

Medicine in Stamps

Harvey Washington Wiley (1844-1930): champion of the Pure Food and Drugs Act

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A casual glimpse at the bibliography of Harvey Washington Wiley accurately portrays him as a muck-raker. The titles he authored, such as *The History of a Crime Against the Food Law*, *Swindled Getting Slim*, and *Foods and their Adulteration*, paint a picture of Wiley the food activist, father of the Pure Food and Drugs Act. For over fifty years, he applied his talents as physician, chemist, writer and public speaker to campaign against food and drug adulteration.

THE BIRTH OF AN EPICURE Wiley's unmitigated quest for pure food was intertwined with his personal life from the beginning. Born in 1844 in a humble Indiana log cabin, he was the son of a farmer and spent his early years planting and harvesting crops. As a child, he assisted with the processing of harvested corn and grains, and the tapping of maple trees to prepare syrup and sugar. These activities foreshadowed his later involvement in the food industry. He also spent hours in the school library. At this library, Wiley was introduced to chemistry, a subject that was to become his segue into the food industry as well as a lifelong passion.

WILEY GOES TO WASHINGTON After graduating from Indiana Medical College in 1871, Wiley opted to teach the sciences in a high school instead of becoming a general practitioner. As his teaching experiences grew, he made his way to Purdue where he was named professor of chemistry. Through his research with sorghum cane, he became one of the leading sugar chemists in the country. In a history-altering moment in 1883, Wiley was appointed the Chief Chemist at the Department of Agriculture in Washington DC. In this position, he had three primary projects: research in sugar chemistry, focusing on the extraction of sugar from sugar cane and sugar beets; improvement of agricultural chemical analysis; and most importantly, the campaign against the adulteration of foods and medications.

One of Wiley's many accomplishments as Chief Chemist was the creation of a "Poison Squad" in 1902, a group of 20 healthy men who were chosen to eat a diet of suspect foods to determine their effects. These foods contained chemical dyes and preservatives, most famously, boric acid, the effects of which were not known at the time. "Old Borax," was the newspapers' nickname for Wiley. He administered borax to his subjects in the form of capsules, then monitored their health and systematically performed chemical analyses on their stool and urine. After a two-year study, a verdict was reached: borax, as a food preservative, was harmful to one's health.

His articulation in both his writing and public speaking coupled with an almost epicurean desire for pure food guided Wiley through battle after battle for the improvement of the food industry. In one of his more jovial publications, a New York Times article, he wrote:

Those scientists who maintain that the future holds the possibility of food administered in a condensed form in capsules are, if they attempt the practice of their theory, rushing wildly either to the insane asylum or the sepulchre.

With such literate wit and a talent for chemical analysis, Wiley revealed the flaws of the food industry, finding fault with meat storage, saccharin, caffeine, gelatin production, honey, whisky, and much more.

Wiley's meticulousness as a chemist helped his cause as well. His book, *Foods and their Adulteration*, contained the language of a scientist turned gourmand as he scrutinised the origin, production, and chemical analysis of every food imaginable with chapters such as "Slaughter and Preparation of Carcasses," "Horseradish, Jerusalem Artichoke, and Kale," and "Food Value of Candy." In his follow-up book, appropriately titled, *Beverages and their Adulteration*, he wrote a lovingly detailed 95-page chapter analysing water, as thorough as the DSM-IV in its description and categorisation of sources of water, filtration methods of water, water as a carrier of disease, and beyond.



MAKING MEDICATIONS LEGITIMATE Although Wiley's primary interest was in food purity, he realised that drug adulteration was also a rampant issue. In an era when "medications" would contain up to 80% alcohol, "soothing syrups" for crying babies would contain morphine and cocaine, and advertisers claimed that their remedies could cure anything from cancer to deafness, Wiley argued for reform. He sought to standardise the drug industry by proposing that physicians alone should prescribe a standard set of medications, established by the United States Pharmacopoeia or the National Formulary.

Many medications came under scrutiny when the Bureau of Chemistry established a drug laboratory in 1903 to analyse the purity of medications and the types of chemicals used as "cheapeners" to lower production costs. Investigations of falsely advertised medications were initiated, such as "Liquozone," with its claim of curing asthma, anaemia, bowel troubles, consumption, cancer, dysentery, dandruff, erysipelas, gallstones, goitre, gout, malaria, rheumatism, tuberculosis, ulcers, and more. Liquozone was, of course, fraudulent, having a chemical composition of 0.9% sulphuric acid, 0.3% sulphurous acid, and 98.8% water. Wiley proposed that medications should have a standard set of names rather than catchy titles, and that the names and quantities of their chemical composition be printed on the label.

THE POLITICS OF FOOD AND DRUGS Armed with the support of public sentiment and the results of his poison-squad studies, Wiley was the central figure in the fight for the passage of the Pure Food and Drugs Act. On June 30, 1906, President Theodore Roosevelt signed the bill. A meat inspection bill was signed as well, no doubt with help from Upton Sinclair's novel, *The Jungle*, which shone a light on the horrors of the meat-packing industry. The passage of these bills was a great initial victory for Wiley, but the controversy did not abate, as food manufacturers as well as appointed officials fought fiercely to modify or repeal the law. In 1912, he resigned from his government post and abandoned the Republican Party as a result of his continued disagreement with President Roosevelt. With the acceptance of a less controversial post on the staff of Good Housekeeping magazine, Wiley devoted the later years of his life to his primary loves of public speaking and writing on food and drug issues.

THE PEACEFUL YEARS In 1911, 67-year-old Wiley finally found love and married his young bride, Anna Kelton. It was a testament to his devotion to food purity that he combined his honeymoon with his testimony in the infamous Coca-Cola trial. The federal government had filed a libel suit against Coca-Cola under the Pure Food and Drugs Act. They accused the product of containing artificial colouring and flavouring. They argued that its name was misleading because it contained neither cocaine nor cola. They also noted that it contained caffeine, a

chemical that Wiley had previously compared to opium and cannabis due to its addictive properties. The case was dismissed to Wiley's chagrin, and no evidence was found at the time against the use of caffeine.

Wiley died from heart disease in 1930 at the age of 85. His legacy is pervasive. His Bureau of Chemistry grew 15-fold and reorganised in 1927 to become the Food and Drug Administration of today, responsible for the regulation of most food products; human and animal drugs; therapeutic agents of biological origin; medical devices; radiation-emitting products for consumer, medical and occupational use; cosmetics; and animal feed. Current clinical trials are reminiscent of Old Borax's poison-squad experiments. And products with the Good Housekeeping Seal of Approval originally developed by Wiley still line our supermarket shelves today.

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