

2007

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Bly, E. "Just what the doctor ordered: a medical history of soft drinks". The Proceedings of the 16th Annual History of Medicine Days, March 30th and 31st, 2007 Health Sciences Centre, Calgary, AB.

<http://hdl.handle.net/1880/47535>

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# **JUST WHAT THE DOCTOR ORDERED: A MEDICAL HISTORY OF SOFT DRINKS**

by

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## **Abstract**

Many of the major soft drinks started out as medicinal beverages created to ease all manner of disorders from Bright's disease to an excess of "nerves."

Beginning in ancient times, people have sought out mineral springs as a source of healing. Both the mineral content and the heat of these waters were thought to restore health and cure numerous disorders. Naturally occurring carbonated waters were attributed with additional healing powers due to their effervescent qualities. With the advent of bottling techniques, the altruistic entrepreneur could, for a small price, bring these healing waters to those too ill or too distant to make the trip. Artificial carbonation allowed the creation of medicinal waters without the need of cumbersome, fixed location mineral springs.

Meanwhile, the "small beers" (root beer, spruce beer and birch beer) of colonial America supplied the working people with less alcoholic drinks either for a pleasant beverage or a health-giving spring tonic for cleansing the body and improving health.

Doctors and pharmacists combined the availability of artificial carbonation with herbs, roots and other substances to provide cures to the masses suffering from the plague of "nervous" disorders of the 18th century. Fueled by prohibition (and the temperance movement), these "soft" drinks continued to increase in popularity until achieving their current status as cultural icons.

The history of the soft drink is a history of folk remedies, doctors' cures and pharmacists' concoctions. It bubbles with legend, mystery and zest, a history filled with exotic herbs, secret ingredients and outrageous claims of healing.

A history of soft drinks begins with a history of water. Since ancient times, people have sought out particular waters for their healing properties. Support for a belief in water as a healing substance is found in our mythology and legends, as well as in ancient writings. The Fountain of Youth, for example, had the power to cure the body of all ills, including the effects of aging. The Bible contains the following account of healing waters:

Now there is at Jerusalem by the sheep market a pool, which is called in the Hebrew tongue Bethesda, having five porches. In these lay a great multitude of impotent folk, of blind, halt, withered, waiting for the moving of the water.

For an angel went down at a certain season into the pool, and troubled the water: whosoever then first after the troubling of the water stepped in was made whole of whatsoever disease he had. (John 5:2-4, KJV)

While this account ascribes the healing powers of the water to the passage of an angel, it demonstrates a relationship between specific physical (and possibly chemical) characteristics in the water and a cure for infirmity.

Hippocrates described various types of naturally occurring waters and their use in the treatment of constitutional problems. He describes, for example, "...those [waters] which have their fountains in rocks... must necessarily be hard, or come from a soil which produces thermal waters, such as those having iron, copper, silver, gold, sulphur, alum, bitumen, or nitre (soda) in them" (Hippocrates, "On Airs, Waters, and Places"). Having described the waters, he later indicates which people or problems will benefit from drinking each particular kind of water. In the case of our "hard" water mentioned earlier, Hippocrates said, "...those persons whose bellies are soft, loose, and pituitous, should choose the hardest, those kinds that are most crude, and the saltiest, for thus will they be most readily dried up; for such waters as are adapted for boiling, and are of a very solvent nature, naturally loosen readily and melt down the bowels; but such as are intractable, hard, and by no means proper for boiling, these rather bind and dry up the bowels" (*Ibid*).

In more recent times, doctors began to investigate the purported healing properties of natural springs. One area particularly abundant in natural springs was Saratoga Springs, New York. Of the springs in this area, one researcher writes: "Bottling of the mineral water started in 1823, based on demand for carbonated water in soda fountains. In the 1830s, several medical doctors arrived in the area and promoted the therapeutic use of the mineral waters. Dr. John H. Steele, a physician and surgeon and also a chemist, geologist and scientist, gained valuable experience on the medical use of the mineral waters during his stay at Saratoga Springs. He published his findings in a book, *An Analysis of the Mineral Waters of Saratoga and Ballston with Practical Remarks on their Medicinal Properties*, published in 1831. Dr. Richard Allen, a resident and active medical practitioner of Saratoga Springs, published his analysis of the waters in 1844 under the title, *Historical, Chemical and Therapeutical Analysis of the Principal Mineral*

*Foundations of Saratoga Springs.* Some of the physicians operated sanatoriums where the use of the mineral waters was stressed. This was the time that a strong interest was developed in America for the curative powers of the mineral waters, derived from experience in Europe and the faith of the Indians. Thus, it became the custom among the affluent of taking an annual vacation to a spa, including Saratoga Springs” (Lund 1993, 4-5).

Waters with noticeable levels of carbon dioxide were often attributed with additional healing properties due to their effervescent nature. Before the discovery of carbon dioxide, these waters were thought to contain an intangible quality called the spiritus mineralis (spirit of the mineral waters) or spiritus sylvestris (wild spirit) (Witzel 1998, 15).

In 1767, Dr. Joseph Priestly, a clergyman and scientist, demonstrated the ability to artificially carbonate water by placing a dish of water over the fermenting vats of a nearby brewery. Upon tasting the water, he noticed a quality to the water that had not been there before, a sharpness in taste similar to the taste of “spa waters” or water from mineral springs (Tchudi 1985, 7). He theorized that the gas coming off the fermenting brew had entered the water and transformed it. Although he was not the first to artificially carbonate water, he is known as the father of the carbonated water industry for outlining certain scientific aspects of the process necessary to produce carbonated water in usable quantities. For example, he used sulfuric acid and chalk to produce greater amounts of carbon dioxide than the fermentation process. He also demonstrated that the removal of atmospheric air was necessary to achieve sufficient levels of carbonation. Compressing the carbon dioxide by means of a pump and agitating the waters to improve absorption both further improved the process (Witzel 1998, 17-18). Priestly’s studies of “fixed air,” as it was called at the time, created the possibility of bringing the healing waters to the suffering without the need for a trip to natural springs. Enterprising (and health conscious) individuals would continue to improve upon Priestly’s design. Thomas Henry in 1764, Dr. John Mervin Nooth in 1774 and Antoine Lavoisier in 1789 made advances that led to more efficient and practical machines for carbonating water. All along, these waters were produced for medicinal use. Thomas Henry claimed his waters to be a cure for “fever, scurvy, dysentery, bilious vomiting and other stomach disorders” (Witzel 1998, 18).

Although machines now existed to produce carbonated waters, no one had yet developed an adequate bottling system. Carbonated waters were produced and consumed on the spot. A Swiss jeweler and amateur scientist, Johann Jacob Schweppe, fascinated with the work of Joseph Priestly, began carbonating water in 1787. He quickly realized the existence of a local demand for carbonated water. Schweppe created a unique apparatus (called the Geneva apparatus or the Geneva method) for producing large quantities of carbonated water based on Joseph Priestly’s work. Using sulfuric acid and calcium

carbonate (chalk), Scheppe was able to bottle large amounts of his healing waters and sell them for medicinal use. He recognized the limitations of the existing methods for distributing carbonated water and designed the first bottle specifically for carbonated water. The bottle's ovoid shape forced the product to be stored horizontally, a feature that kept the corks constantly moist and ensured a proper seal. The egg shape also produced a stronger bottle, better able to withstand the internal expansive forces of the carbonated water (Witzel 1998, 22-23). The first recorded use of the term "soda water" appeared in a paper written by Dr. Tiberius Cavallo in which he described Scheppe's creation (Witzel 1998, 27). Scheppe did well in business and his innovative bottle design added impetus to the growing industry of carbonated water. To this day, the Cadbury-Scheppe's company still bears his name, a name that is closely associated with the soft drink industry.

Around the same time, the people of colonial America were making their own carbonated beverages using fermentation rather than direct carbonation. "Small beers" were drinks created from materials on hand, usually local plants, sweetened with honey, sugar or molasses, allowed to ferment for a short time then bottled. These drinks contained relatively small amounts of alcohol (Cresswell 1998, 2). Some examples of these drinks include birch beer, spruce beer and root beer. Recipes varied from farm to farm and, while some individuals seemed to desire a pleasant drink, others used similar methods to create a healing "tonic" (Tchudi 1985, 14-15). My grandmother recalls that the root beer created by her grandmother was not something one drank on purpose (Ardath Bly, as quoted by David Bly, December 2006), indicating that it was not consumed for its taste, but rather for its healing properties.

A pharmacist by the name of Charles Hires would bring a traditional small beer into the modern soft drink era. By 1876, Hires created a recipe for root beer using 25 powdered herbs. He sold these packets along with instructions for brewing the drink at home (Tchudi 1985, 22). In 1880, he produced a liquid extract of his herbal combination. The temperance movement helped increase the popularity of drinks such as Hires' root beer, and people referred to such drinks as "temperance beverages" (Witzel 1998, 43). In 1893, pre-made Hires Root Beer was bottled and sold, eliminating the chore of creating the beverage at home.

As these various drinks evolved, doctors, druggists and enterprising businessmen began to prescribe them for numerous ailments, many of which related to the emerging phenomenon of "nervous" disorders. As one historian describes,

A new body appeared in Britain in the late eighteenth century, one marked by its susceptibility to hysteria and a host of related nervous conditions, variously called hypochondria, spleen, vapours, lowness of spirits, melancholia, bile, excess sensibility, or, simply, nerves....As a consequence, nervous disorders such as hysteria became the leading category of illness, accounting for two-thirds

of all disease, and the new middle-class nervous body was viewed with considerable alarm (Logan 1997, 1).

Carbonated drinks were often viewed as a treatment for many of these “nervous” conditions. Moxie Nerve Food, a carbonated drink created by Dr. Augustin Thompson, claimed to “be the only harmless nerve food known that can recover brain and nervous exhaustion; loss of manhood, imbecility and helplessness. It has recovered paralysis, softening of the brain, locomotor ataxia, and insanity when caused by nervous exhaustion. It gives durable solid strength, makes you eat voraciously; takes away the tired, sleepy, listless feeling like magic, removes fatigue from mental and physical overwork at once, will not interfere with action of vegetable medicines” (Tchudi 1985, 41). Dr. Thompson also used the establishment of medicine to give credibility to his creation. In an 1899 newspaper ad, he states “...Nothing else will help restore your shattered nerves as quickly as will Moxie....Moxie was discovered by a brother physician of large practice, extending over many years. It is therefore a scientific, pure, safe, and enjoyable preparation” (Witzel 1998, 53).

Advances in carbonation led to the establishment of soda fountains in drug stores and druggists began to sell carbonated water mixed with medicinal substances and flavours (Tchudi 1985, 15).

One such druggist was Charles Alderton in Waco, Texas. In 1885, Alderton created a drink from a combination of flavours. He showed it to his employer, Wade Morrison, who liked it. They began serving the drink and the “Waco” became popular with the customers of the store. Wade renamed the drink “Dr. Pepper” and began to market it more widely (Witzel 1998, 48). A newspaper ad from 1900 describes Dr. Pepper as “delightfully refreshing, healthful and invigorating.” The ad then claims that Dr. Pepper “aids digestion and restores vim vigor & vitality” (Witzel 1998, 60).

In the same year, Dr. John Styth Pemberton created what would later be called Coca-Cola. A physician at the age of 19, Pemberton turned his attention to the healing properties of plant extracts and became a pharmacist. Pemberton mixed into wine the extracts of the kola nut and the coca leaf along with other ingredients. His aim was to create a cure for headaches and “nervousness.” With prohibition coming into effect that year, he switched from a wine-based drink to a sweetened syrup he could mix with carbonated water. He called his creation Coca-Cola. Pemberton was unable to make much profit from his drink and quickly sold his company. We get a glimpse into his state of affairs at the time when we learn he then sold the company again. His second buyers, however, were soon disappointed to learn the rights to the company already belonged to another (Witzel 1998, 74-85). Coca Cola ads describe it as the “ideal brain tonic...specific for headache” and claim it “relieves mental and physical exhaustion” (Witzel 1998, 77). Another ad

prescribes it to “Students and all brain workers. Take one glass Coca-Cola at eight to keep the brain clear and mind active until eleven” (Nostalgiaville. <http://www.gono.com/museum2003/cocacola/c686.jpg>).

Another enduring soft drink with roots in medicine is Pepsi-Cola, created by Caleb Bradham, a pharmacist, in 1898 (Tchudi 1985, 37-38). Again containing kola nut extract, Caleb likely named his drink after one of the ingredients in his original formula: pepsin, a digestive enzyme (Witzel 1998, 100).

In Canada, another pharmacist would revolutionize the soft drink industry. John McLaughlin started a bottling plant in Toronto in 1890 to supply a need for carbonated water. He is credited with making significant improvements in mass bottling techniques that extended to the soft drink industry as a whole. In 1905, McLaughlin created his own ginger ale with widespread success. Prohibition further increased sales of Canada Dry as ginger ale was often used to mask the unpleasant taste of homemade liquors (Witzel 1998, 68). Canada Dry advertisements claimed it was “dry, not filling. It keeps growing youngsters mentally alert, physically active, perks ‘em up in twelve seconds flat. Will not disturb mealtime schedules, it’s so quickly, easily digested” (Witzel 1998, 69). Another advertisement tells consumers that the drink is “As wholesome at bedtime as it is at noon” and lists the following claims: “It aids digestion...soothes and refreshes inwardly...supplies quick energy...picks you up.”

(Notalgiaville. <http://www.gono.com/museum2003/museum%20collect%20info/canadadry/canada4.jpg>)

The history of the soft drink is a history of folk remedies, doctors’ cures and pharmacists’ concoctions. It bubbles with legend, mystery and zest, a history filled with exotic herbs, secret ingredients and outrageous claims of healing. Many of these miraculous drinks have survived to our day, while others are lost in the archives of soft drink history. New soft drinks are created and marketed to the masses. Doctors and concerned health consumers today decry the soft drink as a scourge, a vice leading to obesity and osteoporosis, unaware that the same soft drink was once a medicinal tonic, a tasty prescription for a variety of ailments.

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