

# Birth of the *Modern Diet*

*Ever wonder why dessert is served after dinner?  
The origins of modern Western cooking can be traced to ideas about  
diet and nutrition that arose during the 17th century*

by Rachel Laudan

**W**ere we to attend a 16th-century court banquet in France or England, the food would seem strange indeed to anyone accustomed to traditional Western cooking. Dishes might include *blancmange*—a thick puree of rice and chicken moistened with milk from ground almonds, then sprinkled with sugar and fried pork fat. Roast suckling pig might be accompanied by a cameline sauce, a side dish made of sour grape juice thickened with bread crumbs, ground raisins and crushed almonds, and spiced with cinnamon and cloves. Other offerings might consist of fava beans cooked in meat stock and sprinkled with chopped mint or quince paste, a sweetmeat of quinces and sugar or honey. And to wash it all down, we would probably drink *hypocras*, a mulled red wine seasoned with ground ginger, cinnamon, cloves and sugar.

Fast-forward 100 years, though, and the food would be reassuringly familiar. On the table might be beef bouillon, oysters, anchovies and a roast turkey with gravy. These dishes might be served alongside mushrooms cooked in cream and parsley, a green salad with a dressing of oil and vinegar, fresh pears, lemon sherbet, and sparkling white wine.

Before 1650, the elite classes throughout the Islamic and Christian worlds from Delhi to London shared pretty much the same diet: thick purees, lots of spices, sweet and sour sauces, cooked vegetables, and warmed wines. Sugar was ubiquitous as a seasoning in savory dishes. But in the middle of the 17th century, the northern European diet began to change. This new regimen relied on fewer spices, based its sauces on fats such as butter and olive oil, and incorporated raw fruits and vegetables. Sug-

ar appeared only at the end of a meal.

What happened? Economic considerations cannot account for the difference: for the upper class, money was no object. For the poor, both meals would have been far out of reach. Well into the 19th century, they subsisted on vegetable soups and gruels with bread or porridge. Novel foodstuffs from the New World do not explain the shift in diet either, because with the exception of turkey, the dishes at the second banquet depended not on new ingredients but on new uses of long familiar ones. The clue to this transformation in eating habits between the 16th and 17th centuries must be sought instead in evolving ideas about diet and nutrition—which is to say, in the history of chemistry and medicine.

## Medicine in the 16th Century

**E**ating healthy food was extremely important to people of earlier eras, perhaps even more so than it is today. Activity in the kitchen mattered so much because physicians had so few other options. To avoid resorting to unpleasant therapies such as purging or bloodletting, doctors carefully monitored their wealthy patients' daily habits: their emotional state, for example, or how much sleep, exercise and fresh air they got. Most crucially, doctors advised their patients on the food and drink they should consume. Every court had a bevy of physicians who were schooled in the physiology of digestion, the nutritive proper-

ties of foodstuffs and the nature of a healthy meal. Offering dietary advice to their affluent patrons was a major part of their work.

The actual task of transforming abstract dietary theory into dishes appropriate for the courtly table fell to the head chefs, or majordomos, as they were often called. In a popular medical text written in 1547, *Breviary of Health*, author Andrew Boorde noted, "A good coke is halfe a physycyon." Sixteenth-century cooks, physicians and their patrons shared a common notion of diet and nutrition that can be traced to classical antiquity. First formulated around 400 B.C. as part of the Hippocratic Collection, the ideas were systematized by the great Roman doctor Galen in the early second century A.D. After the collapse of classical civilization, Islamic intellectuals eagerly took up these notions (along with many other scientific theories of the ancient world).

By the 12th century, European scholars had translated key Arabic texts into Latin; teachers at the major medical schools, such as Montpellier in the south of France, relied extensively on these texts. In the late 15th century, experts began translating newly discovered Greek manuscripts as well as retranslating known texts. These documents formed the basis of a host of popular manuals and mnemonic jingles. Particularly well liked were the numerous vernacular variations on a Latin poem, the *Regimen Sanitatis Salernitanum*, apparently composed around the end of the 11th cen-

**SUMPTUOUS SPREAD** from the 16th century might have included *blancmange* (a puree of rice and chicken) and a side dish of cameline sauce (made of crushed almonds, bread crumbs and spices moistened with sour grape juice), accompanied by mulled red wine, or *hypocras*. By the 17th century the foods looked more familiar to the modern eye: roast turkey, green salad with oil and vinegar dressing, and sparkling white wine.

*Before 1650*

*After 1650*



*Blancmange*



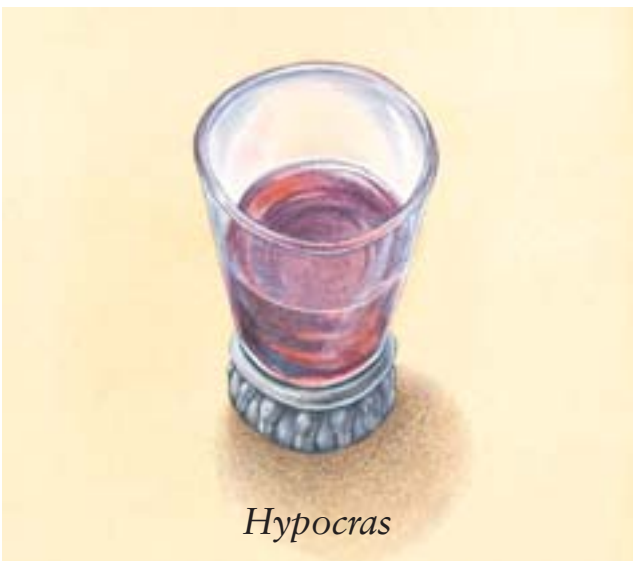
*Roast Turkey*



*Cameline Sauce*



*Salad*

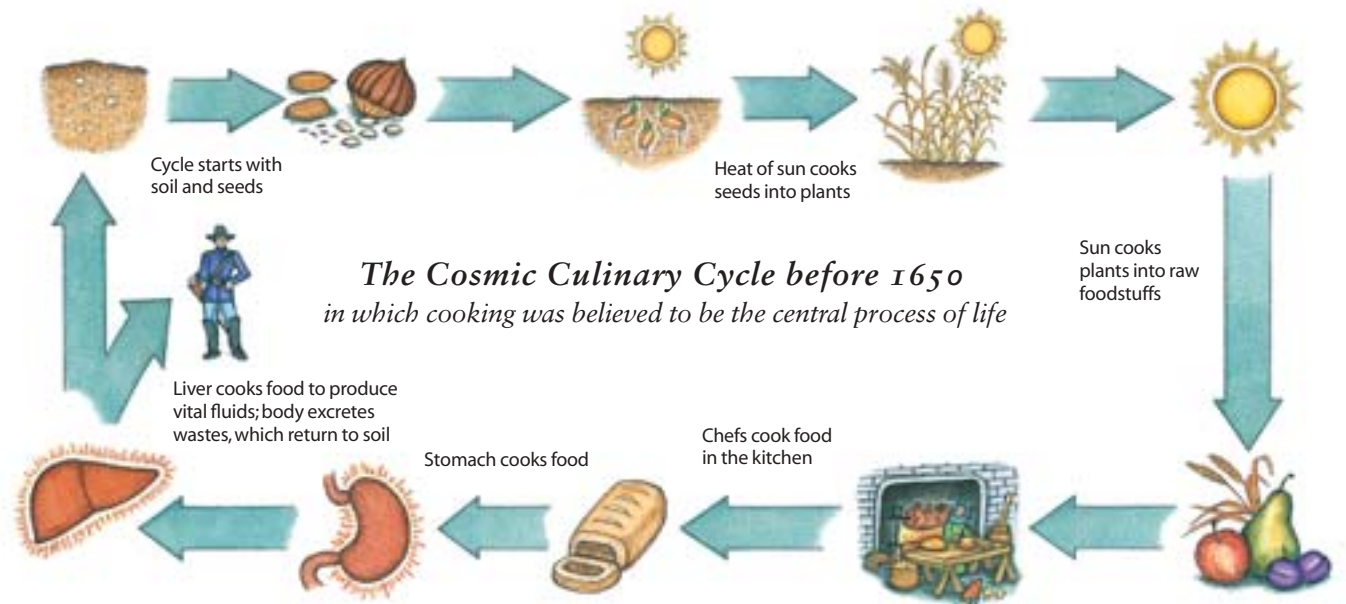


*Hypocras*



*Sparkling Wine*

HEDI NOLAND



ture but still widely circulated in the 16th and even 17th centuries:

*Peaches, apples, pears, milk, cheese, and salted meat, Deer, hare, goat, and veal, These engender black bile and are enemies of the sick*

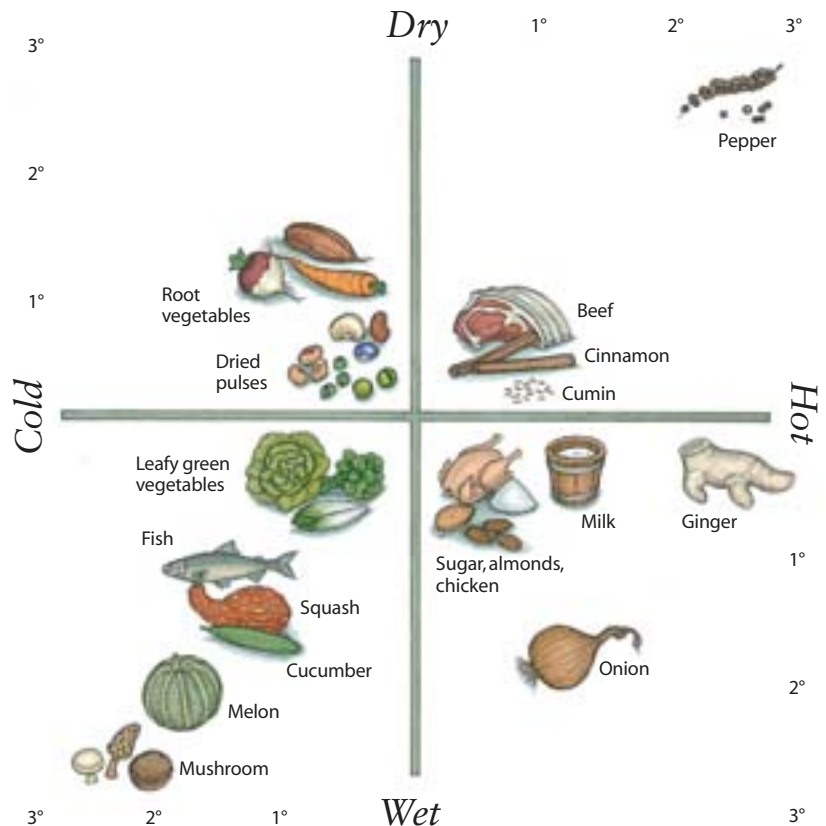
The prevailing dietary wisdom of the 16th century, as presented in these medical guidebooks, relied on two assumptions: first, that the process of digesting foods was actually a form of cooking. Indeed, cooking stood as the basic metaphor for the systems that sustained all life. Seeds were cooked into plants; when the plants appeared above the ground, the heat of the sun cooked them into ripe fruits and grains. If humans gathered these foodstuffs, they could cook them further to create edible dishes. Finally, the internal heat of the body turned the food into blood. The body then expelled as feces what was not digestible. Excrement joined putrefying dead animals and plants to begin the life cycle again.

The second assumption about food and health in this scenario involved maintaining a proper equilibrium of bodily fluids by eating a suitably balanced diet. Doctors and chefs of the time believed that four fluids, or humors, circulated in the body: blood, phlegm, yellow bile and black bile. These humors corresponded to the four Aristotelian elements—air, water, fire and earth. Because blood was hot and moist, it corresponded to air; phlegm was cold and moist and thus resembled water; yellow bile was hot and dry, similar to fire; black bile was cold and dry, connected to earth.

Ideally, the human body was slightly warm and slightly moist, although in practice the exact balance varied from individual to individual, depending on variables such as age, sex and geographic location. Older people were believed to be colder and drier than younger ones; menstruating women colder and wetter than men; southern Europeans

more hot-blooded than their neighbors to the north. The perfect meal, like the perfect human temperament, was slightly warm and slightly moist, but combinations away from this center could be used as mild dietary correctives to warm and moisten the elderly, dry out the moister sex, and calm down the southerner or perk up the northerner.

**Classification System of the 16th Century**  
*in which foods were assigned degrees of heat, coldness, wetness and dryness*




The majordomo, then, had the challenge of selecting and preparing meals adjusted to the temperament of the eater. The properties of any given food item were common knowledge: pepper, for example, was hot and dry in the third degree, and vinegar was cold and wet in the second degree. Root vegetables such as turnips were by nature earthy—dry and cold—and thus better left to peasants. If chefs should decide to prepare them, however, they would make sure to stew them, thereby adding warmth and moisture. In contrast, chard, marrow (a watery, squashlike vegetable) and especially onions were very wet and had to be fried.

Other foods were completely unacceptable: Guy Patin, a doctor at the University of Paris and author of *Treatise on the Conservation of Health*, published in 1632, cautioned that mushrooms, being cold and wet, should be avoided entirely. Melons and other fresh fruit were not much better, being very moist and liable to putrefy. In general, though, cooking not only helped achieve proper culinary balance—dry foods were boiled, wet foods fried or roasted—but the process also, in effect, partially predigested the foods, making them easier for the body to assimilate.

According to these medical theories, the blancmange on our 16th-century table was close to perfect. The wise chef had combined chicken, rice and almond milk, all slightly warm and moist, and the sugar on top—also warm and moist—was the crowning touch. The naturally moist suckling pig had been roasted. The cameline sauce balanced cool, moist vinegar with the warmth of raisins and hot, dry spices. The chef was careful not to serve quinces and grapes fresh, and hence dangerously cold and moist, but instead offered them dried or cooked with added sugar (in the quince paste).

Health experts viewed wine with a meal as an ideal nutrient—provided, of course, that diners did not drink to excess. *The Book of Wine*, written around 1310, printed in 1478 and widely attributed to Arnald of Villanova (a leading medical writer and physician to James II of Aragon), had only high praise for the beverage: besides being good for flatulence and infertility, wine “fortifies the brain and the natural strength . . . causes foods to be digested and produces good blood.” Even so, because red wine tended to be cold and dry, chefs often served it warm with added sugar and spices, creating hypo-




## Typical Pre-17th-Century Recipes

### Cameline Sauce


*“To make an excellent cameline sauce, take skinned almonds and pound and strain them; take raisins, cinnamon, cloves and a little crumb of bread and pound everything together, and moisten with verjuice\*”; and it is done.”*

*\*sour juice of unripe grapes*



### Blancmange


*“Take cooked breasts of chicken and put them on a table and shred them into the finest fibers you can. Then wash the rice and dry it, and make it into flour, and put it through a sieve; then moisten this rice flour with goat’s, sheep’s or almond milk, and boil it in a well-washed and clean pan; and when it begins to boil, add those shredded breasts, with white sugar and fried white pork fat; and keep it away from the smoke, and let it boil gently without excessive fire, so that it becomes as thick as the rice should be. And when you serve it, top it with crushed or pounded sugar, and fried pork fat.”*



### Hypocras

*“To make a lot of good hypocras, take an ounce of cinamonde, known as long tube cinnamon, a knob of ginger, and an equal amount of galangal,\* pounded well together, and then take a livre of good sugar; pound this all together and moisten it with a gallon of the best Beaune wine you can get; and let it steep for an hour or two. Then strain it through a cloth bag several times so it will be very clear.”*

*\*a root in the ginger family*



SOURCE: The Medieval Kitchen: Recipes from France and Italy, University of Chicago Press, 1998.

cras. With these options before them, the members of the 16th-century court could rest assured that they were getting a healthy meal.

### 17th-Century Cooking

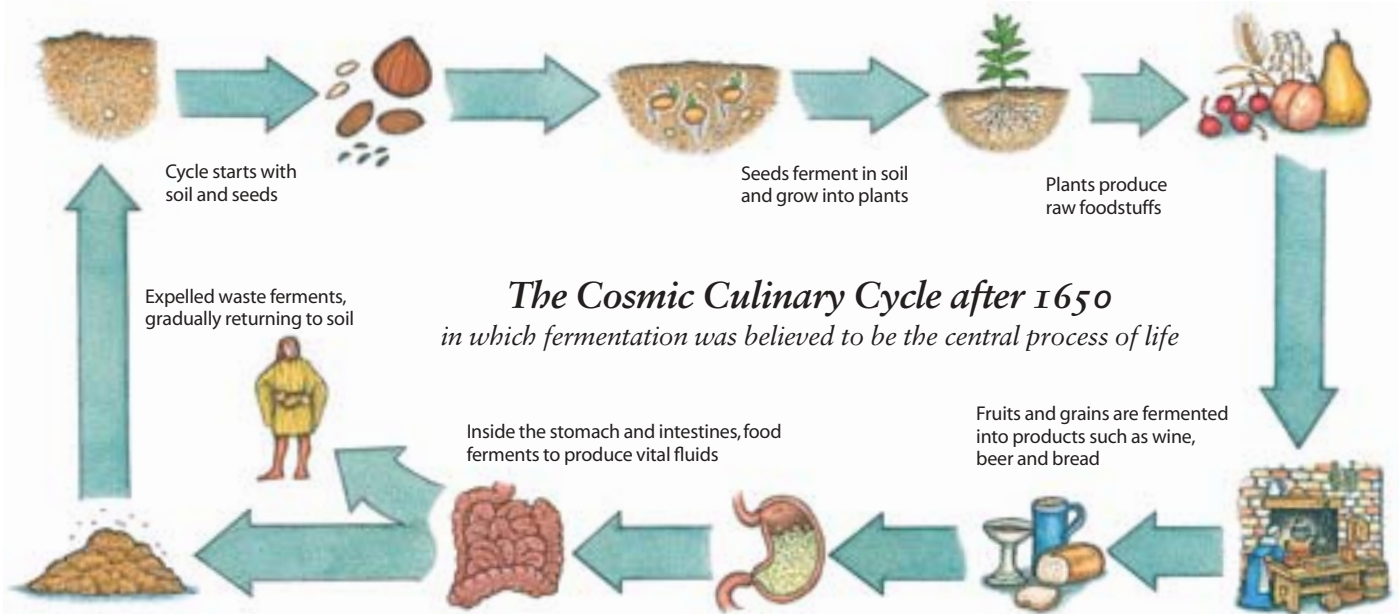
By the middle of the 17th century, however, physicians of a quite different persuasion began to join the courts of northern Europe. These scholars derived their ideas from Paracelsus, an itinerant doctor from Germany who, in the 1520s, began to mock the structure of classical medicine. Paracelsus’s abrasive personality and radical religious beliefs gave him a dreadful reputation, so few physicians admitted to this heritage. But acknowledged or not, the link was clear: these court doctors argued, as Paracelsus had, that the idea of a cosmic life cycle based on cooking and the Aristotelian elements was wrong and had to be revised.

Historians of science still debate the causes of this shift, but the technology of distillation seems to have contributed to it. As the practice became more important from the late Middle Ages on, chemists experimented with heating a great variety of natural substances, many of them edible, such as fennel, nutmeg and

cloves. They noted that in every case the original material separated into three parts: a volatile, or “spirituous,” fluid; an oily substance; and a solid residue.

Drawing on such observations, these chemists proposed three new elements in place of Aristotle’s four: mercury (the essence of the vaporous fluids; not related to the toxic chemical of the same name), sulfur (the essence of the oily substances; again, unrelated to the chemical) and salt (the essence of the solids; not the same as modern table salt). In such a scheme, salt dictated the taste and consistency of foods. Mercury was the source of smells and aromas. Sulfur, or oil, carried the properties of moistness and sweetness; it also bound together the other two, normally antagonistic, elements.

Physicians of this era also believed that digestion involved fermentation rather than cooking, and they began to investigate the familiar yet mysterious process more closely. Because fermentation included gentle heat and the production of vapors, it seemed to resemble (or was possibly the same as) putrefaction, distillation, and the interaction of acids and salts. Vapors, spirits or airs (soon to be dubbed “gases” by Dutch scientist and mystic Johannes Baptista van Helmont)



excited chemists of the time, as they appeared to be the very essence of the substance from which they originated.

Several prominent physicians of the 17th century advocated this new understanding of digestion, among them van Helmont, Franciscus Sylvius, a physician at the University of Leiden, and Thomas Willis, then the best-known doctor in England and a founding member of the Royal Society of London. According to this view, digestion involved the fermenting, rather than the cooking, of foodstuffs. Gastric juices, considered acid and sharp, acted on foods to turn them into a white, milky fluid, which then mixed with alkaline bile in the digestive tract. The mixture fermented and bubbled, producing a salty substance that the body could transform into blood and other fluids.

Like their 16th-century predecessors, these later physicians presented a cosmic cycle of life that reflected their view of digestion. Seeds became plants as a result of the “ferments of the earth,” in the words of John Evelyn, a keen horticulturist who spoke before the Royal Society in 1675. Fermentation turned grains and fruits into bread, beer and wine, which the digestive system could ferment further. Putrefaction of waste material started the cycle all over again. “Vegetable putrefaction resembles very much Animal Digestion,” stated John Arbuthnot, member of the Royal Society and physician to Queen Anne, in a popular handbook on foodstuffs that appeared in 1732. The cosmos was still a kitchen but was now equipped with brewers’ vats, and the human body held miniature copies of that equipment.

These changes in the understanding

of the digestive process put 17th-century chefs on guard. Alert cooks seized the opportunity to establish their good reputations by thinking up dishes that were healthful by the new standards—and, of course, also tasty. For instance, chefs welcomed oysters, anchovies, green vegetables, mushrooms and fruits because they fermented so readily and thus did not need complicated preparation in the kitchen to be predigested. As cooks began to incorporate fresh produce into many of their dishes, horticulture and botanical gardens became the rage. Scientists and scholarly gentlemen exchanged seeds, translated gardening books and developed hothouses for tender vegetables. They began cultivating mushrooms on beds of putrefying dung. In England, the well-to-do put even such previously distasteful dishes as eggplant on their tables.

### The First Restaurants

Substances rich in oil, such as butter, lard or olive oil, all with the useful property of binding the components of salt and mercury, became the basis of a variety of sauces. They were combined with ingredients containing the element salt, such as flour and table salt, and others high in mercury, such as vinegar, wine, spirits, and essences of meat or fish. The first recipe for roux, a combination of fat and flour moistened with wine or stock to produce a single delicious taste, appeared in the cookbook *The French Chef*, written in 1651 by François Pierre de la Varenne. Salads, which combined oil-based dressings and readily digestible greens, also became quite fashionable. (Evelyn pro-

moted vinaigrette salad dressing in his *Acetaria: A Discourse of Sallets*, published in 1699.)

As fruits, herbs and vegetables assumed a more prominent place in the main meal, sugar, formerly lauded as a panacea, came in for rough treatment at the hands of the chemical physicians. Some wanted to banish it altogether. “Under its whiteness,” hissed Joseph Duchesne, physician to Henry IV of France, in 1606, “sugar hides a great blackness”—doctors knew that it blackened the teeth—“and under its sweetness a very great acrimony, such that it equals aqua fortis [nitric acid].”

British physician Willis, who had noticed the sugary urine of patients suffering from what doctors later termed diabetes, concurred. “Sugar, distilled by itself, yields a liquor scarcely inferior to aqua fortis. . . . Therefore it is very probable that mixing sugar with almost all our food, and taken to so great a degree, from its daily use, renders the blood and humours salt and acrid; and consequently scorbutic.”

The moral was clear: sugar was dangerous, perhaps even a poison. Such dire warnings would surely have given any chef second thoughts about sprinkling it over the main dishes of the meal, leaving the diner no choice but to eat it. Thus, sugar moved to the periphery of the menu, served only in desserts, which were prepared in a separate kitchen. Sugar became the subject of a distinct genre of books dedicated to its decorative, not medical, properties.

Physicians regarded alcoholic spirits and other distilled essences as useful medicines. They and their patients, though, considered a cordial or an eau-

de-vie fine for the occasional sip but too strong for everyday use. Less powerful extractions, made from nutritive foods such as meats that had been concentrated by boiling or fermenting, could be more easily digested. Sometimes the concentrated goodness of a food even showed up as desirable gas bubbles that nourished the brain. Sparkling mineral waters gained immense popularity as spas opened across Europe. At the table, hot and spicy hypocras yielded to cool wines, even to sparkling champagne, which was most likely first produced in the late 17th century.

Chefs made essences of meat or fish from the “musculous Flesh, which is of all [parts of the animal] the most nourishing, that which produces the best juice,” and then served this healthy fare in the form of stock, bouillon or jellies made from these liquids. Land animals had more nutritious juices than fish or birds did, and of the land animals, beef produced the most restorative ones. By 1733 Vincent la Chapelle, a French chef who worked for the earl of Chesterfield in England, had a variety of recipes for delicately garnished beef bouillon in his book *The Modern Cook*, which was quickly translated into French. Before long, entrepreneurs saw an opportunity in this new cuisine, selling “restaurants”—which is French for “restoratives”—to those who could not afford their own chefs.

Eventually Europe’s middle classes emulated the aristocracy, developing a taste not only for restaurants but for all the new cuisine. Such foods seemed to offer a certain refinement, not just in the sense of good taste but also in a chemical sense, as the meals represented the most enhanced form of food. As the authors of the gastronomic treatise *The Gifts of Comus*, published in Paris in 1739, put it: “Modern cookery is a kind of chemistry. The cook’s science consists today of analyzing, digesting, and ex-

## The Three Principles by which foods were classified in the late 17th century



### The Sulfur Principle

Makes food oily, binds  
foods high in salt and mercury  
(oil, butter, lard)



### The Salt Principle

Gives food taste  
(salt, flour)



### The Mercury Principle

Makes food volatile or gaseous, gives it smell  
(vinegar, wine, meat essence)

tracting the quintessence of foods, drawing out the light and nourishing juices, mingling and blending them together.”

This new diet gradually spread across Europe as it simultaneously made its way down the social scale. By the mid-to late 19th century it had become the standard for the English- and French-speaking worlds in Europe, the U.S., Canada and Australia. Other regions, however—the Islamic world and Spanish-speaking parts of the Americas, for example—remained isolated from the chemistry derived from Paracelsus and adopted neither the dietary theory nor the resultant cuisine. (The modern curries of India and moles of Mexico, for instance, resemble the cuisine of pre-Paracelsian northern Europe.)

The Western cuisine born in the 17th century long outlived the dietary theory that inspired it. By the end of the 18th century, chemists and physicians had embarked on the research that was to lead to the modern theories of the role of calories, carbohydrates, proteins, vitamins and minerals in the biochemical

processes of digestion. Notably, during the 19th and early 20th centuries, when most of these studies were carried out, nutritionists focused on developing a cheap but adequate diet for factory workers, soldiers and other less affluent people. The shift of emphasis in the medical community from the rich to the poor, though, meant that chefs catering to the well-heeled continued to develop Western cuisine along the lines established in the 17th century.

Now that almost everyone in the West can afford the cuisine formerly restricted to the wealthy, we have come to realize that its dietary foundations are a mixed blessing. Although fresh fruit and vegetables score high marks, the centrality of fat in our diets (a result of the importance given to meat and fat-based sauces) is blamed for the high rates of obesity in most developed nations. In response, everyone from physicians to chefs has returned attention to the age-old problem of developing a new cuisine, at once delicious and in line with the latest findings in physiology and nutrition. 58

### The Author

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### Further Information

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