

is a river that no longer reaches the ocean, but peters out in a sand flat near the Mexican border.

If it crosses your mind that water running through hundreds of miles of open ditch in a desert will evaporate and end up full of concentrated salts and muck, then let me just tell you, that kind of negative thinking will never get you elected to public office in the state of Arizona. When this giant new tap turned on, developers drew up plans to roll pink stucco subdivisions across the desert in all directions. The rest of us were supposed to rejoice as the new flow rushed into our pipes, even as the city warned us this water was kind of special. They said it was okay to drink, but don't put it in an aquarium because it would *kill the fish*.

Drink it we did, then, filled our coffee makers too, and mixed our children's juice concentrate with fluid that would gag a guppy. Oh, America the Beautiful, where are our standards? How did Europeans, ancestral cultures to most of us, whose average crowded country would fit inside one of our national parks, somehow hoard the market share of Beautiful? They'll run over a McDonald's with a bulldozer because it threatens the way of life of their fine cheeses. They have international trade hissy fits when we try to slip modified genes into their bread. They get their favorite ham from Parma, Italy, along with a favorite cheese, knowing these foods are linked in an ancient connection the farmers have crafted between the milk and the hogs. Oh. We were thinking *Parmesan* meant, not "coming from Parma," but "coming from a green shaker can." Did they kick us out for bad taste?

No, it was mostly for vagrancy, poverty, or being too religious. We came here for the freedom to make a *Leaves of Grass* kind of culture and hear America singing to a good beat, pierce our navels as needed, and eat whatever we want without some drudge scolding: "You don't know where that's been!" And boy howdy, we do not.

The average food item on a U.S. grocery shelf has traveled farther than most families go on their annual vacations. True fact. Fossil fuels were consumed for the food's transport, refrigeration, and processing, with the obvious environmental consequences. The option of getting our household's food from closer to home, in Tucson, seemed no better to us. The Sonoran desert historically offered to humans baked dirt as a construc-

tion material, and for eats, a corn-and-beans diet organized around late summer monsoons, garnished in spring with cactus fruits and wild tubers. The Hohokam and Pima were the last people to live on that land without creating an environmental overdraft. When the Spaniards arrived, they didn't rush to take up the Hohokam diet craze. Instead they set about working up a monumental debt: planting orange trees and alfalfa, digging wells for irrigation, withdrawing millions more gallons from the water table each year than a dozen inches of annual rainfall could ever restore. Arizona is still an agricultural state. Even after the popula-

### Oilly Food

Americans put almost as much fossil fuel into our refrigerators as our cars. We're consuming about 400 gallons of oil a year per citizen—about 17 percent of our nation's energy use—for agriculture, a close second to our vehicular use. Tractors, combines, harvesters, irrigation, sprayers, tillers, balers, and other equipment all use petroleum. Even bigger gas guzzlers on the farm are not the machines, but so-called inputs. Synthetic fertilizers, pesticides, and herbicides use oil and natural gas as their starting materials, and in their manufacturing. More than a quarter of all farming energy goes into synthetic fertilizers.

But getting the crop from seed to harvest takes only one-fifth of the total oil used for our food. The lion's share is consumed during the trip from the farm to your plate. Each food item in a typical U.S. meal has traveled an average of 1,600 miles. In addition to direct transport, other fuel-thirsty steps include processing (drying, milling, cutting, sorting, baking), packaging, warehousing, and refrigeration. Energy calories consumed by production, packaging, and shipping far outweigh the energy calories we receive from the food.

A quick way to improve food-related fuel economy would be to buy a quart of motor oil and drink it. More palatable options are available. If every U.S. citizen ate just one meal a week (any meal) composed of locally and organically raised meats and produce, we would reduce our country's oil consumption by over 1.1 billion barrels of oil every week. That's not gallons, but barrels. Small changes in buying habits can make big differences. Becoming a less energy-dependent nation may just need to start with a good breakfast.



yard vegetable garden was a howling curiosity for the boys who ran wild in the alley. He befriended these kids, especially Malcolm, known throughout the neighborhood as "Malcolm-get-your-backside-in-here-now-or-you-won't-be-having-no-dinner!" Malcolm liked hanging around when Steven was working in the garden, but predictably enough, had a love-hate thing with the idea of the vegetables touching the dirt. The first time he watched Steven pull long, orange carrots out of the ground, he demanded, "How'd you get them *in* there?"

Steven held forth with condensed Intro Botany. Starts with a seed, grows into a plant. Water, sunlight, leaves, roots. "A carrot," Steven concluded, "is actually a root."

"Uh huh . . .," said Malcolm doubtfully.

A crowd had gathered now. Steven engaged his audience by asking, "Can you guys think of other foods that might be root vegetables?"

Malcolm checked with his pals, using a lifeline before confidently submitting his final answer: "Spaghetti?"

We can't know what we haven't been taught. Steven couldn't recognize tobacco *in vivo* before moving in his twenties to southwestern Virginia, where the tobacco leaf might as well be the state flag. One Saturday morning soon after he'd moved, he was standing on a farmer's porch at a country yard sale when a field of giant, pale leaves and tall pink flower spikes caught his eye. He asked the farmer the name of this gorgeous plant. The man grinned hugely and asked, "You're not *from* here, are you, son?"

That farmer is probably still telling this story; Steven is his Malcolm. Every one of us is somebody's Malcolm. Country folks can be as food-chain-challenged as the city mice, in our own ways. Rural southern cooking is famous for processed-ingredient recipes like Coca-Cola cake, and plenty of rural kids harbor a potent dread of compost and earthworms. What we all don't know about farming could keep the farmers laughing until the cows come home. Except that they are barely making a living, while the rest of us play make-believe about the important part being the grocery store.

When we walked as a nation away from the land, our knowledge of food production fell away from us like dirt in a laundry-soap commercial.

Now, it's fair to say, the majority of us don't want to be farmers, see farmers, pay farmers, or hear their complaints. Except as straw-chewing figures in children's books, we don't quite believe in them anymore. When we give it a thought, we mostly consider the food industry to be a *thing* rather than a person. We obligingly give 85 cents of our every food dollar to that thing, too—the processors, marketers, and transporters. And we complain about the high price of organic meats and vegetables that might send back more than three nickels per buck to the farmers: those actual humans putting seeds in the ground, harvesting, attending livestock births, standing in the fields at dawn casting their shadows upon our sustenance. There seems to be some reason we don't want to compensate or think about these hardworking people. In the grocery store checkout corridor, we're more likely to learn which TV stars are secretly fornicating than to inquire as to the whereabouts of the people who grew the cucumbers and melons in our carts.

This drift away from our agricultural roots is a natural consequence of migration from the land to the factory, which is as old as the Industrial Revolution. But we got ourselves uprooted entirely by a drastic reconfiguration of U.S. farming, beginning just after World War II. Our munitions plants, challenged to beat their swords into plowshares, retooled to make ammonium nitrate surpluses into chemical fertilizers instead of explosives. The next explosions were yields on midwestern corn and soybean fields. It seemed like a good thing, but some officials saw these new surpluses as reason to dismantle New Deal policies that had helped farmers weather the economic uncertainties notorious to their vocation. Over the next decades, nudged by industry, the government rewrote the rules on commodity subsidies so these funds did not safeguard farmers, but instead guaranteed a supply of cheap corn and soybeans.

These two crops, formerly food for people and animals, became something entirely new: a standardized raw material for a new extractive industry not so different from logging or mining. Mills and factories were designed for a multibranched production line as complex as the one that turns iron and aluminum ores into the likes of automobiles, paper clips, and antiperspirants. But instead, this new industry made piles of corn and soybeans into high fructose corn syrup, hydrogenated oils, and thou-



sands of other starch- or oil-based chemicals. Cattle and chickens were brought in off the pasture into intensely crowded and mechanized CAFOs (concentrated animal feeding operations) where corn—which is no part of a cow's natural diet, by the way—could be turned cheaply and quickly into animal flesh. All these different products, in turn, rolled on down the new industrial food pipeline to be processed into the soft drinks, burgers, and other cheap foods on which our nation now largely runs—or sits on its bottom, as the case may be.

This is how 70 percent of all our midwestern agricultural land shifted gradually into single-crop corn or soybean farms, each one of them now, on average, the size of Manhattan. Owing to synthetic fertilizers and pesticides, genetic modification, and a conversion of farming from a naturally based to a highly mechanized production system, U.S. farmers now produce 3,900 calories per U.S. citizen, per day. That is twice what we need, and 700 calories a day more than they grew in 1980. Commodity farmers can only survive by producing their maximum yields, so they do. And here is the shocking plot twist: as the farmers produced those extra calories, the food industry figured out how to get them into the bodies of people who didn't really *want* to eat 700 more calories a day. That is the well-oiled machine we call Late Capitalism.

Most of those calories enter our mouths in forms hardly recognizable as corn and soybeans, or even vegetable in origin: high-fructose corn syrup (HFCS) owns up to its parentage, but lecithin, citric acid, maltodextrin, sorbitol, and xanthan gum, for example, are also manufactured from corn. So are beef, eggs, and poultry, in a different but no less artificial process. Soybeans also become animal flesh, or else a category of ingredient known as "added fats." If every product containing corn or soybeans were removed from your grocery store, it would look more like a hardware store. Alarming, the lightbulbs might be naked, since many packaging materials also now contain cornstarch.

With so many extra calories to deliver, the packages have gotten bigger. The shapely eight-ounce Coke bottle of yesteryear became twenty ounces of carbonated high-fructose corn syrup and water; the accompanying meal morphed similarly. So did the American waistline. U.S. consumption of "added fats" has increased by one-third since 1975, and our

HFCS is up by 1000 percent. About a third of all our calories now come from what is known, by community consent, as junk food.

No cashier held a gun to our heads and made us supersize it, true enough. But humans have a built-in weakness for fats and sugar. We evolved in lean environments where it was a big plus for survival to gorge on calorie-dense foods whenever we found them. Whether or not they understand the biology, food marketers know the weakness and have exploited it without mercy. Obesity is generally viewed as a failure of personal resolve, with no acknowledgment of the genuine conspiracy in this historical scheme. People actually did sit in strategy meetings discussing ways to get all those surplus calories into people who neither needed nor wished to consume them. Children have been targeted especially; food companies spend over \$10 billion a year selling food brands to kids, and it isn't broccoli they're pushing. Overweight children are a demographic in many ways similar to minors addicted to cigarettes, with one notable exception: their parents are usually their suppliers. We all subsidize the cheap calories with our tax dollars, the strategists make fortunes, and the overweight consumers get blamed for the violation. The perfect crime.

All industrialized countries have experienced some commodification of agriculture and increased consumption of processed foods. But nowhere else on earth has it become normal to layer on the love handles as we do. (Nude beaches are still popular in Europe.) Other well-fed populations have had better luck controlling calorie excess through culture and custom. Italians eat Italian food, the Japanese eat Japanese, and so on, harnessing ancient synergies between what their land can give and what their bodies need. Strong food cultures are both aesthetic and functional, keeping the quality and quantity of foods consumed relatively consistent from one generation to the next. And so, while the economies of many Western countries expanded massively in the late twentieth century, their citizens did not.

Here in the U.S. we seem puzzled by these people who refrain from glutting in the presence of a glut. We've even named a thing we call the French Paradox. How can people have such a grand time eating cheese and fattened goose livers and still stay slim? Having logged some years in France, I have some hunches: they don't suck down giant sodas; they



consume many courses in a meal but the portions of the fatty ones tend to be tiny; they smoke like chimneys (though that's changing); and they draw out meals sociably, so it's not just about shoveling it in. The all-you-can-eat buffet is an alien concern to the French, to put it mildly. Owing to certain rules about taste and civility in their heads, their bodies seem to know when enough is enough. When asked, my French friends have confided with varying degrees of tact that the real paradox is how people manage to consume, so very much, the scary food of America.

Why do we? Where are *our* ingrained rules of taste and civility, our ancient treaties between our human cravings and the particular fat of our land? Did they perhaps fly out the window while we were eating in a speeding car?

Food culture in the United States has long been cast as the property of a privileged class. It is nothing of the kind. Culture is the property of a species. Humans don't do everything we crave to do—that is arguably what makes us human. We're genetically predisposed toward certain behaviors that we've collectively decided are unhelpful; adultery and racism are possible examples. With reasonable success, we mitigate those impulses through civil codes, religious rituals, maternal warnings—the whole bag of tricks we call culture. Food cultures concentrate a population's collective wisdom about the plants and animals that grow in a place, and the complex ways of rendering them tasty. These are mores of survival, good health, and control of excess. Living without such a culture would seem dangerous.

And here we are, sure enough in trouble. North America's native cuisine met the same unfortunate fate as its native people, save for a few relics like the Thanksgiving turkey. Certainly, we still have regional specialties, but the Carolina barbecue will almost certainly have California tomatoes in its sauce (maybe also Nebraska-fattened feedlot hogs), and the Louisiana gumbo is just as likely to contain Indonesian farmed shrimp. If either of these shows up on a fast-food menu with lots of added fats or HFCS, we seem unable either to discern or resist the corruption. We have yet to come up with a strong set of generalized norms, passed down through families, for savoring and sensibly consuming what our land and climate give us. We have, instead, a string of fad diets convulsing our

bookstores and bellies, one after another, at the scale of the national best seller. Nine out of ten nutritionists (unofficial survey) view this as evidence that we have entirely lost our marbles. A more optimistic view might be this: these sets of mandates captivate us because we're looking hard for a food culture of our own. A profit-driven food industry has exploded and nutritionally bankrupted our caloric supply, and we long for a food Leviticus to save us from the sinful roil of cheap fats and carbs.

What the fad diets don't offer, though, is any sense of national and biological integrity. A food culture is not something that gets *sold* to people. It arises out of a place, a soil, a climate, a history, a temperament, a collective sense of belonging. Every set of fad-diet rules is essentially framed in the negative, dictating what you must give up. Together they've helped us form powerfully negative associations with the very act of eating. Our most celebrated models of beauty are starved people. But we're still an animal that must eat to live. To paraphrase a famous campaign slogan: it's the biology, stupid. A food culture of anti-eating is worse than useless.

People hold to their food customs because of the *positives*: comfort, touchment, heavenly aromas. A sturdy food tradition even calls to outsiders: plenty of red-blooded Americans will happily eat Italian, French, Thai, Chinese, you name it. But try the reverse: hand the Atkins menu to a French person, and run for your life.

Will North Americans ever have a food culture to call our own? Can we find or make up a set of rituals, recipes, ethics, and buying habits that will let us love our food and eat it too? Some signs point to "yes." Better food—more local, more healthy, more sensible—is a powerful new topic of the American conversation. It reaches from the epicurean quarters of those food converts to the matter-of-fact Surgeon General's Office; from Farm Aid concerts to school lunch programs. From the rural routes to the inner cities, we are staring at our plates and wondering where that's *been*. For the first time since our nation's food was ubiquitously local, the point of origin now matters again to some consumers. We're increasingly wary of an industry that puts stuff in our dinner we can't identify as animal, vegetable, mineral, or what. The halcyon postwar promise of "better living through chemistry" has fallen from grace. "No additives" is now often considered a plus rather than the minus that, technically, it is.



We're a nation with an eating disorder, and we know it. The multiple maladies caused by bad eating are taking a dire toll on our health—most tragically for our kids, who are predicted to be this country's first generation to have a *shorter* life expectancy than their parents. That alone is a stunning enough fact to give us pause. So is a government policy that advises us to eat more fruits and vegetables, while doling out subsidies *not* to fruit and vegetable farmers, but to commodity crops destined to become soda pop and cheap burgers. The Farm Bill, as of this writing, could aptly be called the Farm Kill, both for its effects on small farmers and for

### Hungry World

All these heirloom eggplants and artisan cheeses from the farmers' market are great for weekend dinner parties, but don't we still need industrial farming to feed the hungry?

In fact, all the world's farms currently produce enough food to make every person on the globe fat. Even though 800 million people are chronically underfed (6 will die of hunger-related causes while you read this article), it's because they lack money and opportunity, not because food is unavailable in their countries. The UN Food and Agriculture Organization (FAO) reports that current food production can sustain world food needs even for the 8 billion people who are projected to inhabit the planet in 2030. This will hold even with anticipated increases in meat consumption, and without adding genetically modified crops.

Is all this the reliable bounty of industrial production? Yes and no—with the "no" being more of a problem in the near future. Industrial farming methods, wherever they are practiced, promote soil erosion, salinization, desertification, and loss of soil fertility. The FAO estimates that over 25 percent of arable land in the world is already compromised by one or more of these problems. The worst-affected areas are those with more arid climates or sloped terrain. Numerous field trials in both the United States and the United Kingdom have shown that organic practices can produce commodity crop yields (corn, soybeans, wheat) comparable to those of industrial farms. By using cover crops or animal manures for fertilizer, these practices improve soil fertility and moisture-holding capacity over seasons, with cumulative benefits. These techniques are particularly advantageous in regions that lack the money and technology for industrial approaches.

### CALLED HOME

what it does to us, the consumers who are financing it. The Green Revolution of the 1970s promised that industrial agriculture would make food cheaper and available to more people. Instead, it has helped more of us become less healthy.

A majority of North Americans do understand, at some level, that our food choices are politically charged, affecting arenas from rural culture to international oil cartels and global climate change. Plenty of consumers are trying to get off the petroleum-driven industrial food wagon: banning fast food from their homes and schools, avoiding the unpronounceable

Conventional methods are definitely producing huge quantities of corn, wheat and soybeans, but not to feed the poor. Most of it becomes animal feed for meat production, or the ingredients of processed foods for wealthier consumers who are already getting plenty of calories. Food sellers prefer to market more food to people who have money, rather than those who have little. World food trade policies most often favor developed countries at the expense of developing countries; distributors, processors, and shippers reap most of the benefits. Even direct food aid for disasters (a small percentage of all the world's hunger) is most profitable for grain companies and shippers. By law, 75 percent of food aid sent from the United States to other nations must be grown, packaged and shipped by U.S. companies. This practice, called "tied aid," delays shipments of food by as much as six months, increases the costs of the food by over 50 percent and directs over two-thirds of the aid money to the distributors.

If efficiency is the issue, resources go furthest when people produce their own food near to where it is consumed. Many hunger-relief organizations provide assistance not in the form of bags of food, but in programs that teach and provide support technology for locally appropriate, sustainable farming. These programs do more than alleviate hunger for a day and send a paycheck to a subsistence farmer. They provide a livelihood to the person in need, addressing the root cause of hunger, which is not about food production, but about poverty.

For more information, visit [www.wri.org](http://www.wri.org), [www.journeysforever.org](http://www.journeysforever.org), or [www.earth.org](http://www.earth.org)



ingredient lists. However, *banning* is negative and therefore fails as a food culture per se.

Something positive is also happening under the surface of our nation's food preference paradigm. It could be called a movement. It includes gardeners who grow some of their own produce—one-quarter of all U.S. households, according to the U.S. Census Bureau. Just as importantly, it's the city dwellers who roll their kids out of bed on Saturday mornings and head down to the farmers' markets to pinch the tomatoes and inhale the spicy-sweet melons—New York, alone, has about a quarter million such shoppers. It involves the farmers' markets themselves, along with a new breed of restaurant owner (and customer) dedicated to buying locally produced food. It has been embraced by farmers who manage to keep family farms by thinking outside the box, learning to grow organic peppers or gourmet mushrooms. It engages schoolchildren and teachers who are bringing food-growing curricula into classrooms and lunchrooms from Berkeley, California, to my own county in southern Appalachia. It includes the kids who get dirty in those outdoor classrooms planting tomatoes and peppers at the end of third grade, then harvesting and cooking their own pizza when they start back into fourth. And it owes a debt to parents who can watch those kids getting dirty, and not make a fuss.

At its heart, a genuine food culture is an affinity between people and the land that feeds them. Step one, probably, is to *live* on the land that feeds them, or at least on the same continent, ideally the same region. Step two is to be able to countenance the ideas of "food" and "dirt" in the same sentence, and three is to start poking into one's supply chain to learn where things are coming from. In the spirit of this adventure, our family set out to find ourselves a real American culture of food, or at least the piece of it that worked for us, and to describe it for anyone who might be looking for something similar. This book tells the story of what we learned, or didn't; what we ate, or couldn't; and how our family was changed by one year of deliberately eating food produced in the same place where we worked, loved our neighbors, drank the water, and breathed the air. It's not at all necessary to live on a food-producing farm to participate in this culture. But it is necessary to know such farms exist.

understand something about what they do, and consider oneself basically in their court. This book is about those things.

The story is pegged, as we were, to a one-year cycle of how and when foods become available in a temperate climate. Because food cultures affect everyone living under the same roof, we undertook this project—both the eating and the writing—as a family. Steven's sidebars are, in his words, fifty-cent buckets of a dollar's worth of goods" on various topics I've mentioned in the narrative. Camille's essays offer a nineteen-year-old's perspective on the local-food project, plus nutritional information, recipes, and meal plans for every season. Lily's contributions were many, including more than fifty dozen eggs and a willingness to swear off Pop-Tarts for the duration, but she was too young to sign a book contract.

Will our single-family decision to step off the unsustainable food grid give a big black eye to that petroleum-hungry behemoth? Keep reading, but don't hold your breath. We only knew, when we started, that similar choices made by many families at once were already making a difference; to compete the fastest-growing sector of the U.S. food economy. A lot of people at once are waking up to a troublesome truth about cheap fossil fuels: we are going to run out of them. Our jet-age dependence on petroleum to feed our faces is a limited-time-only proposition. Every food calorie we previously eat has used dozens or even hundreds of fossil-fuel dollars in its making: grain milling, for example, which turns corn into the ingredients of packaged foods, costs ten calories for every one food calorie produced. That's *before* it gets shipped anywhere. By the time my children are my age, that version of dinnertime will surely be an unthinkable extravagance.

Feigning denial as much as the next person, but this isn't rocket science: kids will eventually have to make food differently. They could be assisted by some familiarity with how vegetables grow from seeds, how animals grow on pasture, and how whole ingredients can be made into meals, just as is right in the kitchen. My husband and I decided our children should not grow up without knowing a potato has a plant part. We would take a food educational, getting our hands dirty in some of the actual dying



arts of food production. We hoped to prove—at least to ourselves—that a family living on or near green land need not depend for its life on industrial food. We were writing our Dear John letter to a roomie that smells like exhaust fumes and the feedlot.

But sticking it to the Man (whoever he is) may not be the most inspired principle around which to organize one's life. We were also after tangible, healthy pleasures, in the same way that boycotting tobacco, for example, brings other benefits besides the satisfaction of withholding your money from Philip Morris. We hoped a year away from industrial foods would taste so good, we might actually enjoy it. The positives, rather than the negatives, ultimately nudged us to step away from the agribusiness supply line and explore the local food landscape. Doing the right thing, in this case, is not about abstinence-only, throwing out bread, tightening your belt, wearing a fake leather belt, or dragging around feeling righteous and gloomy. Food is the rare moral arena in which the ethical choice is generally the one more likely to make you groan with pleasure. Why resist that?

In Nikos Kazantzakis's novel *Zorba the Greek*, the pallid narrator frets a lot about his weaknesses of the flesh. He lies awake at night worrying about the infinite varieties of lust that call to him from this world; for example, cherries. He's way too fond of cherries. Zorba tells him, Well then, I'm afraid what you must do is stand under the tree, collect a big bowl full, and stuff yourself. Eat cherries like they're going out of season.

This was approximately the basis of our plan: the Zorba diet.



## 2 • WAITING FOR ASPARAGUS

### Late March

A question was nagging at our family now, and it was no longer, "When do we get there?" It was, "When do we start?"

We had come to the farmland to eat deliberately. We'd discussed for several years what that would actually mean. We only knew, somewhat abstractly, we were going to spend a year integrating our food choices with our family values, which include both "love your neighbor" and "try not to wreck every blooming thing on the planet while you're here."

We'd given ourselves nearly a year to settle in at the farm and address some priorities imposed by our hundred-year-old farmhouse, such as into a house that still lacked some finishing touches, like doorknobs. And a back door. We nailed plywood over the opening so forest mammals couldn't wander into the kitchen.

Between home improvement projects, we did find time that first summer to grow a modest garden and can some tomatoes. In October the sootier forests around us suddenly revealed their proclivity for cross-dressing. (Then the series of snowfalls that comprised the first inclement winter of the kids' lives. One of our Tucson-bred girls was so dismayed by the cold, she adapted fleece-lined boots as orthodox, even indoors; the other was troubled with the concept of third grade canceled on account of snow.)