Royte, 30.

⁵⁴Chapelle, 15.

⁵⁵Chapelle 17.

consumption is some of the highest in New York City. This is due to Levin's clever marketing strategy, which “began in the 1970's, when Upper East Side sophisticates competed with each other for just that right air of elegance, sophistication, and conspicuous consumption,”⁵⁶ according to Chapelle. When Perrier marketed its water to yuppies, they soon “began sipping Perrier, Poland Spring, and Evian . . . drinking from small, individual serving bottles” which “was a novelty in the United States” and “gave an aura of elegance and epicurean sophistication that suited yuppie tastes”⁵⁷ With Perrier's success in marketing its product to urban sophisticates, the bottled water industry in America received a new impetus and invigoration. This new emphasis on purity of water contrasts with the old nineteenth century emphasis on the medicinal qualities of the water.

The decline in bottled water in the first part of the twentieth century was due to the declining perception that mineral waters were in fact medicinal, and due to the invention of chlorinated tap water. As medical science advanced, cures for ailments no longer relied on medicinal waters and as the perceived benefits of medicinal water declined. As a result, bottled water became unfashionable, and this led to a major reduction in the bottled water industry throughout the early twentieth century. However, by the 1970s, the market for bottled water increased with the consumption of Perrier and Evian from France by yuppies, and so bottled water became fashionable again. Before 1960 most bottled water that was sold came in five-gallon glass bottles. Soon, however, plastics were used for bottled water. In the nineteenth century, water was packaged in glass or ceramic containers with stoppers that were made out of either cork or porcelain. Today the most common method of bottling water is in strong and

⁵⁶Chapelle, 6.

⁵⁷Chapelle, 7.

lightweight plastic bottles made out of Polyethylene terephthalate (PET), which has been around since the 1980s. PET is almost ubiquitous in the bottled water industry, because it is light-weight and strong. Today, there is much controversy surrounding the environmental impact of the bottled water industry and that fact that bottled water is seen as a wasteful and unnecessary use of resources.

In conclusion, the American bottled water industry had its genesis in the early nineteenth century with the bottling of mineral spring waters that had medicinal virtues, as well as the use of spring water as an alternative to the often polluted municipal water supply. The medicinal waters had actual scientifically demonstrable therapeutic qualities, although all of their medicinal properties may not be known or understood by modern science, nor reproducible artificially. These waters were known to Indians in the nineteenth century and were also used by them for their medicinal character. The water from springs like Saratoga Springs in New York, and Poland Springs in Maine, became widely marketed and distributed, aided by railroads, and was a major industry player in the nineteenth century. The market for bottled water was mostly driven by the medicinal claims of the water, as well as the need for a clean alternative to potentially contaminated municipal water. The bottled water industry suffered a great decline after the chlorination of municipal water in 1913, but rebounded in the 1970s with Perrier's marketing strategy. The new emphasis on bottled water is on its supposed superiority to tap water due to its purity, as well as the image it evokes as a healthy and sophisticated option.

By the twentieth century large corporations like Nestlé have largely dominated the market, selling the water as pure and healthier alternative to tap water. Bottled water also got a boost in the twentieth century as an alternative to soda pop. Spring water has become known as

the healthy alternative to other drinks, even though it is no longer marketed for its medicinal uses like its predecessors of the nineteenth century. One can still purchase medicinal waters online, but they are expensive and hard to find. The story of bottled water from the nineteenth century to today displays the changes in the cultural perception of bottled water, from a source of healing virtues and clean drinking water to a pure and healthy alternative to municipal water and soft drinks. What the future holds for the bottled water industry will likely be determined by the future cultural perception of bottled water largely driven by the marketing strategies of bottled water companies, as well as the outcome of the environmental movement and its impact on the bottled water industry. Perhaps many lessons can be learned from the history of bottled water in America, one of which might be that we have largely lost the benefits of the medicinal qualities of certain mineral spring waters, and have embraced instead a consumer culture driven by corporate marketing, which actually determines our perceptions about bottled water. Whatever the case may be, bottled water will likely continue to be a major part of the American culture for years to come.

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