

## ☀ "The man who took chalk out of bread"

Prior to his passing last year, Professor John Postgate, a renowned figure in the field of sulphate-reducing bacteria, wrote a biography of his great-grandfather (his namesake) entitled [Lethal Lozenges and Tainted Tea](#) which recounts the fatal effects of adulterated food and drugs of 18<sup>th</sup> and 19<sup>th</sup> Century Britain, and the financial sacrifices, perseverance and political will undertaken by Postgate [and two colleagues - Hassall and Accum -](#) to bring Britain's Sale of Food & Drugs Act of 1875 into being. Legislators relied on smell, taste, feel and appearance until a published paper showed that a new invention - the microscope - revealed chicory, roasted corn, ground acorns, bean flour and crushed [mangelwurzel](#) in coffee. They were on to something.

## ☀ Mold, Meat and Misleading in the USA

The USA's Pure Food and Drugs Act of 1906 was a direct response to Upton Sinclair's book, [The Jungle](#), written to expose the hardship of immigrant life but also revealed unsanitary conditions in the USA's meat packing industry. Widespread deaths from an adulterated elixir led the US Congress to enact the Food, Drugs and Cosmetics Act of 1938, expanded to include the oversight of Food Additives in 1958. In 1962, the partner to adulteration, misleading, was first legally curtailed, when Congress required drug manufacturers to provide scientific evidence that their offerings were not only safe, but effective as well.

## ☀ When Canada was a province

Sections 15-22 of [The Statutes of the Province of Canada and the Dominion of Canada and Ontario \(1876\)](#) deal with the "penalty on persons mixing deleterious articles with food" (first offence, \$100 fine; second offence, six months imprisonment with hard labour), and "offering articles so mixed for sale" (\$100 and \$200 fine, for first and second offences, in turn). As well, the analytical costs related to the conviction were levied. In 1919, a federal Department of Health was formed, followed by the introduction of Canada's Food and Drugs Act in 1920. Subsequent to the thalidomide tragedy of the 1960's, drug efficacy was subjected to regulator review, in addition to safety.

## ☀ Plus ça change

Economically-motivated food adulteration is more prevalent today than ever previously recorded. As food science matures and technology becomes more precise, paradoxically, opportunities for fraudulence to gain an economic advantage have increased. The Rockland, MD-based USP (U.S. Pharmacopeial Convention), who purchased the Food Chemicals Codex in 2008, published a [Food Fraud Database](#) in 2012. Recordkeeping, analytical skills, and stakeholder collaboration have identified the foods most susceptible to being passed off<sup>1</sup>:

Most prone to clone	Some whys and wherefores
Olive Oil	Dilution with inferior oils; natural forces curtail supply, leading to price increases; buyers are motivated.
Fish and Seafood	Higher-priced varieties replaced by those of lesser value
Milk and milk ingredients	Milk from cows adulterated with milk from sheep, buffalo, and goat antelope and with reconstituted milk powder, urea, rennet, and other food and nonfood products.
Natural Sweetening Agents such as Honey and Maple Syrup	Colour, sweetness and viscosity can be mimicked; honey: rising prices due to Colony Collapse Disorder.
Saffron	To the world's most expensive spice has been added: glycerin, tartrazine, sandalwood dust, barium sulphate, and borax.
Expensive Fruit Juices	Such as pomegranate, diluted with apple juice.
Coffee	See first paragraph!

<sup>1</sup> Mermelstein N. 2015. [Fighting Food Fraud](#). *Food Technology*. Vol. 69 No. 3.

## ☀ What the Food Industry is Doing

The naysayers abound, as surely as they did when Sinclair published [The Jungle](#). Yet, reputable members of the food industry refuse to be smeared by crooks. The USP has published [Guidance on Food Fraud Mitigation](#), a framework, matrix and flowchart to assist all members of the food industry to fend off food shikesters of every description. **FF**