



## FOOD SCIENCE

# Digestive tracts

Barbara Ketcham Wheaton samples a brace of food-related science and technology histories.

Food has long exercised the scientific mind. Now, two books open windows on the dynamic interplay of science, technology and the culinary arts in history. Emma Spary, in *Eating the Enlightenment*, explores concerns about physiology and morality vis-à-vis cuisine at the dawn of modern science. Meanwhile, food historian Bee Wilson's *Consider the Fork* delves into the chewy past of kitchen technology.

Focusing on Paris during the tumultuous years from 1670 through to the mid-eighteenth century, Spary examines questions and controversies surrounding the edible — from food and drink addictions to the dangers of mixing social classes at cafés. She shows how French thinkers, medics, clergymen and café proprietors probed matters digestive from scientific and philosophical standpoints. They asked many questions. What was the correct diet for an intellectual? Were the spirits in liqueurs a good thing? Were cafés suitable venues for the display of literary wit?

Spary shows how scientists of the time debated whether we digest food by dissolving it with acid in the 'chemical laboratory' of the stomach (the iatrochemical theory), or by mechanically grinding it with the teeth and then more finely with the stomach. The chemist Louis Leméry spoke for the iatrochemists in his *Traité des Aliments* (1702) in postulating acid or alkaline fermentation of foodstuffs during digestion. In the 1730s, working separately, Antoine-René Ferchault de Réaumur validated the iatrochemical theory in experiments with living birds.

Even Jacques de Vaucanson, inventor of automata, got in on the act by 'demonstrating' the process of chemical digestion through mechanical trickery. His famous Digesting Duck automaton appeared to eat, digest and excrete grain, although the 'input' and 'output' were purportedly in separate compartments.

## Eating the Enlightenment: Food and the Sciences in Paris

E. C. SPARY

University of Chicago Press: 2012. 368 pp. \$45, £29

## Consider the Fork: A History of How We Cook and Eat

BEE WILSON

Basic Books: 2012. 352 pp. \$26.99

A particularly heated debate swirled about whether an austere, 'natural' diet supported a clear mind and pure body better than did a luxurious, sophisticated one. Spary cites many of the influential cookbooks from both camps, including Marin's *Les Dons de Comus* (1739) on the sumptuous side and Menon's *La Cuisinière Bourgeoise* (1746) on the natural one.

Philosophers took sides, with Voltaire plumping for luxury; his trout and cream, for instance, was both praised and vilified (for causing indigestion). 'Natural man' Rousseau, by contrast, wrote, "If I am given milk, eggs, salad, cheese, brown bread, and ordinary wine I am sufficiently entertained." In this, Rousseau was backed by medical reformer Philippe Hecquet, who in around 1700 advocated a simple, nearly meat-free diet as morally and hygienically superior.

The Enlightenment's obsession with classes of food and their effects is echoed in *Consider the Fork*. Wilson's take on technologies of cooking and eating mixes material sciences, engineering, anthropology and history. Organized under eight broad topics — including fire, ice, cutting and grinding — the book spans millennia, and covers tools from Neolithic mortars and pestles to modernist cuisine's liquid-nitrogen canisters. The focus is Western, but Wilson is well informed about equipment from elsewhere, especially Asia.

She emphasises how technologies determine what we eat. Electric refrigerators, for instance, elbowed out curing and smoking

as necessary household techniques, and put fresh and cooked-from-frozen food on the daily table. Meanwhile, some odder inventions, such as the mechanical apple parer, have fallen off the counter edge for good in most kitchens.

The chapter on knives is excellent. In 3,000 BC, bronze knives were shaped like modern ones, but dulled so quickly that flints were often used in preference. Iron knives came into use around 700 BC, and within a few centuries carbon-steel knives were being made both in China and the West.

In modern times the French have used many specialized knives, from the mushroom-fluting bird-billed knife to the flexible fish knife that slips fillets of sole off the bone. Such elaborate differentiation is part of French history; at European tables of the fifteenth century, carvers conducted knife-work theatrics, wielding a variety of blades to dismember and serve all sorts of flesh, fish and fowl. However, in the Chinese kitchen a single rectangular cleaver, the tou, is used for the most robust butchering tasks, as well as the finest dicing and shredding. Originating towards the end of the Chou dynasty (1045–256 BC), when steel technology came to China, skills with this single blade became ever more refined and the language of cutting and shredding ever more specialized. Beautifully cut ingredients remain at the heart of Chinese gastronomy.

In the past 60 years, two waves of game-changing equipment have entered the kitchen. The food processor and microwave arrived in the mid-twentieth century. More recently, the 'lab' apparatus and ingredients as yet unfamiliar to the home cook — such as the gelling agents iota carrageenan and konjac gum — have begun to appear as essentials for whipping up the confections of molecular gastronomy. Once again, hard-won skills become redundant, and the increasing use of instruments has diminished our sensory involvement with the act of cooking.

Even skills such as whisking have gone the way of the medieval boar spit in many kitchens. Today, swathes of people in the Northern Hemisphere need scarcely touch their dinner until they sit down to eat it. Wilson is clearly ambivalent about these technological tides.

Meanwhile, home videos of meals cooked from the monumental *Modernist Cuisine* (Cooking Lab, 2011) by Nathan Myhrvold, Chris Young and Maxime Bilet can be found on YouTube. A new cycle of debate begins. ■

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