A
n aphrodisiac for the sense receptors. Read a chapter, then step outside and voilà: The sky is a deeper blue, the birds sing a sweeter song. How could the world seem otherwise, after feasting on voluptuous prose like this? — Chicago Tribune

If Colette had studied science and spent time listening to icebergs in Antarctica and interviewing a professional nose in New York, she might have written a book as luscious and erudite as *A Natural History of the Senses*. In the course of this grand tour of the realm of the senses, Diane Ackerman writes about the evolution of the kiss, the sadistic cuisine of eighteenth-century England, the chemistry of pain, and the melodies of the planet Earth with an evocativeness and charm that make the book itself a marvel of literate sensuality.

“A wonderful idea for a narrative journey, one that touches upon biology and anthropology, art and human consciousness...a heady, sometimes utterly engaging dive into the world around us—from the hormonal effects of the smell of musk to the biological necessity of touch...Ackerman’s poetic vision allows her to find mystery and meaning in the most personal and idiosyncratic places.” — Boston Globe

“Delightful...gives the reader the richest possible feeling of the worlds the senses take in.” — Christopher Lehmann-Haupt, *The New York Times*
Taste

Those... from whom nature has withheld the legacy of taste, have long faces, and long eyes and noses, whatever their height there is something elongated in their proportions. Their hair is dark and ungly, and they are never plump; it was they who invented trousers.

Anthelme Brillat-Savarin, The Physiology of Taste
THE SOCIAL SENSE

The other senses may be enjoyed in all their beauty when one is alone, but taste is largely social. Humans rarely choose to dine in solitude, and food has a powerful social component. The Bantu feel that exchanging food makes a contract between two people who then have a “clanship of porridge.” We usually eat with our families, so it’s easy to see how “breaking bread” together would symbolically link an outsider to a family group. Throughout the world, the stratagems of business take place over meals; weddings end with a feast; friends reunite at celebratory dinners; children herald their birthdays with ice cream and cake; religious ceremonies offer food in fear, homage, and sacrifice; wayfarers are welcomed with a meal. As Brillat-Savarin says, “every . . . sociability . . . can be found assembled around the same table: love, friendship, business, speculation, power, importunity, patronage, ambition, intrigue . . .” If an event is meant to matter emotionally, symbolically, or mystically, food will be close at hand to sanctify and bind it. Every culture uses food as a sign of approval or commemoration, and some foods are even credited with supernatural powers, others eaten symbolically, still others eaten ritualistically, with ill fortune befalling dullards or skeptics who forget the recipe or get the order of events wrong. Jews attending a Seder eat a horseradish dish to symbolize the tears shed by their ancestors when they were slaves in Egypt. Malays celebrate important events with rice, the inspirational center of their lives. Catholics and Anglicans take a communion of wine and wafer. The ancient Egyptians thought onions symbolized the many-layered universe, and swore oaths on an onion as we might on a Bible. Most cultures
embellish eating with fancy plates and glasses, accompany it with parties, music, dinner theater, open-air barbecues, or other forms of revelry. Taste is an intimate sense. We can’t taste things at a distance. And how we taste things, as well as the exact makeup of our saliva, may be as individual as our fingerprints.

Food gods have ruled the hearts and lives of many peoples. Hopi Indians, who revere corn, eat blue corn for strength, but all Americans might be worshiping corn if they knew how much of their daily lives depended on it. Margaret Visser, in *Much Depends on Dinner*, gives us a fine history of corn and its uses: livestock and poultry eat corn; the liquid in canned foods contains corn; corn is used in most paper products, plastics, and adhesives; candy, ice cream, and other goodies contain corn syrup; dehydrated and instant foods contain cornstarch; many familiar objects are made from corn products, brooms and corncob pipes to name only two. For the Hopis, eating corn is itself a form of reverence. I’m holding in my hand a beautifully carved Hopi corn kachina doll made from cottonwood; it represents one of the many spiritual essences of their world. Its cob-shaped body is painted ocher, yellow, black, and white, with dozens of squares drawn in a cross-section-of-a-kernel design, and abstract green leaves spearing up from below. The face has a long, black, rootlike nose, rectangular black eyes, a black ruff made of rabbit fur, white string corn-silk-like ears, brown bird-feather bangs, and two green, yellow, and ochre striped horns topped by rawhide tassels. A fine, soulful kachina, the ancient god Ma’i s stares back at me, tastefully imagined.

Throughout history, and in many cultures, *taste* has always had a double meaning. The word comes from the Middle English *tasten*, to examine by touch, test, or sample, and continues back to the Latin *tacare*, to touch sharply. So a taste was always a trial or test. People who have taste are those who have appraised life in an intensely personal way and found some of it sublime, the rest of it lacking. Something in bad taste tends to be obscene or vulgar. And we defer to professional critics of wine, food, art, and so forth, whom we trust to taste things for us because we think their taste more refined or educated than ours. A companion is “one who eats bread with another,” and people sharing food as a gesture of peace or hospitality like to sit around and chew the fat.

The first thing we taste is milk from our mother’s breast,* accompanied by love and affection, stroking, a sense of security, warmth, and well-being, our first intense feelings of pleasure. Later on she will feed us solid food from her hands, or even chew food first and press it into our mouths, partially digested. Such powerful associations do not fade easily, if at all. We say “food” as if it were a simple thing, an absolute like rock or rain to take for granted. But it is a big source of pleasure in most lives, a complex realm of satisfaction both physiological and emotional, much of which involves memories of childhood. Food must taste good, must reward us, or we would not stoke the furnace in each of our cells. We must eat to live, as we must breathe. But breathing is involuntary, finding food is not; it takes energy and planning, so it must tantalize us out of our natural torpor. It must decoy us out of bed in the morning and prompt us to put on constricting clothes, go to work, and perform tasks we may not enjoy for eight hours a day, five days a week, just to “earn our daily bread,” or be “worth our salt,” if you like, where the word *salary* comes from. And, because we are omnivores, many tastes must appeal to us, so that we’ll try new foods. As children grow, they meet regularly throughout the day—at mealtimes—to hear grown-up talk, ask questions, learn about customs, language, and the world. If language didn’t arise at mealtimes, it certainly evolved and became more fluent there, as it did during group hunts.

We tend to see our distant past through a reverse telescope that compresses it: a short time as hunter-gatherers, a long time as “civilized” people. But civilization is a recent stage of human life, and, for all we know, it may not be any great achievement. It may not even be the final stage. We have been alive on this planet as recognizable humans for about two million years, and for all but the last two or three thousand we’ve been hunter-gatherers. We may sing in choirs and park our rages behind a desk, but we patrol the world

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*This special milk, called colostrum, is rich in antibodies, the record of the mother’s epidemiologic experience.*
with many of a hunter-gatherer’s drives, motives, and skills. These aren’t knowable truths. Should an alien civilization ever contact us, the greatest gift they could give us would be a set of home movies: films of our species at each stage in our evolution. Consciousness, the great poem of matter, seems so unlikely, so impossible, and yet here we are with our loneliness and our giant dreams. Speaking into the perforations of a telephone receiver as if through the screen of a confessional, we do sometimes share our emotions with a friend, but usually this is too disembodied, too much like yelling into the wind. We prefer to talk in person, as if we could temporarily slide into their feelings. Our friend first offers us food, drink. It is a symbolic act, a gesture that says: This food will nourish your body as I will nourish your soul. In hard times, or in the wild, it also says I will endanger my own life by parting with some of what I must consume to survive. Those desperate times may be ancient history, but the part of us forged in such trials accepts the token drink and piece of cheese and is grateful.

FOOD AND SEX

What would the flutterings of courtship be without a meal? As the deliciously sensuous and ribald tavern scene in Fielding’s Tom Jones reminds us, a meal can be the perfect arena for foreplay. Why is food so sexy? Why does a woman refer to a handsome man as a real dish? Or a French girl call her lover mon petit chou (my little cabbage)? Or an American man call his girlfriend cookie? Or a British man describe a sexy woman as a bit of crumpet (a flat, toasted griddlecake well lubricated with butter)? Or a tart? Sexual hunger and physical hunger have always been allies. Rapacious needs, they have coaxed and driven us through famine and war, to bloodshed and serenity, since our earliest days.

Looked at: in the right light, any food might be thought aphrodisiac. Phallic-shaped foods such as carrots, leeks, cucumbers, pickles, sea cucumbers (which become tumescent when soaked), eels, bananas, and asparagus all have been prized as aphrodisiacs at one time or another, as were oysters and figs because they reminded people of female genitalia; caviar because it was a female’s eggs; rhinoceros horn, hyena eyes, hippopotamus snout, alligator tail, camel hump, swan genital, dove brains, and goose tongues, on the principle that anything so rare and exotic must have magical powers; prunes (which were offered free in Elizabethan brothels); peaches (because of their callipygous rumps?); tomatoes, called “love apples,” and thought to be Eve’s temptation in the Garden of Eden; onions and potatoes, which look testicular, as well as “prairie oysters,” the cooked testicles of a bull; and mandrake root, which looks like a man’s thighs and penis. Spanish fly, the preferred aphrodisiac of the Marquis de Sade, with which he laced the bonbons he fed prostitutes and friends, is made by crushing a southern European beetle. It contains a gastrointestinal irritant and also produces a better blood flow, the combination of which brings or a powerful erection of either the penis or the clitoris, but also damages the kidneys; it can even be fatal. Musk, chocolate, and truffles also have been considered aphrodisiac and, for all we know, they might well be. But, as sages have long said, the sexiest part of the body and the best aphrodisiac in the world is the imagination.

Primitive peoples saw creation as a process both personal and universal, the earth’s yielding food, humans (often molded from clay or dust) burgeoning with children. Rain falls from the sky and impregnates the ground, which brings forth fruit and grain from the tawny flesh of the earth—an earth whose mountains look like reclining women, and whose springs spurt like healthy men. Fertility rituals, if elaborate and frenzied enough, could encourage Nature’s bounty. Cooks baked meats and breads in the shape of genitals, especially penises, and male and female statues with their sexual organs exaggerated presided over orgiastic festivities where sacred couples copulated in public. A mythic Gaia poured milk from her breasts and they became the galaxies. The ancient Venus figures with global breasts, swollen bellies, and huge buttocks and thighs symbolized the female life-force, mother to crops and humans. The earth itself was a goddess, curvy and ripe, radiant with fertility, aspil with riches. People have thought the Venus figures imaginative exaggerations, but women of that time may indeed have resembled
them, all breasts, belly, and rump. When pregnant, they would have bulged into quite an array of shapes.

Food is created by the sex of plants or of animals; and we find it sexy. When we eat an apple or peach, we are eating the fruit’s placenta. But, even if that weren’t so, and we didn’t subconsciously associate food with sex, we would still find it sexy for strictly physical reasons. We use the mouth for many things—to talk and kiss, as well as to eat. The lips, tongue, and genitals all have the same neural receptors, called Krause’s end bulbs, which make them ultrasonic, highly charged. There’s a similarity of response.

A man and woman sit across from one another in a dimly lit restaurant. A small bouquet of red-and-white spider lilies sweetens the air with a cinnamonlike tingle. A waiter passes with a plate of rabbit sausage in molé sauce. At the next table, a blueberry soufflé oozes scent. Oysters on the half shell, arranged on a large platter of shaved ice, one by one polish the woman’s tongue with silken saltiness. A fennel-scented steam rises from thick crab cakes on the man’s plate. Small loaves of fresh bread breathe sweetly. Their, brush as they both reach for the bread. He stares into her eyes, as if filling them with molten lead. They both know where this delicious prelude will lead. “I’m so hungry,” she whispers.

**THE OMNIVORE’S PICNIC**

You have been invited to dinner at the home of extraterrestrials, and asked to bring friends. Being considerate hosts, they first inquire if you have any dietary allergies or prohibitions, and then what sort of food would taste good to you. What do humans eat? they ask. Images cascade through your mind, a cornucopia of plants, animals, minerals, liquids, and solids, in a vast array of cuisines. The Masai enjoy drinking cow’s blood. Oriental eat stir-fried puppy. Germans eat rancid cabbage (sauerkraut), Americans eat decaying cucumbers (pickles), Italians eat whole deep-fried songbirds, Vietnamese eat fermented fish doused with chili peppers, Japanese and others eat fungus (mushrooms), French eat garlic-soaked snails. Upper-class Aztecs ate roasted dog (a hairless variety named *xquitli*), which is still bred in Mexico). Chinese of the Chou dynasty liked rats, which they called “household deer,” and many people still do eat rodents, as well as grasshoppers, snakes, flightless birds, kangaroos, lobsters, snails, and bats. Unlike most other animals, which fill a small yet ample niche in the large web of life on earth, humans are omnivorous. The Earth offers perhaps 20,000 edible plants alone. A poor season for eucalyptus will wipe out a population of koala bears, which have no other food source. But human beings are Nature’s great librarians and revisers. Diversity is our delight. In time of drought, we can ankole off to a new locale, or break open a cactus, or dig a well. When plagues of locusts destroy our crops, we can forage on wild plants and roots. If our herds die, we find protein in insects, beans, and nuts. Not that being an omnivore is easy. A koala bear doesn’t have to worry about whether or not its next mouthful will be toxic. In fact, eucalyptus is highly poisonous, but a koala has an elaborately protective gut, so it just eats eucalyptus, exactly as its parents did. Cows graze without fear on grass and grain. But omnivores are anxious eaters. They must continually test new foods to see if they’re palatable and nutritious, running the risk of inadvertently poisoning themselves. They must take chances on new flavors, and, doing so, they frequently acquire a taste for something offbeat that, though nutritious, isn’t the sort of thing that might normally appeal to them—chili peppers (which Columbus introduced to Europe), tobacco, alcohol, coffee, artichokes, or mustard, for instance. When we were hunter-gatherers, we ate a great variety of foods. Some of us still do, but more often we add spices to what we know, or find at hand, for variety, as we like to say. Monotony isn’t our code. It’s safe, in some ways, but in others it’s more dangerous. Most of us prefer our foods cooked to the steaminess of freshly killed prey. We don’t have ultrasharp carnivore’s teeth, but we don’t need them. We’ve created sharp tools. We do have incisor teeth for slicing fruits, and molars for crushing seeds and nuts, as well as canines for ripping

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*It was the food-obsessed Chinese who started the first serious restaurants during the time of the Tang dynasty (A.D. 618–907). By the time the Sung dynasty replaced the Tang, they were all-purpose buildings, with many private dining rooms, where one went for food, sex, and barroom gab.*
flesh. At times, we eat nasturtiums and pea pods and even the effluvia from the mammary glands of cows, churned until it curdles, or frozen into a solid and attached to pieces of wood.

Our hosts propose a picnic, since their backyard is a meadow lit by two suns, and they welcome us and our friends. Our Japanese friend chooses the appetizer: sushi, including shrimp still alive and wriggling. Our French friend suggests a baguette, or better still croissants, which have an unlikely history, which he insists on telling everyone: To celebrate Austria’s victory against the invading Ottoman Turks, bakers created pastry in the shape of the crescent on the Turkish flag, so that the Viennese could devour their enemies at table as they had on the battlefield. Croissants soon spread to France and, during the 1920s, traveled with other French ways to the United States. Our Amazonian friend chooses the main course—nuptial kings and queens of leaf-cutter ants, which taste like walnut butter, followed by roasted turtle and sweet-fleshed piranha. Our German friend insists that we include some spaetzle and a loaf of darkest pumpernickel bread, which gets its name from the verb *pumpern*, “to break wind,” and *Nickel*, “the devil,” because it was thought to be so hard to digest that even the devil would fart if he ate it. Our Tasaday friend wants some natek, a starchy paste his people make from the insides of caryota palm trees. The English cousin asks for a small platter of potted ox tongues, very aged blue cheese, and, for dessert, trifle—whipped cream and slivered almonds on top of a jam-and-custard pudding thick with sherry-soaked ladyfingers.

To finish our picnic lunch, our Turkish friend proposes coffee in the Turkish style—using a mortar and pestle to break up the beans, rather than milling them. To be helpful, he prepares it for us all, pouring boiling water over coffee grounds through a silver sieve into a pot. He brings this to a light boil, pours it through the sieve again, and offers us some of the clearest, brightest coffee we’ve ever tasted. According to legend, he explains, coffee was discovered by a ninth-century shepherd, who one day realized that his goats were becoming agitated whenever they browsed on the berries of certain bushes. For four hundred years, people thought only to chew the berries.

Raw coffee doesn’t brew into anything special, but in the thirteenth century someone decided to roast the berries, which releases a pungent oil and the mossy-bitter aroma now so familiar to us. Our Indian friend passes round cubes of sugar, which we are instructed to let melt on the tongue as we sip our coffee, and our minds roam back to the first recorded instance of sugar, in the Atharvaveda, a sacred Hindu text from 800 B.C., which describes a royal crown made of glittering sugar crystals. Then he circulates a small dish of coriander seeds, and we pinch a few in our fingers, set them on our tongues, and feel our mouths freshen from the aromatic tang. A perfect picnic. We thank our hosts for laying on such a splendid feast, and invite them to our house for dinner next. “What do jujubarians eat?” we ask.

**OF CANNIBALISM AND SACRED COWS**

Even though grass soup was the main food in the Russian gulags, according to Solzhenitsyn’s *One Day in the Life of Ivan Denisovich*, humans don’t prefer wood, or leaves, or grass—the cellulose is impossible to digest. We also can’t manage well eating excrement, although some animals adore it, or chalk or petroleum. On the other hand, cultural taboos make us spurn many foods that are wholesome and nourishing. Jews don’t eat pork, Hindus don’t eat beef, and Americans in general won’t eat dog, rat, horse, grasshopper, grubs, or many other palatable foods prized by peoples elsewhere in the world. Anthropologist Claude Lévi-Strauss found that primitive tribes designated foods “good to think” or “bad to think.” Necessity, the mother of invention, fathers many codes of conduct. Consider the “sacred cow,” an idea so shocking it has passed into our vocabulary as a thing, event, or person considered sacrosanct. Though India has a population of around 700 million and a constant need for protein, over two hundred million cattle are allowed to roam the streets as deities while many people go hungry. The cow plays a central role in Hinduism. As Marvin Harris explains in *The Sacred Cow and the Abominable Pig*:
Cow protection and cow worship also symbolize the protection and adoration of human motherhood. I have a collection of colorful Indian pin-up calendars depicting jewel-bedecked cows with swollen udders and the faces of beautiful human madonnas. Hindu cow worshippers say: “The cow is our mother. She gives us milk and butter. Her male calves till the land and give us food.” To critics who oppose the custom of feeding cows that are too old to have calves and give milk, Hindus reply: “Will you then send your mother to a slaughter house when she gets old?”

Not only is the cow sacred in India, even the dust in its hoofprints is sacred. And, according to Hindu theology, 330 million gods live inside each cow. There are many reasons why this national vandalism has come about; one factor may be that an overcrowded land such as India can’t support the raising of livestock for food, a system that is extremely inefficient. When people eat animals that have been fed grains, “nine out of ten calories and four out of five grams of protein are lost for human consumption.” The animal uses up most of the nutrients. So vegetarianism may have evolved as a remedy, and been ritualized through religion. “I feel confident that the rise of Buddhism was related to mass suffering and environmental depletions,” Harris writes, “because several similar nonkilling religions . . . arose in India at the same time.” Including Jainism, whose priests not only tend stray cats and dogs, but keep a separate room in their shelters just for insects. When they walk down the street, an assistant walks ahead of them to brush away any insects lest they get stepped on, and they wear gauze masks so they don’t accidentally inhale a wayward midge or other insect.

One taboo stands out as the most fantastic and forbidden. “What’s eating you?” a man may ask an annoyed friend. Even though his friend just got fired by a tyrannical boss with a mind as small as a nose, he would never think to say “Who’s eating you?” The idea of cannibalism is so far from our ordinary lives that we can safely use the euphemism eat in a sexual context, say, and no one will think we mean literally consume. But omnivores can eat any-

thing, even each other,* and human flesh is one of the finest sources of protein. Primitive peoples all over the world have indulged in cannibalism, always ritualistically, but sometimes as a key source of protein missing from their diets. For many it’s a question of head-hunting, displaying the enemy’s head with much magic and flourish; and then, so as not to be wasteful, eating the body. In Britain’s Iron Age, the Celts consumed large quantities of human flesh. Some American Indian tribes tortured and ate their captives, and the details (reported by Christian missionaries who observed the rites) are hair-raising. During one four-night celebration in 1487, the Aztecs were reported to have sacrificed about eighty thousand prisoners, whose flesh was shared with the gods, but mainly eaten by a huge meat-hungry population. In The Power of Myth, the late Joseph Campbell, a wise observer of the beliefs and customs of many cultures, tells of a New Guinea cannibalism ritual that “enacts the planting-society myth of death, resurrection and cannibalistic consumption.” The tribe enters a sacred field, where they chant and beat drums for four or five days, and break all the rules by engaging in a sexual orgy. In this rite of manhood, young boys are introduced to sex for the first time:

There is a great shed of enormous logs supported by two uprights. A young woman comes in ornamented as a deity, and she is brought to lie down in this place beneath the great roof. The boys, six or so, with the drums going and chanting going, one after another, have their first experience of intercourse with the girl. And when the last boy is with her in full embrace, the supports are withdrawn, the logs drop, and the couple is killed. There is the union of male and female . . . as they were in the beginning. . . . There is the union of begetting and death. They are both the same thing.

Then the couple is pulled out and roasted and eaten that very evening. The ritual is the repetition of the original act of the killing of a god followed by the coming of food from the dead savior.

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*In German, humans eat (essen), but animals devour or feed (fressen). Cannibals are called Menschenfresser—humans who become animals when they eat.
When the explorer Dr. Livingstone died in Africa, his organs were apparently eaten by two of his native followers as a way to absorb his strength and courage. Taking communion in the Catholic Church enacts a symbolic eating of the body and blood of Christ. Some forms of cannibalism were more bloodthirsty than others. According to Philippa Pullar, Druid priests "attempted divination by stabbing a man above his midriff, foretelling the future by the convulsions of his limbs and the pouring of his blood... Then... they devoured him." Cannibalism doesn't horrify us because we find human life sacred, but because our social taboos happen to forbid it, or, as Harris says: "the real conundrum is why we who live in a society which is constantly perfecting the art of mass-producing human bodies on the battlefield find humans good to kill but bad to eat."*

**THE BLOOM OF A TASTE BUD**

Seen by scanning electron microscope, our taste buds look as huge as volcanoes on Mars, while those of a shark are beautiful mounds of pastel-colored tissue paper—until we remember what they're used for. In reality, taste buds are exceedingly small. Adults have about 10,000, grouped by taste (salt, sour, sweet, bitter), at various sites in the mouth. Inside each one, about fifty taste cells busily relay information to a neuron, which will alert the brain. Not much tasting happens in the center of the tongue, but there are also incidental taste buds on the palate, pharynx, and tonsils, which cling like bats to the damp, slimy limestone walls of a cave. Rabbits have 17,000 taste buds, parrots only about 400, cows 25,000. What are they tasting? Maybe a cow needs that many to enjoy a relentless diet of grass.

At the tip of the tongue, we taste sweet things; bitter things at the back; sour things at the sides; and salty things spread over the surface, but mainly up front. The tongue is like a kingdom divided into principalities according to sensory talent. It would be as if all those who could see lived to the east, those who could hear lived to the west, those who could taste lived to the south, and those who could touch lived to the north. A flavor traveling through this kingdom is not recognized in the same way in any two places. If we lick an ice cream cone, a lollipop, or a cake-batter-covered finger, we touch the food with the tip of the tongue, where the taste buds for sweetness are, and it gives us an extra jolt of pleasure. A cube of sugar under the tongue won't taste as sweet as one placed on the tongue. Our threshold for bitter is the lowest. Because the taste buds for bitter lie at the back of the tongue, as a final defense against danger they can make us gag to keep a substance from sliding down the throat. Some people do, in fact, gag when they take quinine, or drink coffee for the first time, or try olives. Our taste buds can detect sweetness in something even if only one part in two hundred is sweet. Butterflies and blowflies, which have most of their taste organs on their front feet, need only step in a sweet solution to taste it. Dogs, horses, and many other animals have a sweet tooth, as we do. We can detect saltiness in one part in 400, sourness in one part in 130,000, but bitterness in as little as one part in 2,000,000. Nor is it necessary for us to recognize poisonous things as tasting different from one another; they just taste bitter. Distinguishing between bitter and sweet substances is so essential to our lives that it has burst through our language. Children, joy, a trusted friend, a lover all are referred to as "sweet." Regret, an enemy, pain, disappointment, a nasty argument all are referred to as "bitter." The "bitter pill" we metaphorically dread is likely to be poison.

Taste buds got their name from the nineteenth-century German scientists Georg Meissner and Rudolf Wagner, who discovered mounds made up of taste cells that overlap like petals. Taste buds wear out every week to ten days, and we replace them, although not as frequently over the age of forty-five—our palates really do become

*For an excellent discussion of cannibalism, and the nutritional facts that have prompted it in a variety of cultures (Ateans, Fijians, New Guineans, American Indians, and many others), including truly horrible and graphic accounts by eyewitnesses, see Harris's chapter on "People Eating."
jaded* as we get older. It takes a more intense taste to produce the same level of sensation, and children have the keenest sense of taste. A baby’s mouth has many more taste buds than an adult’s, with some even dotting the cheeks. Children adore sweets partly because the tips of their tongues, more sensitive to sugar, haven’t yet been blunted by years of gourmandizing or trying to eat hot soup before it cools. A person born without a tongue, or who has had his tongue cut out, still can taste. Brillat-Savarin tells of a Frenchman in Algeria who was punished for an attempted prison escape by having “the forepart of his tongue . . . cut off clear to the ligament.” Swallowing was difficult and tiring for him, although he could still taste fairly well, “but very sour or bitter things caused him unbearable pain.”

Just as we can smell something only when it begins to evaporate, we can taste something only when it begins to dissolve, and we cannot do that without saliva. Every taste we can imagine—from mangoes to hundred-year-old eggs—comes from a combination of the four primary tastes plus one or two others. And yet we can distinguish between tastes with finesse, as wine-, tea-, cheese- and other professional tasters do. The Greeks and Romans, who were sophisticated about fish, could tell just by tasting one what waters it came from. As precise as our sense of taste is, illusions can still surprise us. For example, MSG doesn’t taste saltier than table salt, but it really contains much more sodium. One of its ingredients, glutamate, blocks our ability to taste it as salty. A neurologist at the Albert Einstein College of Medicine once tested the amount of MSG in a bowl of wonton soup in a Chinese restaurant in Manhattan, and he found 7.5 grams of MSG, as much sodium as one should limit oneself to in an entire day.

After brushing our teeth in the morning, orange juice tastes bitter. Why? Because our taste buds have membranes that contain fatlike phospholipids, and toothpastes contains a detergent that breaks down fat and grease. So the toothpaste first assaults the membranes with its detergent, leaving them raw; then chemicals in the toothpaste, such as formaldehyde, chalk, and saccharin, cause a sour taste

*From the Middle English jaded, a broken-down horse that is spiritless and crippled by fatigue.
Smell hits us faster. It takes 25,000 times more molecules of cherry pie to taste it than to smell it. A head cold, by inhibiting smell, smotherstaste.

We normally chew about a hundred times a minute. But, if we let something linger in our mouth, feel its texture, smell its bouquet, roll it around on the tongue, then chew it slowly so that we can hear its echoes, what we're really doing is savoring it, using several senses in a gustatory free-for-all. A food's flavor includes its texture, smell, temperature, color, and painfulness (as in spices), among many other features. Creatures of sound, we like some foods to titillate our hearing more than others. There's a gratifying crunch to a fresh carrot stick, a seductive sizzle to a broiling steak, a rumbling frenzy to soup coming to a boil, an arousing munching and snapping to a bowl of breakfast cereal. "Food engineers," wizards of subtle persuasion, create products to assault as many of our senses as possible. Committees put a lot of thought into the design of fast foods. As David Bodanis points out with such good humor in The Secret House, potato chips are:

...an example of total destruction foods. The wild attack on the plastic wrap, the slashing and tearing you have to go through is exactly what the manufacturers wish. For the thing about crisp foods is that they're louder than non-crisp ones. . . . Destructopackaging sets a favorable mood. . . . Crisp foods have to be loud in the upper register. They have to produce a high-frequency shattering; foods which generate low-frequency rumblings are crunchy, or slurry but not crisp.

Companies design potato chips to be too large to fit into the mouth, because in order to hear the high-frequency crackling you need to keep your mouth open. Chips are 80 percent air, and each time we bite one we break open the air-packed cells of the chip, making that noise we call "crispy." Bodanis asks:

How to get sufficiently rigid cell walls to twang at these squeaking harmonics? Starch them. The starch granules in potatoes are identical to the starch in stiff shirt collars . . . whitewash . . . . . is nearly identical in chemical composition. . . . All chips are soaked in fat. . . . So it's a shrapnel of flying starch and fat that produces the conical air-pressure wave when our determined chip-muncher finally gets to finish her chomp.

These are high-tech potato chips, of course. The original potato chip was invented in 1853 by George Crum, a chef at Moon Lake Lodge in Saratoga Springs, New York, who became so angry when a guest demanded thinner and thinner French fries that he sliced them laughably thin (he thought) and fried them until they were vanishing-brown. The guest loved them, envious fellow guests requested them, word spread, and ultimately Crum started up his own restaurant, which specialized in potato chips.

The mouth is what keeps the prison of our bodies sealed up tight. Nothing enters for help or harm without passing through the mouth, which is why it was such an early development in evolution. Every slug, insect, and higher animal has a mouth. Even one-celled animals like paramecia have mouths, and the mouth appears immediately in human embryos. The mouth is more than just the beginning of the long pipeline to the anus: It's the door to the body, the place where we greet the world, the parlor of great risk. We use our mouths for other things—language, if we're human; drilling tree bark if we're a woodpecker; sucking blood if we're a mosquito—but the mouth mainly holds the tongue, a thick mucous slab of muscle, wearing minute cleats as if it were an athlete.

THE ULTIMATE DINNER PARTY

Romans adored the voluptuous feel of food: the sting of pepper, the pleasure-pain of sweet-and-sour dishes, the smoldering sexiness of curries, the piquancy of delicate and rare animals, whose exotic lives they could contemplate as they devoured them, sauces that reminded them of the smells and tastes of lovemaking. It was a time of fabulous, fattening wealth and dangerous, killing poverty. The poor served the wealthy, and could be beaten for a careless word, destroyed for amusement. Among the wealthy, boredom visited like an impossible in-law, whom they devoted most of their lives to