Extreme Chocolate

from The New Yorker

On July 7, 2001, Frederick Schilling and his girlfriend, Tracey Holderman, arrived in New York to attend the Fancy Food Show and launch Dagoba, an organic-chocolate company. Schilling had just turned thirty, Holderman was twenty-nine, and the show was the first entrepreneurial event of their lives. Dagoba had no employees and no orders. It had a lease for a ground-floor industrial space in Boulder, Colorado (the “factory”), and an investment of $20,000 (borrowed from Schilling’s mother and an uncle), which, after flights, a hotel, and a fee for the smallest possible booth, against a dark wall in the basement of the Jacob K. Javits Convention Center, was gone. It also had “launch products”—seven bars, including infusions of raspberry and mint—an amateurish jamboree, confected and poured into molds by a man who had never liked chocolate, hand-wrapped by a woman who rarely ate more than two ounces a year, and tested only by their Boulder friends and roommates, a scraggily crew of ski bums and folk-singers. Dagoba was more bedroom than boardroom. In New York, that changed.

“I was overwhelmed,” Holderman told me. “The magnitude of the show, the number of other chocolate companies—I had no idea.” Their venture had begun a few months earlier, on Valentine’s Day. Holderman and Schilling were on a chairlift, skiing in the Arapahoe Basin, when Schilling said he could wait no longer (“I need to do this now!”). He raced down, shopped, got home, melted two batches of organic chocolate, infusing one with milk chai, the other with raspberries and rose hips, poured them into
heart-shaped molds, and served them on a silver platter to the hundred friends who came over for a party that went on till the next morning, with guests naked in a hot tub, "praying for peace," as a red sun brightened the Continental Divide.

The Fancy Food Show runs for three days. By the end, Holdeman and Schilling's samples had disappeared in a bewildering thirty-six-hour gobblefest, their picture taken so often that they felt like celebrities — the boyfriend-girlfriend team with wacky organics — and Schilling, a self-described alchemist, entered the happiest period of his life. He became a chocolate-maker.

I found Schilling at this year's show slumped uncomfortably in a plastic chair. His face was in a cup of coffee, absorbing steam. He was wearing an oversized floppy cotton shirt, the top buttons undone, a hairy chest on display, jeans, clogs, a discolored shiny leather bracelet. He was wolverine thin, with an unshaven scratchy face, sagging cheeks, and soft round sacks under his eyes, and his breath smelled so powerfully of red wine from the night before that a staff member gave him two sticks of cinnamon gum. He had just returned from a trip to Bali, Java, and Sulawesi, including a stint in the tropical backcountry, and he kept running a hand through his hair, as if to make sure that a soft-tissue creature hadn't made a home there. He wasn't on a New York clock yet, he explained, but realized, counting slowly, that he'd been here five days. He looked up, perplexed, his eyes so red they could have been rubbed with sand.

Schilling is thirty-six, no longer a novice but still not the obvious founder of a manufacturing company with many millions of dollars in sales. His education has been scattershot. He applied to one college, St. John's in New Mexico, didn't get in, prepared to enter a monastery, and, at the last minute, was offered a scholarship by Ohio Wesleyan to play lacrosse. ("I love lacrosse!") He intended to study religion, hoping to satisfy a spiritual need, but, in the summer, attended a music festival "in the sacred valley of Telluride" and never returned. He worked for a record store, the sum of his business experience. He played guitar. He wrote songs, smoked "an insane amount of herbal blends," and was the lead singer in a band. After six years, he moved to Boulder, but, fundamentally, his life never changed.

At the show, Schilling and I walked past the French chocolates of

Michel Cluizel and saw a photograph of the white-haired patriarch surrounded by his offspring: four scrawny young adults, each assigned to a different division of the business. Dagoba is an inverted version. Schilling has no children, but his mother, a soft-spoken sixty-one-year-old divorcée, looks after the front office. She was running the stand that morning. An older sister, unmarried, keeps the books. And his father, a misanthropic ex-I.B.M. corporate manager, retired at forty-nine ("So I could golf, drink beer, bowl, and play blackjack at Indian casinos," he told me), was summoned one weekend to give lessons in how to run a business and stayed for years. "How do I travel so much?" Schilling said. "I've got Papa Jon nearby, Sister Becky doing the accounts, and Mother Mary working the phones." He beamed. His smile was disarming because it was so trusting, confident that the affection it conveyed would be reciprocated, and his manner, despite the hangover and the slouch and the exhaustion, was irrepresibly cheerful. "Theobroma cacao," he exhaled — the scientific name given to chocolate by Linnaeus — stretching out his arms as though to embrace products of a loving hug. "Theos, god. Broma, food. The food of the gods."

In the past five years, dark chocolate has had astonishing sales, especially in the United States, and has grown ten times faster than milk chocolate. In 2006, its sales increased by 15 percent. Dark chocolate represents a quarter of what Americans buy, $4 billion last year, and industry analysts, who believe that sales will reach nearly 5.5 billion by 2011, don't see an end. One says that it "will drive the chocolate sector for the next hundred years." An appreciation of dark chocolate is now a sign of a discriminating palate. Most chocolate has no such pretensions. It ends up in a candy bar or a chocolate Easter egg or an M&M-like treat referred to by the trade as "bagged product." But taste is a powerful force — in effect, "taste" is "culture" — which I hadn't fully understood until Schilling introduced me to his high-end hands-on fellow-manufacturers.

They were uniformly earnest. They told no jokes. They seemed to have no interest in selling, wanting to talk only about what they made, bars invariably (anything else — a filled confection like a truffle, for instance — was frivolous), in the compulsive, insistent way that upmarket vintners go on about their wines. The intellectual index was the wrapper, the compact culinary encyclopedia of
what was inside. It might tell you where the beans came from. (Madagascar is this year’s hot real estate.) It might reveal the variety. One of the rarest is a Porcelana, from South America; Amedei, an Italian company, sells it for $127 a pound. There were “crus,” named after specific farms. Some bars had a harvest year. I got one from an Internet supplier, a 2002, made from Chaco Valley beans in Venezuela, three years past its sell-by date. Suspecting a gimmick, I ate it to confirm its staleness. I was surprised. It seemed fresher than other bars I’d bought. If kept dry, a chocolate with a high cacao content, I’ve discovered, rarely spoils.

The cacao content is a wrapper’s most important datum, and the acceptable benchmark is 70 percent. The figure is a measure of “cocoa mass.” (The English language uses “cacao,” the Mayan word for the tree, and “cocoa,” an eighteenth-century corruption, interchangeably.) The mass is what you get after you grind up the beans, a gooey wet gob. I did this at home. I put old, dry beans in a coffee grinder, and was surprised by the amount of liquid they produced. It is fat, a lot of it, half the bean’s content, although the fat is mainly unsaturated, the kind that’s good for you, like an avocado’s. This benchmark figure is now the heart of contemporary dark-chocolate culture. It provides a confederation of obsessives with a name, “the 70 percent club” (pure chocolate, “no bonbons”) — the snobbish of the snobby, according to Schilling. It is the number on most of the chocolates I saw. Amedei’s Porcelana is 70 percent. So is an Ocumare Grand Cru, an award-winning new product, named after a Venezuelan valley unknown to anyone except other fanatics.

I tasted it with Schilling. His face gave little away. “Good chocolate,” he said finally.

I had a bite and thought: Harmonic, pure.

“Expensive beans,” he added, quietly. “But good.” He had another bite. “In fact,” he declared, “this is very good.” It was too emphatic. I wondered if he had a reservation he wasn’t expressing, maybe out of respect to the maker, Art Pollard. In 1996, Pollard had a midlife cacao epiphany and has been on a quest for perfect chocolate ever since. This was one of his three products. It might be years before he produced another. I studied him: pale skin, soft middle, a wife he never sees, talking, talking, talking. His life was this bar.

Schilling took me to the Valrhona stand, the French maker, and we tasted a Guanaja, named after a Caribbean island where chocolate was first seen by a European. Columbus, on his last voyage, in 1502, came upon a dugout canoe filled with brown beans, clearly regarded by their Mayan crew as precious; everyone panicked when some spilled. But Columbus, eager to get on, dismissed them as strange almonds. Valrhona’s Guanaja was the world’s first 70 percent bar, the chocolate world’s equivalent of an airplane’s breaking the sound barrier. It was released in 1986, after two years of secret testing by pastry chefs and tastings and retesting by a Valrhona jury. Before the Guanaja, most dark chocolate was half sugar, a so-called bittersweet confection.

Since then, Valrhona has followed the same studied approach in launching any new bar. It was founded in 1924 and has ten basic bars. El Rey, founded in 1939, has nine bars. Scharffen Berger has six. The message: serious chocolate is a considered business.

Schilling has twenty-nine bars. He has his dark bars, like everyone else — a New Moon (74 percent), a darker moon (the Eclipse, 87 percent), and the 100 percent Prima Materia, the refined version of what I produced with my coffee grinder, a brick of intensely complex flavors that can be eaten only in small quantities over a long period. But mainly he has whatever occurs to him. “This seventy-percent thing is a health craze, not a flavor craze. I’ve had seventy-percent bars that I wouldn’t put in my compost pile. Does anyone have any idea what these percentages mean?

“I want surprises in my chocolate,” he explained. “I don’t want purity. I like peaks and valleys. Good beans, bad ones, the perfect and the flawed. Today, everyone wants the established names, the Ocumares, the Madagascars. I like getting in the truck and driving sixteen hours to a village that hasn’t replaced its original stock with the latest hybrid. Every bean is a story.”

Schilling doesn’t have the patience to conduct tastings over two years. “I prepare a flavor in my mind. Once it’s there, I can make the actual physical object quickly.” An idea occurs to him, inevitably at night (“Bottles of red wine essential”), he realizes it in the morning (knife, toaster oven, spice grinder), and manufactures it in a week. He knows one appetite, one curiosity, and one palate: his own.

“What do I want from a chocolate?” he asked. “A beginning and an end. I start with the breast of a woman on her back.” He illustrated with his hand how a breast flattens when a woman lies down.
"That's my flavor curve. You start with the belly," he said, his forefinger like a pencil. "You then move up her body, climbing slowly, rising up the flattened curve of the breast, gently, and the nipple pops out suddenly. Have you noticed how a woman's nipple pops out when she is on her back? Then you slide down, an elegant finish." He looked at me. "It always comes back to sex."

He also makes tinctures: "Clarity" for mornings, "Moon Cycle" for a woman's period, and "Eros," a constellation of every tribal moonbeam fringe aphrodisiac he could find. It was foul; it tasted like a drugstore. I asked Schilling if he used it. "Oh, yes." He cited an ingredient, damiana, that he once mixed into a chocolate served at a party. He won't do that again. "People were having sex on a couch."

I stared at the bottle. You took it in a dropper.

"We don't sell a lot of these here in New York," Schilling said. "It's probably a West Coast thing."

He has three drinking chocolates — he brushes his teeth with the unsweetened one — and recently experimented with another, made from raw seeds. I didn't know that this wasn't done — that flavors aren't really created until a seed has been fermented and dried — until I tried it. It was like black dirt. Why make a drink that tastes disgusting?

"Antioxidants," he said. "The benefits are frickin' off the charts. But most never even make it into the product." He offered an example: "Dutching," a process developed in 1828 by Coenraad van Houten, a Dutch chemist. The fats in chocolate are notoriously temperamental and don't like water; the drink had always been grainy. Van Houten figured out how to squeeze out most of the fats with a heavy press, and then pulverize the cakey leftovers into a powder: better, but still gritty. He then added an alkaline, sodium carbonate, and rendered the smooth modern cocoa. But alkaline destroys antioxidants.

"You will never understand cacao until you see it in the tropics," Schilling said one day. He mentioned Diego Badaró, a "spiritual brother" who farms it in the rainforests of Brazil. We should go to Bahia, Schilling proposed. And I agreed.

A few weeks later, Badaró at the wheel of a Land Rover, Schilling and I entered cacao country at five in the morning, an hour before a tropical dawn revealed green, foggy wet hills, the landscape of the Mata Atlântica, the rainforest of the Brazilian coast. A banner of welcome was stretched above the road, Highway 101. We'd been driving south for six hours, having set out from Salvador, Bahia's capital. We ate cacao beans to stay awake. We stopped at a twenty-four-hour tapioca stand. We passed a muddy market square, with posts to tie your horse. A monkey ran across the road.

"Jupara," Badaró said.

"Jupara" was the mythic animal that introduced cacao to the rainforests here. It is said to have entered Bahia bearing a pod, which it broke open, eating the pulp, discarding the seeds, and sowing the first tree, having run from the Amazon Basin, two thousand miles away. Most botanists believe the fruit originated in the Amazon, and they continue to find new varieties there — more than anyone can count, each an expression of a unique microrainforest spot. Bahia is the Amazon's geographical next-of-kin: the same climate, forest canopy, diverse floor. But there is no wild cacao; the tree was introduced, most likely by a Frenchman, Louis Frederick Warneaux, who, in 1746, sowed seeds near one of Bahia's large rivers.

By then, the fruit, which grows in the shade in warm, wet latitudes — the "twenty-twenty zone" — had migrated from the Amazon Basin, adapting and cross-pollinating along the way, west and north through Venezuela, Panama, southern Mexico, where it was cultivated by a succession of Mesoamerican civilizations. The Olmecs, on the Gulf Coast, were the first, around 1300 B.C. They called it kakaw. You still find semiwild trees in Mexico's humid lowlands, and some of the world's fruitier blond-brown chocolate comes from family holdings there. Mayans were next. By 1519, when Hernán Cortés and his army attended an Aztec feast on the island capital of Tenochtitlán (now Mexico City) and witnessed the seed in a beverage, cacao was a profoundly sophisticated food.

The Spaniards had seen nothing like it. The "beans," as dried seeds were called, were roasted over a fire; crushed into a paste; flavored with flowers, chilies, black pepper, and vanilla; diluted with cold water; poured between vessels until a froth formed; and served in a lacquered gourd, by a train of solemnly reverent women, to Montezuma Xocoyotzin. Montezuma drank it all night — fifty cups, by one account — and cacahuatl, when later presented in
Europe as *chocolatl*, would have two specific associations arising out of the high theatre of its introduction: as an elitist food (only the ruler drank it) and an erotic one (the suggestive female attendants). It had more rarefied associations among the Aztecs. For them, it was a divine food: the gift of a deity, Quetzalcóatl, and used in the worship of Xochiquetzal, a fertility goddess. It was consumed at births, sacrifices, and funerals. It was a trading currency — three beans bought you a fresh avocado, one an overripe one — and hoarded in storehouses. (Nine hundred and sixty million beans were counted in one stash, according to Sophie and Michael Coe in their “True History of Chocolate,” the best account of cacao in Mesoamerica.) The Aztecs couldn’t grow it — they had the wrong climate — and, like others, depended on colonies of rainforest farmers.

Among them were the Kekchi Mayans, in Guatemala. In 1544, a group was invited to Spain by Dominican priests and, in an audience with Prince Philip, the future king, made Europe’s first recorded chocolate drink. Commercial shipments began in 1585, arriving in Seville, and by the early sixteen hundreds the beverage — the Aztec preparation, served warm, with European flavorings (sugar, cinnamon, nutmeg) — had its own high-society rituals, including ornate serving vessels and a molinillo, a stirrer to make the froth. The beans were probably from Guatemala, the blond-brown variety prized today. Spaniards call it *criollo*, the “native.”

In London, the first chocolate shop opened, on Gracechurch Street, in 1657. Two private clubs, White’s and the Garrick, got their start as chocolate houses. By 1664, when Pepys was writing about the new beverage (“To Mr. Blund and there drank my morning draught in good Chocolatte, and slavering my band sent home for another”), he was a representative European consumer. He didn’t understand what he was drinking, had no idea how it was made, and knew only that it came from the New World and that he wanted as much as he could get. In the face of a global shortage, an equatorial panic set in, and prospectors and opportunists fanned out across the tropics, looking for wild trees and planting new ones. Spaniards started finding a darker, more bitter variety in South America, an immigrant cousin of the Amazon Basin’s original bean, which they called *forastero*, the “newcomer.” By the end of the seventeenth century, the Spanish had found trees in Venezuela and Ecuador. They planted some in Trinidad, the French planted in Martinique, the English in Jamaica. Jesuits finally discovered the original *forastero* along the Amazon, the wild breed that had started everything, an astonishing bounty. But it was deep in the backcountry, and their harvest often rotted before reaching a port.

The Rio de Contas, a wide, almost deltallike river, was startling, a sudden big sky and a feeling of openness, and very bright. It was noisy with birds. The rainforest houses most of the earth’s plant and animal population. I hadn’t anticipated it would be so loud. The effect was unexpectedly welcoming: you felt isolated but not alone. Badaró’s property was called Monte Alegre, and was some miles away. The road was flooded, not really a road but a shallow bog, with giant holes that seemed deep enough to sink the vehicle. The air smelled of burning wet wood. We passed a house, once white, now moldy black and fighting off the forest, its front door long gone, five small children in front, a crying, damp smoke coming out of a chimney. We passed another, with a sliding roof, the drying area for cacao beans, built to close up when it rained. There were monkeys, hawks, and toucans. There were pigs, chickens, and a mule. An old man was out for a hunt, followed by his wife. He looked cantankerous and unhelpful, carrying a musket and a bag of homemade ammunition.

The road climbed a hill. A cacao plantation is a *fazenda*, and four hundred acres seemed large enough to fit the American sense of the word. But most of it was thick and impenetrable, cacao trees scattered throughout. It seemed to invert normal real-estate economics: not to use the land efficiently.

Badaró stopped the vehicle at his gate and got out. He was wearing high black boots and forest green rain gear. He was tall, with some bulk, and had thick eyebrows and jet black hair, parted in the middle. A machete was strapped to his belt. He was twenty-six but had the deliberate, unexcitable manner of an older man, and a deep baritone, referred to by his family as “the voice.” He used it to speak to officials. In his bearing, he could have been sixty, with a dozen children. Instead, he had a thirty-four-year-old stepson. His wife, Luiza, a dark-haired artist, was fifty-five, the same age as his mother.

He had eccentricities. On the journey down, he had turned off
the headlights — despite curves, blind hilltops, other vehicles — in order to see the stars better. He drove at bewildering speed. He lost control once, the Land Rover snapping back and forth in a succession of extreme hydroplaning skids. He often prayed: to Ewa, a god of serpents; to Oxossi, the hunter god (Badaró’s personal deity); and to a dozen others, West African in origin. One night, I accompanied him to a worship service in Salvador — an airless room, chanting, drums, members working themselves into a trance, throwing themselves about, jabbering — and met his mother, Katia. A warrior woman — helmet, dagger, breastplate — grabbed Badaró, made battle cries, and grunted.

At the fazenda, Schilling spotted the first cacao. It was like a toy football, green and unripe, attached to a tree trunk as though it had been stapled on: a hulking pod defying gravity and seeming to invite you to take a swipe at it. He saw more, full-size footballs, bright yellow, mainly, but also red and orange-yellow, looking even more preposterously pendulant.

Badaró twisted a pod off a trunk and lopped off the top with his machete. The inside was creamy wet. It smelled of honey and orange and perfume. This was the pulp surrounding the giant seeds. The seeds looked like wet white maggots. Nothing suggested chocolate. Badaró stuck his fingers inside, pulled out some seeds, and tipped them into my hand, and I ate them. They had a slimy, sweet zing, more liquid than substance, and as I rubbed them against the roof of my mouth the pulp disintegrated. I was left with four seeds — still a mouthful. I bit one gently. It was bitter, awful. I spit it out.

The spitting is everything. Cacao has peculiar rainforest dependency. If the pod is not removed, it shrivels and the seeds die. It needs to tempt whatever happens by — monkey, man, squirrel, rat — to stop, wrestle it off its stubby stalk, break it, drink the nectar, eat the pulp (or try to), and cough out the seeds. No creature likes the seeds; the fruit’s future is in its immediate ejection. The seeds that end up on the rainforest floor sprout within hours of exposure to the air.

Badaró lopped off another pod. I raised it over my head like a canteen, hoping to get a taste of miel de cacao, the honey. It is what remains after the seeds have been drained, but it keeps for no more than a day. You never see it outside the twenty-twenty zone. In Bahia, it is a specialty, drunk in the shade of the trees that made it.

We climbed back into the vehicle and followed a two-track road into the trees, where we found four men sitting on the ground, surrounded by yellow fruits, thrashing them rhythmically with their machetes, digging out the pulp, and tossing the empty pods to the side. The pulp was heaped into a white, gooey mound, and a viscous liquid trickled down into a receptacle. Badaró poured some of it into a discarded pod.

It had the same bright citrus flavor that made the pulp so startling. How could there be citrus notes? I identified acidity and sugar; I thought of grapefruit, qualities associated with a sun-ripened fruit: a translucent skin, exposure to direct light. But a cacao pod has a white, inch-thick shell, like a chunk of Styrofoam.

Badaró poured more into my gourd. It seemed to balance sweetness and acidity, weight and liquidity, mouthfeel, and perfume; it would be universal in its appeal, it was clearly irresistible to all but a few palates. In effect, the tree had made a monkey out of me so I could help it along by spitting out the seeds.

In Bahia, the cacao business started slowly because the rewards came so slowly; you stuck a sapling into a wild, uninhabited land and waited. It might be ten years before you saw money from the fruit. Offspring of the Frenchman’s first tree may have been growing since the eighteenth century, but no cacao was harvested until the demand from Europe was great enough to make the labor worthwhile. By the middle of the nineteenth century, the Dutch had reinvented chocolate as a beverage, and the cacao butter extracted in the process had been used by the Cadbury brothers, in England, to make their first bar.

By 1850, chocolate was being made in factories, on a much larger scale. By then, farmers in Bahia had developed the caitura system, a way of cultivating a wild tree in a wild forest by thinning out the understory — trunks, dwarf palms, vines — planting in the cleared space, and preserving the canopy for protection: the rainforest disturbed but basically intact. (The earth is almost sterile; nutrition comes from the trees.) By then, the Bahians also recognized that their harvest had a better chance of reaching port than anything hauled out of the Amazon. The forest wasn’t less impenetrable; it just grew right up to the sea, and deep rivers led out of it.

But it wasn’t easy, even by 1920, as Roy Nash, an ex-army adven-
turer, observed in the three years he spent in the region. On a visit to a cacao plantation on the Rio de Contas, Nash came across an Olympian effort: a gang of workers driving mule-led pack trains, trying to get their harvest to a rail depot and then to port, “troop after troop struggling with their precious cargoes through mud that ate the very heart out of the beasts and through water that ate much cash value out of the beans. Two days to the railroad, two days back, two weeks for the animals to recuperate!” Nash’s account, “The Conquest of Brazil” (1926), is a rare contemporary document of what was becoming an unusually secretive land visited by few foreigners, mainly because, as Nash saw firsthand — in flight from a cacao gang of two hundred “with Winchesters across their saddles” — this giant territory was simply not governed. He witnessed a shooting at a dance, a stabbing on a train, a private army stopping an election, another in a battle with the governor’s troops, a gangster’s “game of raid, rape, and run,” hired gunmen, and “colonels” everywhere — landowners entitled to make their own laws and enforce them with armed deputies.

By then, Badaró’s family had been producing cacao for thirty years. The family knows nothing of the first Brazilian Badaró, except that he was born in Sicily and arrived in the eighteen-fifties. Of the second generation, they know of a son, Antônio, a man of visionary industry, who cleared the understory along the Rio Almada, twenty miles of a famously fertile tract where cacao thrives, and planted millions of trees. We drove over the river during the night. By the time Antônio passed the enterprise on to his oldest sons, Juca, Senhor, and Domingos, it was one of the largest in Brazil, hundreds of thousands of acres on one bank. Another family, the Oliveiras, were on the opposite bank.

Now there was not enough cacao in the world to meet demand. Chocolate had become a wholly different food — a mass-market global confection — because a way had been found to make it with milk, previously impossible, owing to the fats’ absolute intolerance of anything with water in it. (People had been trying to mix chocolate and milk since cacao beans arrived in Seville; the model was probably coffee.) The trick was in manipulating the boiling point. In 1867, Henri Nestlé, in Vevey, on Lake Geneva, trying to create an infant formula that wouldn’t spoil, put milk in a sealed container, removed the air with a crude pump, and heated it until the water content evaporated. In a vacuum, milk boils at a lower temperature and doesn’t curdle. Nine years later, Daniel Peter, the town’s chocolate manufacturer, fed the formula to a newborn baby and understood an essential implication: a dried milk would not be rejected in cacao. Chocolate now had a populist formulation, its intensity diluted and dulled by sweet fats. It was an indulgence (fat + sugar) and it was cheap (because milk was the principal ingredient), and by the time Peter’s Chocolate won a gold medal at an Amsterdam exhibition in 1883, people couldn’t get enough of it. By 1901, Peter’s Chocolate had a U.S. distributor and an unobstructed horizon to expand to. No American had figured out the boiling trick, although many tried, including Milton Hershey, whose milk kept curdling, until finally, after years of experiments, Hershey settled for what he could get: milk chocolate that was slightly soured but not entirely ruined. (To this day, American milk chocolate makes Europeans gag.) By 1905, Juca, Senhor, and Domingos were running Antônio’s estate. The same year, Hershey opened his new chocolate factory.

The sons had never seen a northern chocolate factory. They didn’t know how to make chocolate. They didn’t eat it. But they had seen booms before: a raw resource is discovered (diamonds, gold, rubber) and is wanted on the other side of the earth — and many people had become rich. Even the Rio de Contas had been mined for diamonds. Cacao was just the next thing. There was a rush to get to Bahia before others got there first.

In twenty years, the region went from producing almost none of the world’s cacao to most of it. Ilhéus — a provincial port in 1885 (sugar, coffee, timber) — became a boomtown, with gaudy baroque mansions, cacao barons, nightlife, a celebrity prostitute, towering warehouses, harbor congestion, brokers, lawyers, tax inspectors, the agencies and excesses of sudden wealth.

All of this appears in the work of Jorge Amado, the region’s chronicler. Amado’s family moved to Ilhéus in 1914, when he was two, after a major flood destroyed their plantation; he died in 2001, at eighty-eight, after generating thirty-two books, seven movies, and a soap opera watched by twenty-five million. At the heart of Amado’s region is the high drama of a flawed squatter’s right: all property had been acquired by possessing, then defending — possibly a reasonable practice in 1850, definitely a dangerous one.
later, when desperate arrivals believed chocolate would make them rich. Claims had been filed at the Cartório de Ofícios, in Itabuna. Between 1905 and 1910, it burned down: no records, anarchy, and everyone at war with everyone else. It was rebuilt; new claims were received; it burned down again. Cacao made Amado into a writer — and in an introduction to “The Violent Land” (1943) he expresses his debt. He doesn’t thank the Badaró family, although it is their stories he tells, using their real names, a dizzying feature to come upon for the first time, as if the novel were a history, and maybe it is. The Badarós, too, were at war. Their adversaries were the family across the river.

At Monte Alegre, Badaró revealed that he had learned of a ninety-three-year-old Oliveira survivor, his head and neck still laced with hacking scars. He had retained a heavy bell that had been rung when his home was under attack, and he still spat when he heard his rivals’ family name. We made an effort to visit him — Badaró nervous, gravely imagining a reconciliation across generations — and then discovered that the man had died. A granddaughter owned a restaurant near Ilhéus called Tocaia Grande, where she displayed the family weapons as trophies. In Bahia, tocaia has a historically specific sense, referring to a particular kind of isolated rainforest assassination: a hired gunman, lying in ambush, in a land too big ever to hold him accountable. Amado’s father had been the target of a tocaia; it may have been partly why he fled the fazenda with such dispatch. There would have been no negotiation. You want a neighbor’s land? You kill him. Or you pretend to buy it, visit, bear a gift, and kill him. Or you offer property to a man who has never had it, often an ex-slave, provided he clears and cultivates it, and five years later, never having filed the claim, you kill him: an efficient way of planting trees.

Katia, Badaró’s mother, growing up on an isolated cacao farm, had been kept ignorant of family history by a protective father, who died when she was sixteen. That year, she made a friend in school, Paloma Amado, the novelist’s daughter, and “the bell jar I had been living in shattered,” she told me. I met her brother, Badaró’s uncle, who had notions about the number of fatalities, but vague ones, because he, like other members of the family, had learned what he knew from Amado’s book. In it, two of Antônio’s sons are shot: Sinhô in a fight, Juca by tocaia. The third son is not a character. This was the uncle’s grandfather and the man he was named af-
turn to the forest. He looks after land abandoned by an aunt, by his mother, and his own Monte Alegre. By now, you can get a cacao rootstock that is resistant to the fungus. The forest has almost recovered by itself, although I still saw affected trees everywhere, including on Badaró's property, the seeds of the pod black, cobwebby, and spoiled-smelling.

One morning in Salvador, Badaró took me to the market of São Joaquim. The bounty of Brazil — bananas, cocaine, diamonds, rubber, gold, coffee, vanilla, teak, nutmeg, mahogany, sugar, cacao — has always passed through the port city. At the market, you see some of that bounty — the plenitude of an extreme, tropical botany.

Badaró introduced me to hundreds of fruits, aisle after aisle of them. I bit into a bulbous caju-umbo, with so much juice it squirted me from head to foot, a long, curving, herbaceously fragrant yellow arc. I delicately ate my way around a caju, red like a tomato, pulpy like a mango, and with a pod on the outside that was fatally poisonous. A yellow berry, a caca, was so sweet and complex that it excited an entrepreneurial fantasy: should I try to export it? There were remedies: A leaf rubbed into a wound was an anti-inflammatory. A seed made into an infusion treated a headache, an unwanted pregnancy, a brain injury. "Ah, catuaba," Badaró declared, affectionately holding up a piece of wood. "I love this. It is very powerful." Catuaba was an aphrodisiac.

I asked about a thick rope, rolled up like a sticky black snake on the ground. It was wild tobacco, a wholly different species from the domesticated Virginia leaf. "The most effective natural insecticide in the world," Badaró said. "I dust my plants with it." I bought a three-inch chunk, scrutinized it — wet like motor oil — and popped it into my mouth. I sucked, recognized the flavor of aniseed, and chewed. The chewing released a heat not unlike a chili's.

It was a warm afternoon. We made for an exit by way of a butchers' aisle — in a nose-to-tail art, the cuts, hanging graphically, were principally of the art's nether regions. A girl with a basket of lemons abruptly stopped in front of me and poked one of the items, displayed on a tray of black-rimmed eyeballs. I'd kept chewing, and an interaction of some kind had occurred between the juices in my mouth and what had been released by the wild tobacco. My tongue had gone numb and the roof and inner cheeks were very hot. Sweat cascaded from my eyebrows, suddenly, as though a valvelike gland had been opened, and my pulse increased. I was also producing an unfamiliar saliva, which filled my mouth. I spit it out. We reached the street. Badaró, in white linen, crossed in front of me, his bright sleeves swelling in the breeze. My mouth filled again.

Wild tobacco is toxic; in some countries it is banned. The toxin is an alkaloid, a bitter-tasting compound formed by the plant as a defense against being eaten by insects and animals. A plant defends itself in many ways. An alkaloid is the most extreme, principally a response to big threats, and of the twelve thousand alkaloids known to science — quinine, codeine, cocaine, caffeine, ephedrine, strychnine, and nicotine among them — most come from the tropically wooded twenty-twenty zone. Many, like wild tobacco (Nicotiana rustica), originate in Brazil. An implicit dynamic was at work; every fruit, bark, seed, and root had a complexity you didn't find in a temperate climate. It was defensive.

In the dynamic, I understood cacao, the best-defended fruit in tropical botany. Its sugary seed lands on a rainforest floor, exposed. It is subjected to the most congested predator traffic (and the highest concentration of microbes, fungi, and possible bacterial attack) on the planet. Cacao contains, unusually, not one alkaloid but several, including caffeine, found in many tropical plants, and theobromine, found in few. It has more than five hundred other chemical compounds, also mainly defensive in purpose. Their benefits were first described by Andrew Waterhouse, in a study, published in The Lancet in 1996, that examined polyphenol content. A polyphenol is an antioxidant. Red wine has plenty: two hundred and ten milligrams. A forty-gram bar of dark chocolate has nine hundred and fifty-one. "There is such a concentration," Harold McGee, the author of "On Food and Cooking," told me, "that they create much of chocolate's uniqueness — the bitterness, the astringency, the edginess, and other sensations that we don't know about."

I discovered some of them during the all-night drive from Salvador. I had eaten one bean after another, hoping to find in it a version of what I believed to be the ultimate flavor of chocolate, when, unexpectedly, I experienced a flat-out, unmitigated euphoric stimulant buzz.
Badaró nodded, knowingly.

What had happened? Was it the caffeine? I’d asked.

No, too little. (A dark-chocolate bar has the equivalent of one cup of coffee.) Theobromine, he said.

Although theobromine can cause cardiac arrest in dogs, it appears to affect the human nervous system in only modest ways. It creates a few undisputed physiological symptoms. It makes you pee, for instance. Cacao has pharmacological ingredients, including serotonin, the mysterious neurotransmitter of well-being; a cannabinoid component, similar to what is found in marijuana; and a neuromodulator, phenylethylamine, an amphetamine-like antidepressant. But the conventional view is that the quantities are too small to be significant. I felt unsupported by the science. But Badaró understood. So did his uncle Domingos. They ate the beans. Domingos sometimes ate nothing else for days. On the drive, Badaró had also offered me kola nuts, one of the original ingredients in Coca-Cola. “It will also make you alert.” Kola also has theobromine.

Fermentation has been around forever. It is older than cooking. It was probably the first method of food preparation. Fermentation transforms grapes into wine, grains into beer, wheat into leavened bread. It transforms a raw ingredient, often valued for its nutrition, into one valued for its taste. It yields vinegar, yogurt, sauerkraut, cheese, prosciutto, vanilla, and pickles. It occurs most readily in fruits, because they have, in abundance, the two essential elements: sugar and yeast. A yeast is on a leaf or a branch or in the air. It is the fine white powder on the skin of a grape, like a dust that you should wash off. At its most basic, fermentation is how sugar becomes alcohol.

In the long history of the rainforest, every hunter-gatherer familiar with the cacao pod would have seen evidence of fermentation. The seeds, in their sugary envelopes, ferment effortlessly. But only Mesoamerican culture understood what to do with them, because it had been using fermentation to prepare foods and alcohols for thousands of years, possibly as early as 7000 B.C., and knew how to control it. Badaró’s process was fundamentally no different.

He conducted it in his “laboratory.” It was a concrete shed. It had door frames but no doors, an overhead light that had burned out, a temperature alarm that didn’t work, a digital thermometer that was broken, and five large wooden troughs, like pigpens. It was the responsibility of Pedro Jardin, who had been running Monte Alegre for four decades.

Jardin was now seventy-two, evanescently thin, with high cheekbones and sad eyes. He rarely spoke and seemed never to smile. Jardin had grown up with cacao. By day, he was wrapped, from cap to bright rubber boots, in rain gear. One night, he surprised me. He was barefoot and stripped to the waist, bearing an old Winchester. A Colt revolver was tucked into his trousers. He also had a sawed-off double-barreled shotgun with a Tommy-gun-style grip. He walked the river before bedtime, a stealthy patrol, tiptoeing in and out of the trees, and returned to lock everyone in for the night — a claustrophobic touch, I felt, until I was wakened by something hurling itself against my door. Each time the door was struck, it lifted off its hinges slightly — four or five times, a ferocious force — until whatever it was (animal? man?) went away.

Jardin was waiting for us at the lab. It was late in the afternoon, a still, equatorial twilight about to turn dark, in the sudden way of the tropics. You could smell what was going on from fifty feet. It was a brewery.

Inside, the room was shadowy and hot. The smells multiplied instantly, a sudden olfactory cargo: a brewery, but also a winery, a vinegar factory, a dairy. It could have been an exaggerated version of an English pub. There was a gas, mildly disconcerting. It singed the lungs but felt strangely pleasant.

Schilling inhaled. “Aahh, get those acetic acids up your nose.”

One trough was full. The beans, about chest-high, were covered with banana leaves, a gently heaving green blanket, wrapped tight, an oven on high. The yeast plus sugar produced carbon dioxide, plus heat and alcohol. There were plenty of yeasts on the banana leaves, a rich source, an additional insurance that could kick-start a fermentation if it hadn’t already begun, or else add to it. There were yeasts in the slats of the trough, the natural ones in the wood as well as those left over from previous fermentations. The beans had yeasts. The humid tropical air had them. The forest had them. I thought about the yeast in bread. This approach seemed less about control than about attack.

Badaró pulled back some leaves. The beans instantly released a
more intense hit of everything we'd been smelling. It was alcoholic and vaporous.

They were in their third day of fermentation, and were now purply, the sweet pulp almost entirely gone, although still gooey. "A ton," Badaró said.

"A ton?" Schilling and I both asked, and looked again, feeling compelled to do the banal calculation. "Two thousand pounds?"

The beans were so compact.

The full trough was separated from other empty ones by wooden slats. Badaró removed one so that he could shovel beans into the next space. No matter how tightly everything was wrapped, the beans on top were cooler than the ones at the bottom. By shoveling everything next door, Badaró was turning them over. Normally, Jardin would then hop inside, shuffling beans under his boots, poking a toe into corners, to insure that every bean was equally fermented. Other foods are not fermented in this way. In wine, yeast converts the sugars in grapes into alcohol.

No one worries if some haven't fermented. At the end, they, and the mashed skins and stems that remain, a shapeless purple sponge, are thrown out. With cacao, an infantry of yeasts converge on the pulp around a seed and convert it into alcohol — plus acids and carbon dioxide and heat, none of it important, because none of it is the point. The liquids drain away; the alcohol evaporates. The attack doesn't stop. The seed is heated to a temperature rarely seen in the natural world. The shell is savaged and penetrated, until the tissue inside is invaded. At the end, the bean is the equivalent of the grapey mash. It has been reduced in size. It smells powerfully of vinegar. Its proteins have been disfigured. If you open one up, its insides look as though they'd been obliterated. In the devastation, the extreme intensities of cacao are converted to flavors.

Badaró, meanwhile, was trying to fix his thermostat. He wanted to keep the temperature from exceeding 122 degrees Fahrenheit, but he had no way of measuring it. The beans in the trough seemed hotter than that. I stared at them, trying to gauge how hot they might be, and then I did a thing that seemed strange at the time but was really just a misunderstanding. I took off my shirt, shoes, and pants, and, with my boxers on, I swung myself over the side and sank into the beans. They really were very hot.

I had wanted to get a sense of what you went through to complete cacao's strange fermentation, and had assumed that most people wouldn't be wearing many clothes. Jardin stared at me with a look of apparent horror.

Then Schilling removed his clothes, slipped into the beans, and was jubilant. "Yoni juice," he said. "Yoni of cacao juice." He filled his hands with beans, looked up, and poured them down on his face.

Badaró then removed his clothes. He landed with an awkward splash. Three of us were in a trough that might comfortably accommodate an adult pig, and the fermenting cacao was up to our necks. Badaró had taken to invoking some god, humming in his deep voice. "We must immerse ourselves and connect to the Aztec gods," he said. He disappeared, sinking below the surface. When he reemerged, he was covered in goop: beans behind his ears, stuck to his eyelids, clinging to his hair.

When Schilling and Holderman returned to Boulder from their first Fancy Food Show, in the summer of 2001, he knew they had a winner. According to Holderman, he also had a plan: five years to build the company, then sell it. "We'll be rich!"

"In those days, it was still a 'we' thing," Holderman told me. Dagoba was owned by Schilling, his parents, his uncle, and Holderman. (She is unsure how many shares she had.) "That was 'our' goal — 'rich' in five years. He doesn't remember saying this. But I do." (And he doesn't: "I am very confident I didn't state this. I'll take a lie-detector test.")

They had a division of labor: he made; she sold. Her calls were done cold. "Want to try a new chocolate?" No one said no. I was peddling a legalized drug." Schilling filled the orders, pouring each one with a measuring cup, eight hours a day, the easy rhythm of a repetitive task, fuelled by vast quantities of marijuana.

One morning, he got a call from an East Coast distributor, his first, who wanted ten thousand bars. "I was excited," Schilling said, "and then thought, Oh, shit, I have to pour each one." For ten eighteen-hour days, he did nothing else. His mother, who lived in Minnesota, flew in to help. She arrived on a Friday, wrapped bars until three in the morning, dizzy from the glue stick used to seal them, and returned to the airport on Sunday night. After the first
distributor, others followed. ("They could now trust the neophyte manufacturer with his odd chocolates." ) The orders meant success, but also chaos. Schilling forgot to order wrappers. The air conditioning broke. Chocolate was compromised. The basement flooded. The accounts were bad lecture notes. "We were winging it. We needed Papa Jon."

Schilling's father was, in Holderman's description, single-dimensional and myopic: "We were just going for each other." He was a threat. To the father, she was just the girlfriend. He never disliked her ("She was, above all, an absolutely gorgeous, stunning, vivacious young lady"); he just didn't rate her. He never imagined her as a partner in the future business, even though she was a cofounder and a shareholder. The son was the project, "a visionary," but with no register of risk, no future tense. "He couldn't even spell the word 'business.' They had issues. The father didn't "get" organics. "They argued constantly," Holderman said. "Every day, over morning coffee, at lunch, it was nothing but the business. I wasn't interested in business."

There were fights, hysterics. "The females in my life, both personal and professional, have been very emotional," the father observed. "I don't think I will ever understand their psyche."

Holderman began, in her words, "acting out in a mild way and then not such a mild way." She told Schilling: Marry me and take me away.

He gave her a ring and they moved to Ashland, a town of twenty thousand people, in southern Oregon. They found a space with a large walk-in refrigerator and tables for packing. It was thrilling, according to Holderman, a "bona fide chocolate factory." But the father followed. Then the mother moved there from Minnesota; the sister from California. "At least, I was still his business partner," Holderman said. If she hadn't been, she recognizes, she would never have seen Schilling, because, astonishingly, he was still pouring bars by hand. In the summer of 2002, the company made its first million dollars in sales, but Schilling was in the back with his measuring cup, "smoking a big stick during the lunch hour," convinced that anyone buying his chocolate would know he had personally made it. He couldn't keep up. By Dagoba's second anniversary, he finally bought a small depository, a machine that fills molds. Sales tripled by the end of the year, reaching $3.5 million. Then bought a huge machine, costing $250,000, paid for by selling 5 percent of the company to his mother's six siblings (putting its worth at probably around $7 million). But in Holderman's view nothing was changing. Her mother came one weekend and was put to work. "We wrapped bars until we could no longer stand, went home, passed out, got up; did it again. My mother wasn't unhappy to help. I was unhappy she had to.”

In fact, there had been a change. Schilling had had a “visitation.” A woman had appeared to him in a waking dream.

The pre-dawn visitor was Xochiquetzel, a goddess of cacao. Schilling recognized her. He had been studying Mesoamerican religions, and believed cacao to be a sacred food. The reverence had been evident in the naming of his company, originally Gadoba, a temple, because eating a chocolate should be like a moment of prayer, "each bite a personal gadoba." He then wondered if Gadoba sounded too much like Godiva, the Belgian chocolatier. So he switched the “g” and the “d.” He just liked the sound,” Holderman told me. He discovered later that a dagoba was a Buddhist shrine, and that worked, too.

The goddess asked Schilling to accompany her, and they flew over North America, across the Atlantic, and into West Africa, a first stop. As a child, Schilling hadn't liked chocolate because, like most of us, he had grown up eating what was made in West Africa, and he didn't like the flavor. Eighty percent of the world's cacao comes from there, principally the Ivory Coast, where trees were planted in 1905, the year that chocolate became industrial and global.

West African cacao is cultivated by the "pioneer" method and has few of the vagaries of a rainforest. The plantations are tightly managed and mechanically irrigated, with close plantings and little shade, and exposed to an intense direct light that makes the trees hyperproductive. Schilling and Xochiquetzel watched what would happen next. ("You were hovering above on what — a carpet?" I asked. "No, just floating.”) The trees quickly become exhausted, the farm is closed, a swath of forest burns, and the business starts over. Land is cheap, labor is cheap, the beans are cheap. There are problems: "black pod rot" (with the trees so crowded); a dependence on pesticides; accusations of child labor and slavery.
Xochiquetzal and Schilling flew east into Sri Lanka. Then Bali, Java, Malaysia, the Philippines — all developed to meet modern needs. They flew across the Pacific and reached South America, and found patches of parched earth, once a rainforest, the origins of cacao, now blighted and infertile, “dead brown, like a scab.” They inspected the Amazon Basin, on fire and with trees in flames. They flew up through Central America and paid a solemn visit to a Mayan tomb. Schilling was then returned to his bed. Xochiquetzal had a mission for him. He understood and swore an oath of allegiance.

He was shaking. The visitation had lasted forty-one minutes. It was 5:23. He woke Holderman and described what he had seen. “I didn’t tell her I was now pledged to a goddess — I didn’t want to hurt her.”

Holderman sleeps deeply. “A dream?” she said, when I asked her about it. “Really? No, that one eludes me. A dream, you say?”

The couple broke up. “We had to,” Schilling said. “I couldn’t be unfaithful.” Holderman returned to Boulder, married one of Schilling’s good friends, and is now a massage therapist. Schilling hasn’t had a serious girlfriend since (“I can’t — I’m married to cacao”), now lives by the Mayan calendar, and began a life of manic tropical travel: in the past year, Costa Rica (twice), Panama, Venezuela, Nicaragua, Mexico, Ecuador, Peru, the Dominican Republic (three times), and Brazil (three times).

Last year, on October 19, Schilling may have had another visitation. He remembers nothing, but he woke in a condition of heightened clarity. By then, he had fifty employees in Oregon. He was helping to sustain a cooperative farm in the Dominican Republic, a family in Peru, an enterprise in Guatemala. He made bars sold in Whole Foods, hippie pharmacies, organic markets, and beside the cash registers of independent bookstores.

He had an immodest vision that he couldn’t stop thinking about. It involved all the stripped, torched, desiccated, denuded, barren land of the ruined tropics. Why couldn’t he figure out how to buy it up, most of it worthless anyway, and replant it with cacao, and, in effect, reforest the planet with chocolate bars?

I had been advised about Schilling’s ambitions. “He has no limits,” Holderman had told me forcefully. She described a trip the two of them once took to visit her family in Pennsylvania, passing through the town of Hershey. She was silenced by the scale, memories of a childhood visit, the wonder of it all, and, turning to Schilling, was alarmed by his focus and what he appeared to be thinking: he seemed to be measuring his future against Hershey’s achievements. Schilling wanted to be a player, and not just a normal high-stakes player but an ideological one: someone who could change the world.

On the morning of his clarity, Schilling called his father. For months, Papa Jon had been working out the details of a sale (“Frankly, I just wanted to get a good chunk of change”), even though it had never been approved by his son. “Let’s do it,” Schilling said, and by nightfall a deal was done — so quickly it seemed like a spontaneous act — and Hershey became Dagoba’s owner. The price was $17 million. Schilling was retained as a consultant.

That night, Schilling met friends, broke down, and wept uncontrollably for twelve hours. He spent the next month defending himself from charges made by organic colleagues that he was a “sell-out.” “How could I make a difference at Dagoba, working on such a small scale?” he said repeatedly, an incomprehensible argument to people who had no idea that he wanted to plant two or three billion trees and that he had the support of a goddess. Holderman, who got the news by group e-mail, was one of the few friends who were not surprised. “It was right on time, wasn’t it?” she said. Five years, give or take a month or two, since the first Fancy Food Show.