Chapter 10

The Wisdom of Cuisine

Humans are virtually the only creatures in the world that observe rules about what is eaten, how it is prepared, and with whom it is to be eaten. The only other animals that do anything remotely approximate are the Japanese macaque monkeys, among which strong food preferences have developed, along with traditions about preparation unique to each band. For example, some bands wash potatoes in the sea, whereas others do not — a trivial distinction as compared to the complexity of the human pattern of eating. Four components make up this pattern. The first is the very limited number of foods selected from what the environment offers—usually on the basis of availability and on the yield of nutrients in proportion to the energy required to obtain them. The second component is the manner of preparation; the third is the society's traditional principle of flavoring staple foods; and the fourth consists of rules: the number of meals eaten each day, whether they are eaten alone or with others, the setting aside of foods for ceremonial use, and the observation of taboos.

These four components make up what is called a “cuisine.” The meaning of the word as used here encompasses not merely the artistic presentation of food, but everything concerned with eating. Many small choices about eating, made over the centuries or indeed through the millennia, eventually produce a distinctive cuisine. This is as true of the Mexican's chili-seasoned tortillas and beans as of the enormously subtle range of French haute cuisine. A cuisine is basically as conservative as religion, language, or any other aspect of culture. Iranian peasants today eat essentially what their Persian ancestors ate more than six thousand years ago; the basic Mexican diet dates back to about five thousand years before the arrival of the Spanish; the combination of spices known as curry has distinguished the cooking of India for thousands of years. The reason for this conservatism is the limited number of foods regarded as being edible—a selection that is passed on through the generations as part of the accumulated wisdom of society. The flavor principle of each society tends to be identified with what is edible, whereas unfamiliar flavors are by definition associated with the ways of strangers. People of Chinese ancestry living in North America often grow vegetables from Asia, even though North American vegetables very similar in taste and texture are available. Even while braving a totally new experience as pioneers in space, the astronauts needed the security of familiar foods, and so they chose to take with them those with the tastes of beef and gravy, fried bacon, chicken, corn flakes, and fruit cakes.

The fear of new foods (neophobia) has been documented in other mammals, including primates, and undoubtedly it has been advantageous for survival: Foods previously eaten without difficulty are safe; new foods are a possible danger. Neophobia may have played a part in the rapid expansion of fast-food restaurants with extremely limited menus, to which families return with the assurance of familiarity. Stress seems to strengthen neophobia, and may be the reason why humans who are ill shy away from all but familiar foods. Notwithstanding the conservatism of all cuisines, some new foods are constantly being added to them. In Hawaii, the preferences of immigrant ethnic groups have been added to the original Polynesian cuisine of roast pig, sweet potato, and coconut: vegetable dishes from China; pickled vegetables from Korea; raw fish and seaweed from Japan; curries from India; pastries, bread, frankfurters, and steak from the mainland United States. Asparagus has recently been accepted as a food by the Chinese on Taiwan, but only after being prepared with the traditional flavoring of soy sauce, brandied wine, and ginger root. *

The origin of most cuisines is lost in the unrecorded past. In China, though, both archeological evidence and written records go back thousands of years. During the period of the Shang and Chou dynasties, between about 2200 and 3800 years ago, eating became a preoccupation virtually throughout the society. Confucius, who lived during the Chou Dynasty, found nothing
incompatible with being a sage in knowing the minutiae of preparing food; for many other Chinese, a knowledge of food and drink marked one as educated. Of the 4000 persons who tended the Shang royal palace, 2271, or nearly sixty percent, were concerned with various aspects of preparing and serving meals. These included the 162 master dietitians who made out the menus, the 128 chefs who cooked for the royal family plus 128 others who cooked for guests at feasts, the 335 specialists in plant foods and 70 in meat, and the 24 who had charge of preparing turtles and shellfish — not to mention, among others, 450 who prepared and served wine, 170 who served other beverages, 94 icemen, and 62 specialists in pickles and sauces.

From such statistics, the ancient Chinese would appear to have been more deeply involved with all aspects of eating than any other people in history. It was not only that the Chinese cooked an enormous number of dishes, utilized a great variety of foodstuffs, devoted much time to their preparation and consumption, and spent enormous amounts of money in the process. In addition, numerous customs, beliefs, and rituals were tied up with eating. And much of the day appears to have been spent in thinking about the meal that had just been completed and the one to be eaten next.

By the time of the Chou Dynasty, most of the foodstuffs, techniques of preparation, and utensils that would later characterize the fully developed Chinese cuisine were already in use. Under the Chou, nearly all of the twenty different methods of cooking known in China today were practiced — with the notable exception, however, of one that is now most characteristic. That method, stir-frying for a brief time over high heat, was soon to evolve as a means of conserving the supply of fuel (wood having become scarce as the forests were cut down and the cleared land produced crops for an increasing population). By using the stir-fry method, it became possible to cook small pieces of meat or vegetables in only a few moments by exposing a maximum surface area to the high heat. The small pieces of food used, together with the scarcity of tables in China, made necessary a utensil that would require the use of only one hand while the other held the bowl of food. For this, chopsticks amounted to an extension of the thumb and forefinger of one hand, allowing delicate manipulation without dirtying the fingers.

The Chinese under the Chou Dynasty had already developed other hallmarks of their cuisine: an emphasis on the mincing and flavoring of foodstuffs before they are cooked, and the use of a single staple in a variety of ways. In a land where population was increasing and where drought and other calamities periodically caused the people to go hungry, everything that was potentially edible had to be used — including rats (known euphemistically as "household deer"), snakes ("brushwood eels"), and grasshoppers ("brushwood shrimps"). The soybean typifies the diversity of ways in which a single resource might be used. The beans are first simmered and reduced to a purée, from which the "milk" is strained off. This milk is then dried to make the nutritious and easily digestible bean curd that is used in many Chinese dishes. The purée itself is put in a cool, dark place to ferment, after which it is soaked in brine for a few weeks. This liquid, after straining, becomes soy sauce; and even the residue in the strainer is used to make a thick, flavorful "cheese." In addition to curd, sauce, and cheese, the soybean yields an oil for cooking and a flour with a high protein content; or the bean can be sprouted and eaten raw.

In the thirteenth century, toward the end of the Sung Dynasty, Marco Polo traveled to China from Venice, the most cosmopolitan city in Europe, and he was enormously impressed by the Chinese cuisine. By then it had become, with minor exceptions, what it is today: a cuisine emphasizing variety of preparation, short cooking time, a mixture of small pieces, and the use of whatever resources are available. Every scrap of meat from the slaughterhouse was utilized: Soups and other dishes were made from the blood, heart, kidneys, lungs, entrails, and even the caul surrounding a newborn animal. One contemporaneous source listed 234 dishes, apparently all well known at the time, that could be made from flesh, fowl, and fish and from vegetable imitations of these. By the time of Marco Polo, three of the great regional styles known today had likewise already developed: northern (Peking), southern (Shanghai), and Szechuanese. The northern cuisine was bland, the meat used was usually lamb, and both wheat and millet went into a variety of dumplings, noodles, buns, and cakes. Southern cooking was more highly seasoned; it used pork and fish in larger quantities, and its staple plant was rice. As is still true today, Szechuanese cuisine in many ways resembled the southern but
was much spicier, making use of peppers and a fiery kind of pea. A fourth regional style, the Cantonese, has since been developed. It is midway between the bland dishes of Shanghai and the spicy ones of Szechwan, uses more grease than the northern, and emphasizes the blending of flavors, such as those of pork and salted fish.

During the Sung Dynasty, people looked on eating as an expressive act, which revealed not only where the diners came from and what their social position was, but even indicated their religious and moral beliefs. To travel meant not so much to see sights as to encounter different kinds of food; staying at home was almost as good because of the variety of foods available with each new season. Virtually every important event was in some way connected with eating. Worship included the ritual offering of food to dead ancestors or the gods. Eating involved such intellectual pursuits as combing ancient documents for forgotten recipes; philosophical and moral statements often used the metaphors of eating.

The earliest restaurants of which we have knowledge originated during the T'ang Dynasty (A.D. 618–907). By the time of the Sung Dynasty, which succeeded the T'ang, restaurants were providing food from every region of China; they were a place to find sociability and companionship, a drinking partner, and sex. In fact, the Sung restaurants served sex as much as they served food. Expensive restaurants lined the Imperial Way through the center of Hangchow; some of them were several stories high, with as many as 110 private dining rooms, to which one of the several hundred prostitutes associated with the restaurant could be invited. Somewhat less elegant establishments specialized in particular styles or categories of cooking, such as vegetarian dishes prepared according to Buddhist principles. There were also laborers' restaurants, which usually sold only noodle dishes or soups. Even today, the Chinese possibly eat out more than people in any other society. At least half of the inhabitants of Canton eat breakfast outside their homes; Shanghai alone has some 12,000 restaurants; in Peking, numerous restaurants are open twenty-four hours a day so that workers on night shifts can eat out.

Everything about the way the Chinese have traditionally eaten illustrates with particular clarity the major characteristics of a cuisine: the combined influences of the environment (the avail-

ability of certain foodstuffs), culture (the technology for producing and preparing food as well as the social and economic systems), and ideology (the body of beliefs about food and its place in society). In addition, a cuisine that endures must be adaptive in providing adequate nutrition. In this respect also the history of Chinese cuisine revolves around the attitude that food and health are inseparable. Good health is not simply an absence of disease; it involves the maintenance of vital energy by a harmonious balance of different foods and drinks. A proper diet will taste good, provide diversity, and be eaten in moderation. In other words, to the Chinese an elegant diet is also a healthful one.

The cuisine of the United States differs greatly from that of China simply because its history is so entirely different. For at least 20,000 years, and possibly for as long as 40,000, the ancestors of the American Indians developed a diversity of cultures based on a wide range of foods obtained from the coasts, rivers and lakes, forests, plains, and deserts. The soils in most areas were extremely fertile, and on them the native Americans grew maize, several kinds of beans, squashes, peppers, and many other plants. The European colonists took advantage of the variety of conditions the continent offered. The coastal Carolinas provided excellent conditions for the cultivation of rice, which became a staple there; sugar cane was grown in the southern states, and in New England the native maple trees were tapped for sugar. And all along the coast the colonists could harvest the abundance of the sea: fishes everywhere, turtles in the south, and in the north the many codfish that had already given their name to Cape Cod.

As soon as a group of colonists made a settlement, they planted a garden, with various kinds of squash as the mainstay, and a field of maize, with beans growing among the stalks. These native crops, grown with techniques taught the colonists by the Indians, were easy to cultivate, easy to prepare, and easy to store in dried form. The first settlers were mostly poor farmers, and if they could not make a living in one place, they found it easy to pack their few belongings and move farther west. They could not rely on wheat as a grain crop because it took too long to mature and was difficult to cultivate; but a crop of maize could be grown in only six weeks on a patch of land near the cabin, without the
need for a plow and horses. Even at that time, Americans who
were on the move relied on “convenience foods.” Pioneers took
with them a few sacks of dried maize. If it was winter, they made
a bean porridge, frozen with a string run through it so it could
be hung out of the way of animals; pieces could afterwards easily
be broken off, thawed, and eaten. Another convenience food was
johnnycake made of cornmeal, which kept for a long time with-
out spoiling. (The name of this bread possibly began as “jour-
ney cake,” from being taken along while traveling.) Many travelers
also brought with them “pocket soup,” an aspic made from con-
centrated meat soup that was the predecessor of the bouillon cube.

Swine and chickens, both of which could forage for themselves,
were easily raised for meat, and were supplemented by the wild
foods of the land and waters. The passenger pigeon, until the last
wild one was shot in 1899, had been possibly the most abundant
bird ever to have existed on the planet; in 1810 the ornithologist
Alexander Wilson reported a flock a mile wide and 240 miles
long. Flocks of as many as a hundred wild turkeys, each weighing
up to forty pounds, abounded in the woods. Pheasants, partridges,
quail, ducks, and geese were plentiful. Such wild game provided
meat for the eastern cities well into the nineteenth century.
Fishes of many kinds were taken in large quantities with nets and
seines, but the oyster was the easiest of the foods from the sea to
harvest. Lobsters were enormous: Some were caught in New
York Bay measuring five feet in length.

This primeval abundance affected the emerging cuisine of
North America. It established the tradition of plenty that has
continued to this day and that made overeating by North Ameri-
cans a problem from the first, as Benjamin Franklin observed in
Poor Richard’s Almanac: “I saw a few die of starvation but hun-
dreds [die] of eating and drinking.” Abundance made a virtue of
large portions simply served. Except in the slave states, the high
cost of labor and the lack of domestic servants until the middle
of the nineteenth century ruled out foods that required pains-
taking preparation. North Americans from the beginning took
pride in offering food that was as forthright and without subtlety
as the pioneers who have been so extolled in literature, films, and
folklore. It was simple and nutritious, its essential flavors un-
masked by sauces and garnishes that might confuse the palate.
The carrot is an honest root, beef an undisguised slab of meat.

The ingredients are kept separate from one another — the beef,
the baked potato, the peas, the head-of-lettuce salad — all in
proper place, like the plain-spoken sentences so valued by North
Americans. None of the delicate modulations and shadings of
French cooking are to be found — and indeed, despite the early
and major influence of French culture on North America, its
cuisine was resisted until the present century. Democratic enthui-
siasm made a virtue out of simple and often tasteless food; any
catering to the delights of the palate was scorned as a sign of Old
World decadence. In the presidential campaign of 1840, for ex-
ample, the Whigs boasted that their candidate, William Henry
Harrison, lived on wholesome salted beef while his aristocratic
opponent, Martin Van Buren, lived on such effete luxuries as
strawberries, celery, and cauliflower. Harrison won, but his
frontier diet did not prevent him from catching pneumonia at
his inauguration; he died after only thirty-one days in office.

After the abundance of the continent, a second major influence
on the development of North American cuisine was the diversity
of cultures. The Indians contributed not only the crops that
would become staples, but also ways of preparing them. They gave
the colonists green beans, potatoes, onions, the sunflower, peanuts,
plums, many kinds of berries, and maple syrup; they taught the
colonists how to prepare succotash, hominy, and the dish that
would later be known as Boston baked beans. Various European
groups brought Old World recipes with them and then adapted
these to what they found in North America. The British con-
tributed, among other things, chicken pie, apple pie, and plum
pudding. The French influenced the making of soups, the use of
the tomato (a native plant that the colonists long ignored), fricas-
sees, and chowders. From the Spanish came sugar cane, the oranges
planted in Florida by Ponce de León, and wine-growing in Cali-
forina. The Spanish also introduced barbecuing, a technique they
learned from Caribbean Indians; they gave to it the word barba-
coo, which referred to the grid of sticks on which the meat was
roasted.

The Dutch added crullers and cole slaw, among other items,
to the cuisine; the Scotch contributed oatmeal and barley broth:
the Irish brought the potato back to its native New World soil;
Germans contributed various kinds of sausages, Bohemians cer-
tain cakes made from prunes and poppy seeds, Italians various
pasta dishes, and East European Jews bagels and gefilte fish. Foods brought from Africa with the slaves included okra, watermelon, and grain sorghum. These contributions from immigrant groups had in common the thrifty use of various parts of plants and animals that might otherwise be thrown away—as, for example, in the scrapple invented by the Pennsylvania “Dutch” (who were really Germans, their name a corruption of Deutsch), containing scraps of pork shoulder and pork liver, fried together with cornmeal, onions, cloves, and herbs. The recipes of the immigrants were often further adapted by the slaves who left their imprint on many dishes.

A third major characteristic of North American cuisine has been a willingness to experiment and to borrow from other cultures. Thomas Jefferson introduced macaroni to the United States, served French-fried potatoes, used vanilla as a flavoring, and experimented with ice cream. The cosmopolitanism of North American cuisine may be seen in the constituents of a hearty American breakfast. It usually begins with fruit, such as an orange (domesticated in the Mediterranean region) or a cantaloupe (domesticated in Persia). This is followed by a bowl of cereal made from grains (domesticated in the Near East if wheat, in China if rice, and in Middle America if maize) or by pancakes or waffles (both Dutch) with butter (originally a Near Eastern cosmetic). The breakfast might also include an egg (from a bird domesticated in Southeast Asia) and bacon (from an animal domesticated in the same region, salted and smoked by a process invented in northern Europe). It also includes a hot beverage, usually coffee (from Ethiopia by way of Arabia), tea (from Southeast Asia), or chocolate (from the Spaniards, who learned how to make it from the Aztec).

Yet another major aspect of the North American cuisine is the primitiveness given to certain staples. Much as Japanese cuisine relies upon rice and seafood, or that of southern Africa upon grain porridge with relishes, the North American cuisine has traditionally emphasized meat and maize. Very few other societies in the world give such prominence to meat as North Americans do, and far fewer regard meat as the focus of the meal and the other dishes as peripheral. In Japan during the seventeenth century, the only meat available was from wild game. Meat was also a luxury food in China during the same period; even the mandarins were content with only a few mouthfuls of pork or chicken. The same was true of the Near East: According to one estimate, the average amount of meat consumed by one person in Istanbul was between one-third of a sheep and a whole sheep—in an entire year.

The emphasis on meat in the North American cuisine can be traced to Europe, where at the time of settlement the diet included large amounts of it. From the Middle Ages onward, European tables had been loaded with meat, because of the vast areas, except around the Mediterranean, suitable for pasture. But as the population increased during the seventeenth century, the stock-raising that had become an integral part of agriculture began to decline along with the lands that might provide fodder for the herds. By then, though, the carnivorous tradition was already entrenched in North America. It was bolstered by the conditions of life on the frontier, which made killing wild game for food a necessity. The frontiersman entered the North American mythology as a symbol of masculinity, the crack shot who could always put meat on the table.

In the South and West in particular, pork was eaten, until as recently as early in this century, at least once a day and sometimes at all three meals. Harriet Martineau, an English traveler who visited the United States in the 1830s, complained that she found “little else than pork, under all manner of disguises.” The monotony of this diet did not cause concern; until late in the nineteenth century, all foods were thought to have the same nutritional value—to be, according to the prevailing conception, part of the same “universal aliment” that kept the body in good repair and that differed only in taste, texture, and the quantities that could be digested at a single meal. The pig was the ideal meat animal for the colonists; it needed little care, foraged for itself in the woods and forests, and prospered on the surplus maize that was grown. When butchered, it provided a large number of dishes. Choice cuts of meat were smoked and pickled; the ribs were roasted or cured into bacon; the liver, tongue, and brain were often eaten fresh; what might otherwise have been wasted parts were made into sausage and head cheese; excess fat was rendered into lard; even the large intestine was used to make chitterlings.

Equaling the pig in the variety of uses to which it could be put is maize, the plant staple of United States cuisine. Like the pig, it is adaptable, and grows in all the contiguous states and northward into Canada. It could be roasted fresh in the shuck;
after drying, it could be ground into meal to make porridge, griddle cakes, waffles, and a great variety of breads. Cornbread in its simplest form is a baked cake or “pone” made from meal, salt, and water. Variations on this basic recipe included the addition of milk, shortening, or eggs to make corn dodgers, hoe-cakes, corn muffins, and egg bread. Maize was also converted into hominy, made by soaking the kernels to remove the outer layer, after which they are boiled and eaten as a vegetable, or dried and ground into a coarse meal to make the thick porridge known as grits.

Much of what has been said here about North American cuisine has had to be in the past tense because of radical changes in recent decades. Agribusiness now spends billions of dollars speeding up the production and processing of food, developing new chemical additives to give it a character the original produce never had (plus preservatives so that after weeks or months on the grocery shelf it can still turn a profit) and packaging and advertising it—in short, exerting almost total control over what North Americans eat. It has had to be written in the past tense also because the cuisine that has emerged out of the bounty of a continent must now cope with deficiencies. Increasing numbers of the elderly, the poor, and the uneducated are undernourished, while even those belonging to the educated middle class sometimes eat so unwisely that they are malnourished. To the characteristics of North American eating must now increasingly be added inadequate nutrition.

Every cuisine is based to some extent on staple foods that are available in abundance. The cuisine of southern China would be unimaginable without bland rice to soak up the flavors, as would an American supermarket without foods derived from maize or a European diet without bread. Such staples almost always are the primary source of calories, and their production occupies a major part of the time allotted to providing food. They almost always are interwoven into religion, mythology, and history. The foods most extolled are those that also represent psychological security. When Hawaii was threatened with a shipping strike some years ago, people of Chinese and Japanese ancestry hoarded rice in preference to any other kind of food. For mainland North Americans, the equivalent is milk; troops returning home after World War II often asked for fresh milk as soon as they disembarked.

North American and Middle American Indians made the maize–beans–squash triad the cornerstone of their cuisine, yet they might have fastened upon numerous other plants that could easily have been domesticated (and indeed, some were). Fossil remains of the maize that was domesticated in Mexico seven thousand years ago show that the wild plant was no more conspicuous than many kinds of weeds growing today along roadsides; its ear was no larger than the filter tip on a cigarette, certainly too small to excite much interest as a source of food. Beans and squash in the wild state would similarly have been useful to the ancestors of American Indians only when little else was available. The flesh of wild squash is bitter and dry; wild beans are thick-skinned and bland. The wild forms of all three are today used in Mexico only as starvation foods. Why, then, were these particular ones selected?

Maize, beans, and squash offered certain advantages that the ancestors of the Indians must have recognized: They were easily stored, they were tolerant of habitats disturbed by humans, and they responded readily to efforts to increase their yield through cultivation and artificial selection. In other words, the three were not so much desirable foods in themselves as they were plants that lent themselves to domestication, permitting an increased yield while not increasing very much the energy expended to grow them. This was particularly true for maize, which spread from Mexico (and possibly also from an independent place of domestication in Peru) throughout the tropical and temperate regions of the Americas — and later, of course, throughout the world. In the course of domestication, maize underwent a greater change than any other of the world’s major crops, and it also made a wider adaptation to geographical conditions. Maize is today so thoroughly domesticated that it cannot reproduce without human help in scattering its seeds, owing to the tough rachis that hold the kernels to the ear.

Descendants of the wild ancestors of maize still grow abundantly as weeds on soils that have been disturbed. Hunter–gatherers returning to a campsite they had cleared the previous year would probably have found clumps of them flourishing. If so, no conscious act of domestication would have been needed at first. The
cultivation of beans and squash must also have begun around the same time, as excavations in Mexico indicate; wild beans and wild squash grow in disturbed soils of the same sort as wild maize, with the beans even twining around the stalks for support. In focusing their attention on maize, beans, and squash, the domesticators thus merely had to copy a natural model. Both in their habits of growth and in the nutrition they offer, the three plants complement one another. Beans, like other legumes, enrich the soil for the maize and squash by means of nitrogen-fixing bacteria that are supported by their roots; the spreading leaves of squash plants shade the soil against loss of moisture and suppress the growth of weeds. Maize is deficient in the amino acid lysine, without which the human body cannot utilize the plant’s protein, whereas beans have a high lysine content. Thus the two foods eaten together provide a much more nutritious diet than either one alone.

Hunter-gatherers, even though they do not plant, also have their abundant, reliable, and nutritious staples. The wild mongongo nuts gathered by the San are as reliable as any cultivated crop, and an abundant supply is produced year after year. The San consume millions of mongongo nuts during at least eight months out of the twelve; even so, the nuts are so abundant that millions more are left on the ground to rot. Their nutritional value surpasses that of most cultivated staples. As compared even to the nutritious peanut, mongongo nuts contain considerably more protein, about three times as much calcium, double the potassium, and almost exactly the same amount of iron, along with large amounts of vitamins and minerals. Although the diet of the San includes about eighty-five species of plants, the mongongo alone provides, on the average, about forty percent of their daily energy requirements.

Plants, being unable to flee from the animals that seek to devour them, have been under continuous evolutionary pressure to develop protective toxins. Humans have nevertheless been ingenious enough to overcome these defenses and convert a number of toxic foods to their own use. A white potato of average size contains ninety parts per million of the poison solanine—a concentration that can increase rapidly if it is exposed to the sun after being dug. Eating only four or five of them could produce symptoms of poisoning. Among other common foods, spinach and rhubarb contain significant quantities of the toxin oxalate, which lowers the concentration of calcium in the body and consequently causes acute nephritis, nervous disorders, and a reduction in the ability of the blood to coagulate. Dogs, horses, and cattle allowed to feed freely on onions have developed symptoms of anemia within a week. No society is known in which it is customary to eat onions, spinach, or rhubarb in quantities large enough to produce poisoning. The same thing was true also of the white potato under aboriginal conditions in South America; it was after potatoes became a staple food in several parts of the world, notably in Ireland, that they began to be consumed in large quantities, and cases of poisoning began to be reported in the medical literature.

A still more toxic plant is manioc or cassava, the root crop that is eaten by perhaps 250 million people, primarily in South America and West Africa. The importance of manioc as a staple is easy to understand. It yields more calories per unit of land than any cereal grain, requires less labor, and can grow in a greater variety of soils, including those that have been depleted of nutrients. Mature tubers can be left in the ground for as long as two years before they spoil, thus becoming a reserve against hunger. Manioc frees tropical people from agricultural labor and allows them to devote more of their energy to obtaining protein. Until it is processed, though, manioc is toxic because of its large content of cyanide, and this must be removed by a complicated series of steps that involve peeling, grating, crushing, and rinsing. Once the cyanide has been removed, virtually all of the plant is utilized: The leaves are fermented with peppers to make a relish that is rich in vitamins; the flour is used for bread and cakes: manioc starch goes into the bland pudding known as tapioca; the stock is used in soups; and the tuber is used to make beer.

Since the process of making manioc and other toxic plants edible is so difficult, the question naturally arises: How did humans ever determine in the first place which plants were safe to eat? A partial answer comes from the Tonga of Zimbabwe who were resettled by the Rhodesian government for political reasons. Their experience with strange foods in a new environment was probably similar to what happened through the centuries in the region from which they had been forced to move. People already inhabiting the new location represented an important source of infor-
mation about which of the unfamiliar plants might be eaten safely and about ways in which the toxins might be removed from others. The information was not always reliable, though, because a number of deaths from poisoning occurred almost immediately; the Tonga in the future avoided these and also several shrubs whose fruit caused stomach upsets. They further tested the safety of new foods by allowing their dogs to eat them first. By such methods, the Tonga eventually developed a repertory of new foods and processes for preparing them. Much the same thing must have occurred in the past.

Among the important societal rules that represent one component of cuisine are table manners. As a socially instilled form of conduct, they reveal the attitudes typical of a society. Changes in table manners through time, as they have been documented for western Europe, likewise reflect fundamental changes in human relationships. Medieval courtiers saw their table manners as distinguishing them from crude peasants; but by modern standards, the manners were not exactly refined. Feudal lords used their unwashed hands to scoop food from a common bowl and they passed around a single goblet from which all drank. A finger or two would be extended while eating, so as to be kept free of grease and thus available for the next course, or for dipping into spices and condiments — possibly accounting for today's "polite" custom of extending the little finger while holding a spoon or small fork. Soups and sauces were commonly drunk by lifting the bowl to the mouth; several diners frequently ate from the same bread trencher. Even lords and nobles would toss gnawed bones back into the common dish, wolf down their food, spit onto the table (preferred conduct called for spitting under it), and blew their noses into the tablecloth.

By about the beginning of the sixteenth century, table manners began to move in the direction of today's standards. The importance attached to them is indicated by the phenomenal success of a treatise, On Civility in Children, by the philosopher Erasmus, which appeared in 1530; reprinted more than thirty times in the next six years, it also appeared in numerous translations. Erasmus' idea of good table manners was far from modern, but it did represent an advance. He believed, for example, that an upper-class diner was distinguished by putting only three fingers of one hand into the bowl, instead of the entire hand in the manner of the lower class. Wait a few moments after being seated before you dip into it, he advises. Do not poke around in your dish, but take the first piece you touch. Do not put chewed food from the mouth back on your plate; instead, throw it under the table or behind your chair.

By the time of Erasmus, the changing table manners reveal a fundamental shift in society. People no longer ate from the same dish or drank from the same goblet, but were divided from one another by a new wall of constraint. Once the spontaneous, direct, and informal manners of the Middle Ages had been repressed, people began to feel shame. Defecation and urination were now regarded as private activities; handkerchiefs came into use for blowing the nose; nightclothes were now worn, and bedrooms were set apart as private areas. Before the sixteenth century, even nobles ate in their vast kitchens; only then did a special room designated for eating come into use away from the bloody sides of meat, the animals about to be slaughtered, and the bustling servants. These new inhibitions became the essence of "civilized" behavior, distinguishing adults from children, the upper classes from the lower, and Europeans from the "savages" then being discovered around the world. Restraint in eating habits became more marked in the centuries that followed. By about 1800, napkins were in common use, and before long they were placed on the thighs rather than wrapped around the neck; coffee and tea were no longer slurped out of the saucer; bread was gendy broken into small pieces with the fingers rather than cut into large chunks with a knife.

Numerous paintings that depict meals — with subjects such as the Last Supper, the wedding at Cana, or Herod's feast — show what dining tables looked like before the seventeenth century. Forks were not depicted until about 1600 (when Jacopo Bassano painted one in a Last Supper), and very few spoons were shown. At least one knife is always depicted — especially a large one when it is the only one available for all the guests — but small individual knives were often at each place. Tin disks or oval pieces of wood had already replaced the bread trenchers. This change in eating utensils typified the new table manners in Europe. (In many other parts of the world, no utensils at all were
used. In the Near East, for example, it was traditional to bring food to the mouth with the fingers of the right hand, the left being unacceptable because it was reserved for wiping the buttocks.) Utensils were employed in part because of a change in the attitude toward meat. During the Middle Ages, whole sides of meat, or even an entire dead animal, had been brought to the table and then carved in view of the diners. Beginning in the seventeenth century, at first in France but later elsewhere, the practice began to go out of fashion. One reason was that the family was ceasing to be a production unit that did its own slaughtering; as that function was transferred to specialists outside the home, the family became essentially a consumption unit. In addition, the size of the family was decreasing, and consequently whole animals, or even large parts of them, were uneconomical. The cuisines of Europe reflected these social and economic changes. The animal origin of meat dishes was concealed by the arts of preparation. Meat itself became distasteful to look upon, and carving was moved out of sight to the kitchen. Comparable changes had already taken place in Chinese cuisine, with meat being cut up beforehand, unobserved by the diners. England was an exception to the change in Europe, and in its former colonies—the United States, Canada, Australia, and South Africa—the custom has persisted of bringing a joint of meat to the table to be carved.

Once carving was no longer considered a necessary skill among the well-bred, changes inevitably took place in the use of the knife, unquestionably the earliest utensil used for manipulating food. (In fact, the earliest English cookbooks were not so much guides to recipes as guides to carving meat.) The attitude of diners toward the knife, going back to the Middle Ages and the Renaissance, had always been ambivalent. The knife served as a utensil, but it offered a potential threat because it was also a weapon. Thus taboos were increasingly placed upon its use: It was to be held by the point with the blunt handle presented; it was not to be placed anywhere near the face; and most important, the uses to which it was put were sharply restricted. It was not to be used for cutting soft foods such as boiled eggs or fish, or round ones such as potatoes, or to be lifted from the table for courses that did not need it. In short, good table manners in Europe gradually removed the threatening aspect of the knife from social occasions.

A similar change had taken place much earlier in China when the warrior was supplanted by the scholar as a cultural model. The knife was banished completely from the table in favor of chopsticks, which is why the Chinese came to regard Europeans as barbarians at their table who “eat with swords.”

The fork in particular enabled Europeans to separate themselves from the eating process, even avoiding manual contact with their food. When the fork first appeared in Europe, toward the end of the Middle Ages, it was used solely as an instrument for lifting chunks from the common bowl. Beginning in the sixteenth century, the fork was increasingly used by members of the upper classes—first in Italy, then in France, and finally in Germany and England. By then, social relations in western Europe had so changed that a utensil was needed to spare diners from the “uncivilized” and distasteful necessity of picking up food and putting it into the mouth with the fingers. The addition of the fork to the table was once said to be for reasons of hygiene, but this cannot be true. By the sixteenth century people were no longer eating from a common bowl but from their own plates, and since they also washed their hands before meals, their fingers were now every bit as hygienic as a fork would have been. Nor can the reason for the adoption of the fork be connected with the wish not to soil the long ruff that was worn on the sleeve at the time, since the fork was also adopted in various countries where ruffs were not then in fashion.

Along with the appearance of the fork, all table utensils began to change and proliferate from the sixteenth century onward. Soup was no longer eaten directly from the dish, but each diner used an individual spoon for that purpose. When a diner wanted a second helping from the serving dish, a ladle or a fresh spoon was used. More and more special utensils were developed for each kind of food: soup spoons, oyster forks, salad forks, two-tined fondue forks, blunt butter knives, special utensils for various desserts and kinds of fruit, each one differently shaped, of a different size, with differently numbered prongs and with blunt or serrated edges. The present European pattern eventually emerged, in which each person is provided with a table setting of as many as a dozen utensils at a full-course meal. With that, the separation of the human body from the taking of food became virtually complete. Good table manners dictated that even the cobs of maize
were to be held by prongs inserted in each end, and the bones of lamb chops covered by ruffled paper pantalettes. Only under special conditions—as when Western people consciously imitate an earlier stage in culture at a picnic, fish fry, cookout, or campfire—do they still tear food apart with their fingers and their teeth, in a nostalgic reenactment of eating behaviors long vanished.

Today's neighborhood barbecue recreates a world of sharing and hospitality that becomes rarer each year. We regard as a curiosity the behavior of hunters in exotic regions. But every year millions of North Americans take to the woods and lakes to kill a wide variety of animals—with a difference, of course: What hunters do for survival we do for sport (and also for proof of masculinity, for male bonding, and for various psychological rewards). Like hunters, too, we stuff ourselves almost whenever food is available. Nibbling on a roasted ear of maize gives us, in addition to nutrients, the satisfaction of participating in culturally simpler ways. A festive meal, however, is still thought of in Victorian terms, with the dominant male officiating over the roast, the dominant female apportioning vegetables, the extended family gathered around the table, with everything in its proper place—a revered picture, as indeed it was so painted by Norman Rockwell, yet one that becomes less accurate with each year that passes.