

AUTUMN BOOKS



NUTRITION

Poisoned platefuls

Felicity Lawrence extols two chronicles on the long, fierce fight for US food safety.

In 1902, the US Congress funded the first controlled trials of food toxicity involving human participants. The chief chemist of the US Department of Agriculture (USDA), Harvey Washington Wiley, was given US\$5,000 to investigate how food preservatives and colourings affected health. It was a key moment in a long and ongoing fight to stop industry riding roughshod over the public interest in the supply of food.

Wiley recruited young, healthy men as guinea pigs, starting with civil servants. They signed liability waivers and agreed to take part in “hygienic table trials”, eating free but strictly prescribed meals in an experimental kitchen in the USDA’s basement in Washington DC. An excitable press dubbed them the Poison Squad, giving Pulitzer-prizewinning science journalist Deborah Blum the title for her meticulous book tracking the early history of US food regulation. Meanwhile, Marion Nestle, academic scourge of ‘Big Food’, brings

The Poison Squad: One Chemist’s Single-Minded Crusade for Food Safety at the Turn of the Twentieth Century

DEBORAH BLUM
Penguin Press (2018)

Unsavoury Truth: How Food Companies Skew the Science of What We Eat

MARION NESTLE
Basic (2018)

the account up to date in *Unsavoury Truth*, her latest withering analysis of industry efforts to corrupt science and dodge regulation.

As Blum’s chronicle reveals, two rapidly developing industries untrammelled by government oversight came together to disastrous effect. The second half of the nineteenth century had seen an explosion in US chemical manufacturing as the country shifted from an agricultural economy to an increasingly industrialized and urbanized one. Newly synthesized preservatives were

cheap, and were added liberally to all sorts of food. Refrigeration was still in its infancy, and not yet adapted for domestic use.

Meat, tinned fruit and vegetables, butter and cheese were dosed with boric acid, salicylic acid and sodium benzoate to delay bacterial growth and rotting. Commercial butchers found that salicylic acid set off a chemical reaction that made old, greying meat look freshly pink for 12 hours. Formaldehyde, the embalmer’s tool, was a favourite for treating milk about to go off: its sweet taste masked rancidity. Along with newly developed coal-tar dyes and other toxic stalwarts of food colouring, such as chromate of lead (used to turn sweets yellow), these chemicals were deployed to disguise adulteration and dangerous spoilage. There were many mass poisonings; in 1899, 400 children in Indiana died after drinking “embalmed” milk. Yet there were no federal laws at the time covering the sale of unsafe food, nor



ILLUSTRATIONS BY THOMAS PATERSON

any requiring accurate labelling.

From his appointment in 1883, Wiley had run numerous tests exposing this widespread adulteration of food and drink, infuriating powerful interests — from dairy and meat producers to whiskey distillers. By 1902, he was battle-hardened and adept at working with writers and women's groups to promote national regulation of the food sector.

His Poison Squad experiments proved decisive. The first group of 12 volunteers was divided into two. Half had their food dosed at varying levels with chemical preservatives, starting with borax, a salt of boric acid; the others ate the same meals, free of additives. The groups were then swapped. Temperatures and pulses were recorded and monitored, urine and faeces collected and analysed. Double blind it most certainly was not. The participants soon worked out that the borax had been secreted in butter, and stopped putting it on their bread. The USDA scientists finally resorted to administering the preservative direct to the volunteers, in capsules.

The project's chef had a loose tongue, and the press ran lurid stories, exposing government chemists to ridicule. Wiley persevered. His guinea pigs became ill: effects ranged from confusion to nausea and vomiting, increasing with cumulative dosing. The case for legislation was becoming irrefutable, and

despite the efforts of industry allies in both the House of Representatives and the Senate, US President Theodore Roosevelt was coming round to supporting it. (Lobbying and donations from the food-manufacturing, whiskey and chemicals industries to politicians and scientists were as liberally dispensed as the preservatives.) When the Pure Food and Drug Act passed in 1906, it became widely known as “Dr Wiley’s law”.

Changing government policy is rarely fast; instead, it is a series of protracted skirmishes and incremental changes. Blum’s chronological narrative in *The Poison Squad* sometimes gets bogged down in minutiae, much as campaigners did. One chapter also threatens to run away with the book. No history of US food regulation would be complete without Upton Sinclair, the young socialist “muck-raking” writer who documented the horrors of the stockyards in Chicago, Illinois. Blum’s narrative on Sinclair’s 1906 novel about it, *The Jungle*, risks upstaging her hero. Sinclair based his book on seven weeks observing the brutal conditions, as immigrants worked with diseased cattle and a hellish mix of rotting meat, floor sweepings, carcasses retrieved from privies, rats and rat poison, which were all processed together. That proved the tipping point for Roosevelt to back legislation. Blum’s account of Wiley’s work is full of fascinating detail and is a valuable contribution to understanding the politics of food.

Nestle, a nutrition researcher at New York University, writer and distinguished veteran of many an advisory committee, could make a fair claim to Wiley’s mantle today. For decades, she has been battling the food and drink industry, with a combination of sound science and brilliant communication. Like Wiley, she has found herself becoming part of the story, attacked in the media for exposing adulterations and routine poisonings — albeit a less acute and more chronic epidemic of them than Wiley’s, in the form of diet-related non-communicable diseases, such as obesity, diabetes and cardiovascular disease. Her earlier works, notably *Food Politics* (2002) and *Safe Food* the following year, were key examinations of the problems of today’s food supply. She must sometimes long for the simplicity of the Poison Squad experiments: a theme of *Unsavory Truth* is the complexity of nutrition research. The book is a remorseless dissection of the corruption of science by industry.

The food industry’s playbook is familiar from the strategies of tobacco and

climate-change denial over the past four decades. Yet it is poorly understood, and ignored by some media and academic journals in the field. It relies, as Nestle points out, on repeated use of the same set of techniques. Cast doubt on unhelpful science; fund more favourable, skewed science; offer gifts and consultancies; sponsor professional bodies; and use front groups posing as independent institutes. Finally, promote personal responsibility and self regulation rather than government intervention; capture advisory committees; and challenge regulation in court.

Too many industry-funded studies posing as serious scientific inquiry are in fact marketing research for single products or ingredients. She demolishes claims from a chocolate-milk drink that purportedly helps young American footballers’ cognitive function even after concussion, to blueberries touted as preventing erectile dysfunction. She asks why serious journals publish these. Her extensive review shows the vast majority of such studies are favourable to the funder, whereas in independent research the opposite is the case. Yet researchers in nutrition, as in other fields, are under intense pressure to bring in grants whatever the conflicts of interest. Nestle is more generous than I might be in exonerating many from conscious bias, arguing that the studies themselves are often good science but the problem lies in who frames the questions and how the results are interpreted.

Nestle’s accounts of conflicts of interest include Coca-Cola funding university researchers in a “Global Energy Balance Network”, focusing obesity studies on physical activity rather than diet. Reading these, it’s

hard to argue with her call for full disclosure, and recognition and active management of those conflicts. But the answers are much bigger than that, as she acknowledges. “Corporations have taken over American society, putting democratic processes at grave risk,” she notes.

Her solution? Engaged citizens and better rules that “control the political power corporations exert over legislation and policy”.

These two books about the troubled history of food safety demonstrate that science does not sit in a protected space of apolitical empirical truth. Like everything else, it is part of the battleground that is politics. ■

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TOO MANY STUDIES POSING AS SERIOUS SCIENTIFIC INQUIRY ARE IN FACT MARKETING RESEARCH.