

CHAPTER 17

NO T LONG after my transformative meal at Aponiente, I was back at Blue Hill at Stone Barns inspecting a fish delivery from our main purveyor. One of the drivers, Howard, always backs the van close to the receiving entrance and, as is my habit, I checked to see the fish awaiting delivery to other restaurants. We were the last stop that day; only a large tub of cod heads and bones remained, piled in the corner.

“Headed to Chinatown,” he said with a laugh, anticipating my question. I asked if he planned on selling them. “Sell the heads? Hell, no, I throw them away myself.”

I took them all, in an impulsive nod to Ángel. We’ve been serving steamed cod head ever since, one to share for a table of two. Some diners interpret it as a political statement, a way of saying there’s no more cod left in the sea. Some see it as a celebration of the fish. Still others are offended by the offering, if for no other reason than because of the cost of the meal. “An insult” was a comment left by one diner. Having now served a lot of fish heads—because they’re delicious, full of collagen-rich meat that’s nearly impossible to overcook—I’m reminded, with almost every delivery, that the real insult is throwing this large and delicious part of the animal away.

Americans consume seafood much as we consume meat. We’ll order bass or salmon or cod in a restaurant, just as we might order chicken or pork, and what we expect to eat (and are invariably served) is a seven-ounce chunk of the fillet. We eat high on the *cod*, in other words, as guilty of wasteful and blind consumption as eating high on the hog.

Both luxuries are sustained only by illusion. Industrial efficiency, fueled by grain subsidized with our tax dollars, has ensured a seemingly inexhaustible amount of meat in the United States, allowing us to conveniently discard the lesser cuts (or process them into chicken fingers and dog food). Likewise, our profligate seafood-eating ways are fueled by a seemingly endless supply, and that's because fish are now farmed like any other protein.



The business of fish farming is nothing new. In China, it's been around since the fifth century B.C. But in the past fifty years, the industry has experienced an unprecedented boom. The 8.8% percent annual rate of growth, a clip the industry has averaged since the 1980s, is just enough to keep up with the world's expanding appetite. (Production will somehow have to double by the middle of the century to meet demand.) More and more, experts believe it's the future of fish eating. In fact, recent estimates suggest that by 2018, the seafood on our plates will more likely be farmed than fished.

There are plenty of arguments against aquaculture. For one thing, most aquaculture operations are located near the shore. Keeping your fish in calmer and more accessible waters makes good economic sense, but in most cases it does not make good ecological sense. Since the shoreline comprises a complex web of life—a vibrant edge effect—you're inserting the equivalent of a large monoculture into a delicate cradle of diversity. With it come all of monoculture's attendant needs, like antibiotics to stave off disease—most fish farms, like animal feedlots, require a near constant supply—and all of its destructive capacity, too, like fouling coastlines with concentrated waste.

Add to this the most compelling argument against aquaculture: it's inefficient. To get a fish to market weight quickly enough to clear a profit, you usually have to feed it somewhere from two to five times its weight in wild fish. This *feed conversion ratio* (also known as FCR—the ratio of feed consumed versus pound of weight gained) means that in order to farm fish, you have to deplete wild fish stocks. Which means you're still banking on the

ocean's productive capacity—borrowing from Peter to pay Paul. More recently, fish farms have begun substituting grains and oilseeds in their feed as fishmeal has become more expensive. But the rising cost of grain and competition from livestock producers (to say nothing of our flawed system of agriculture) suggests that these alternatives are no more sustainable in the long run.

Though chefs serve farm-raised fish all the time—they're cheaper, they're abundant, and they're consistent—I didn't know of any well-respected chefs *promoting* farm-raised fish. Farmed fish have an unsavory reputation among chefs for the same reason most musicians don't talk up the wonders of computer-generated sound effects: we prefer the real thing.

FALLING IN LOVE WITH A FISH

Not long after our meal at Aponiente, Lisa called to tell me she'd recently returned from a food conference where Dani García, a young chef from Marbella, Spain, had spoken about a farm-raised sea bass so delicious it rivaled any wild fish he'd ever served. I told her he most likely didn't mean it, discouraging her from learning more.

But Lisa, who knows a good story when she hears one, ignored my advice and forged ahead. The next time we talked, she was exploding with enthusiasm: this farm, Veta la Palma, was a model of sustainable production, she said. It raised fish in a way that didn't harm the environment or the fish themselves. She claimed the fish were delicious and virtuous.

After months of repeated attempts, Veta la Palma was finally allowing her to tour the farm. The visit was to coincide with another trip I was making to Spain for a chef's conference and then, afterward, to see Eduardo and the geese again—both within a short driving distance from Veta la Palma. I tried to get out of it, but since Lisa was my liaison with Eduardo (he answered her calls, not mine), I eventually relented and offered to drive out to visit the fish farm with her before seeing Eduardo.

The conference was in Seville, and the night after my presentation, we went with a group to a new restaurant in the center of town. Lisa pointed out a sea bass from Veta la Palma on the menu. Since we were headed to the farm the next day, I decided to order it.

I remember when the waiter set the bass down in front of me. The flesh, a pristine white, shimmered against the backdrop of a dark green herb sauce. The skin was cobalt black. Seared and roasted, it cracked apart with the tap of my fork, and right away the brilliant white flesh revealed that the fish had been overcooked. There was almost no moisture, for one thing, and the proteins had coagulated, so that the bass felt to the touch of my fork more like a tensed biceps. It had either been roasted at too high a temperature or for too long, or, from the looks of it, both.

Cutting off a piece of skin with my fork, I opted to taste it first, which was odd. I don't like fish skin. I don't like the acrid, tar-like taste, and I don't believe you need a crisped skin to counter the softness of the flesh. We almost never cook the skin at Blue Hill. But the skin on the sea bass was wafer-like—delicate, crisp. Quick, flanking bites of the fish's perimeter were excellent, too, and soon I found myself pushing the remaining fish into my mouth like a log into a chipper.

The fish was incredible. Even overcooked and tough—even D.O.A. (“dead on arrival”), as line cooks like to say when a fillet has seen too much heat—it made my mouth water. It was so richly flavored, you'd be forgiven for comparing it to a slowly cooked shoulder of lamb or a braised beef short rib. I'd never known bass could be so delicious.



We arrived at Veta la Palma the next morning. Miguel Medialdea, Veta la Palma's biologist, met us at a bar in the town of Isla Mayor, just at the outskirts of the 62,000-acre Doñana National Park.

Miguel was wearing jeans, a flannel shirt with rolled-up sleeves, and worn-in work boots that made him look like what I'd imagined Eduardo

would look like: a farmer. He had the watchful reticence and physical bearing of a cattle rancher. Standing in an empty bar on the main street of the town, I almost expected tumbleweeds to blow through.

We ordered a round of espressos, and Miguel repeatedly welcomed us, admitting that we were among the first visitors he'd toured through the property. The company that owns Veta la Palma, Pesquerías Isla Mayor, almost never allowed visitors (though they probably had never encountered a visitor as tenacious as Lisa). I got the sense that Miguel was even happier to see us than we were to see the farm.

Downing his espresso like a shot of tequila, he began with a brief history. From the 1960s to the 1980s, Miguel said, the land was in the hands of an Argentinean conglomerate. The company rebuilt and expanded a series of canals the British had originally constructed in the 1920s. They strengthened flood fences and extended drainage systems, eventually draining the marshland and creating grazing land for a large cattle operation. By almost every measure, the plan failed. Economically, it never made much money. Environmentally, it was a disaster. Birdlife, for example, plummeted by 90 percent—and for an area at the tip of southern Spain, the final layover along the migratory route to Africa, this was a lot of birds. Political problems developed as the Argentineans' relationship with the Spanish government became fraught. In 1982, fearing a government takeover, the Argentineans opted for what amounted to a fire sale. Veta la Palma was born.

Now at the driver's seat of a minivan and taking us around the outskirts of the farm, Miguel described what happened next. "We used the same channels built originally to empty water into the Atlantic, and reversed the flow," he said, circling his hand counterclockwise to show the simplicity of the idea. They flooded the canals with estuary water instead of pushing it out, filling the forty-five ponds and creating an eight-thousand-acre fish farm.

Working with the Spanish government, which by 1989 controlled Doñana National Park, the company went about integrating the conservation ethic of the park with the economic activity of the farm.

"It's the idea of utilizing, or using, in order to conserve," Miguel said as we sped along a dirt road, the flat marshland intercut with long canals on either side of us. "We like to say we're a national park with a belt of human activities."

As Lisa spoke to Miguel in Spanish, I sat in the back of the van and stared out at the endless expanse of wetland. A burnished tobacco light washed over the scene. In the distance, several cars were caravanning along another long stretch of dirt road, kicking up dust, their windows reflecting the southern Spanish sun as they moved across the landscape. It was like being in the middle of a desert, except that we were surrounded by lush grass and plant life, and wide canals corralled water everywhere around us.

And yet the placidity of the landscape tells only part of the story. There's another angle, or maybe another story entirely, about the wetlands. It's a story that looks at Veta la Palma as yet another edge, a place where two ecosystems—land and sea—meet, and where life flourishes as a result. That calm surface is a front for the furious activity taking place just below.



We usually think of a beach as the demarcation line between land and sea, the land gradually handing itself over to the waves. But the neat divide of an ocean tide line is deceptive. Land doesn't give up easily, as anyone who snorkels or dives knows well. The continental shelf continues for many miles underwater, sloping down along the way until, finally, it ends.

The ocean's edge is "the primeval meeting place of the elements of earth and water, a place of compromise and conflict and eternal change." Those are the words of Rachel Carson, an English major turned marine zoologist and the author of *Silent Spring*. While Carson is widely credited with winning the ban on DDT and helping ignite the environmental movement in this country, she is less well-known for what occupied most of her life: the oceans. Before publishing *Silent Spring*, Carson wrote three books on the subject, all

best sellers, including *The Edge of the Sea*, in which she takes readers to the shoreline and just beyond.

Carson owned a home on the coast of Maine, which served as both an observatory for her fieldwork and a place to write. In her introduction to *The Edge of the Sea*, oceanographer Sue Hubbell explains that for many years Carson worked on a field guide of what could be found along the coast. Except it didn't get very far. Carson struggled. She complained of writer's block in letters to her editor. Realizing she was writing "the wrong kind of book"—that readers needed to feel an emotional connection if they were going to be compelled to protect something—she abandoned the field guide project and decided instead to focus on the interactions between the organisms.

"She soon realized," Hubbell writes, "that it was more interesting to write about the relationships."

Veta la Palma is a unique lesson in these relationships. Several miles inland, the argument between sea and shore is already under way. Exploding with life, it's the edge effect in action. Miguel's job is to create conditions that find advantage in this dynamic ecosystem.

We stopped to walk along a canal and take a closer look at one of the ponds. Miguel navigated the marshland with Crocodile Dundee-like ease, wading through the thick vegetation as if taking a stroll on a neighbor's lawn. In between pointing to rare birds and aquatic plants, he explained how Veta la Palma's natural biomass—the greenery I was slogging through and all the greenery I couldn't see in the water—determined the health of the aquaculture system. Which in turn determined the number and the quality of the fish they raised. If the production were too high, the density of the natural feed would plummet.

"Natural feed?" I asked. "Like what?"

"Well, like the phytoplankton."

"But bass don't eat phytoplankton, do they?" I asked.

"No, but they're eating the shrimp. And the shrimp eat the plankton." We crouched beside a pond filled with young shrimp. He wanted me to taste them. They were so tiny—each one no larger than a grain of rice—that I popped several in my mouth to get a sense of their taste. They turned out to be rich and sweet, with that same fullness of flavor I'd found in my bass the night before.

I made sure Miguel could hear my hum of appreciation. "They're incredible, Miguel, really. But what are *you* feeding the bass? Fishmeal?"

"Dan," he said patiently, "we don't feed them, not at this time of year, at least. The natural productivity of the farm is so high during most of the year, we're not feeding the bass." He paused. "In August and September, it is very dry, and the productivity is low, so yes, of course, we feed a supplement that is available to them—it's a self-feeder, really. They come to eat as much as they want, but they have to work to get it."

"It's a coevolution between nature and the farm's productive capacity," he continued. "We're in this thing together. The response of nature has been much stronger than we thought. We're good partners."

He stopped at the edge of one of the canals and, looking at Lisa—who somehow seemed to understand the farm intuitively, almost as if she had designed it herself—drew an x in the dirt with a stick. "We are here," he declared. He outlined a rough approximation of Spain, which in his artistic representation resembled a human heart. Tracing the Guadalquivir River like a major artery, he started at the southeast of the country and wound his way to the southwestern corner, where we were.

"The Guadalquivir River is our lifeline; it runs through us, and then it gets flushed out here," he said, pointing to a patch of dirt and marking it with an A for the Atlantic. "The ocean water flows into the system here." He dragged his stick from the Atlantic to his original x, the spot where we were standing. "And the pumping station, located here"—Miguel x'd another spot close by—"this redistributes the water throughout our farm."

Because the water in the farm comes both from the ocean, flushed in at high tide and pumped through the system, and from the Guadalquivir River, the resulting estuary is made up of brackish water—a mix of salt and freshwater. It's teeming with microalgae and those tiny, translucent shrimp, which provide food for the fish they raise. And the species they raise are native to the estuary: twelve hundred tons of grey mullet, shrimp, eel, sole, sea bream, and that bass I had fallen for at the restaurant. Miguel told me that more than half of their production was sea bass.

The enormous scale of the property means there's no overcrowding of fish. They suffer none of the problems—*injury, disease, parasites*—usually associated with farming (*Veta la Palma* loses 1 percent of its fish to disease; the industry average is more than 10 percent), and the ingenious web of canals provides a filtration system against pollution.

In a vain attempt to impress Miguel, and in the hope of getting what I really wanted—an answer to why the bass had been so spectacular—I casually asked how long it took for the bass to reach market weight. Miguel pointed to a group of men dragging a small net through one of the ponds. As they lifted it out of the water, I saw three large, muscular bass caught up in the netting, flapping powerfully in a vain attempt to escape. I was amazed at the size of the bass and, forgetting my thought, remarked at how beautiful they looked.

“Thirty months,” Miguel muttered, seemingly to no one in particular.

“Thirty months!” I said. “It takes two and a half years to raise . . . a bass?”

“Yes, that’s the average, which is more than twice the aquaculture average.” I asked how the company could make money.

“So far there’s profit, enough to keep us working at an optimum, not a maximum.” He paused in deference to the ritual taking place in front of us. One of the men, emerging from the pond with the netted fish, dunked the bass headfirst into a plastic bucket of ice mixed with seawater. The bass flapped wildly, thrashing in the cold water, but quickly calmed and in just a few seconds seemed to fall asleep.

"This we've found to be the most humane slaughter," Miguel said. "They lose consciousness without a struggle. We've found a large correlation between this kind of slaughter and the best-tasting fish." Lisa smiled, probably remembering Eduardo and his method for gently gassing his geese.

"In the end I'm very lucky," Miguel said, dialing back to his point about the company's executives. "They know that you can't, and they don't want to, surpass nature's capabilities. So we keep production low, and we don't surpass the limits of the natural ecosystem."

"But Miguel," I said, looking around at the endless miles of canals, "This isn't really *natural*." It might have been my abrupt chef-speak kicking in, but I sounded more cynical than I felt.

"It's a healthy artificial system. Yes, artificial. But what's natural anymore?"

A LESSON IN RELATIONSHIPS

Back in the van, still marveling at the vastness of the farm surrounding us, I commented again on the beauty of the landscape. Miguel nodded.

Miguel has that California habit of speaking slowly, letting his words hang in the air. You feel his intensity, but it's beneath the surface, coiled and ready for action. Several moments passed, and I thought that was that. Then he said, "Some days, driving around the property like we are right now, I'll look out the window and I swear I see a zebra, or an elephant, and I have to shake my head to stop my dreaming. It's really powerful. What's the saying? 'If you drink once from the African soil you will do it again and again?'" He told me he'd studied in Tanzania for many years.

I asked what kind of aquaculture there was to study in Tanzania. "No, not fish. I studied the grouping patterns of giraffes in the Mikumi National Park."

"Giraffes?"

He nodded. "The giraffe is not a very well-known animal, from a scientific point of view, and yet it is one of the most beautiful and most handsome animals. I fell for them. And over my long observation, I studied how members of the herd hardly interacted. How could this be? Giraffes live in herds, move in herds, feed and sleep in herds, but they don't really mix with each other, they don't socialize much. So the question is, why? Is it a defensive behavior? Or a relic behavior, still maintained because it's not expensive, energywise?"

He stopped speaking, and for a few moments all I heard was the kicking of gravel underneath the van as we sped alongside yet another canal. He appeared to be daydreaming. "How did you become such a fish expert?" I asked.

"Fish?" Miguel looked at me in the rearview mirror, genuinely perplexed. "When I came here, I didn't know anything about fish. I was hired because I'm an expert in relationships."



As impressed as I was with Miguel's philosophy, I couldn't help asking the pragmatic question: how did this kind of place decide it was doing well? I thought of Eduardo, and how he believed the size of the livers determined the extent of nature's gift.

"Miguel," I asked, "for a place that is so natural, how do you measure success?"

Miguel nodded as if expecting the question, and in a perfectly (almost unbelievably) orchestrated act of good timing, he pulled alongside a shallow levee. Thousands of pink flamingos stretched before us, a pink carpet as far as I could see.

"That's success," he said. "Look at their bellies." He pointed. "They're feasting."

I was totally confused. "Feasting? Aren't they feasting . . . on your fish?"

"Yesss!" he said, as proud as I'd heard him all day. Lisa and I laughed, but he ignored us, looking out at the flamingos. "There are thirty thousand flamingos. Overall, we lose 20 percent of the fish eggs and the baby fish to the birds here."

"But, Miguel, isn't a thriving bird population the last thing you want on a fish farm?"

He shook his head slowly, with the same calm acceptance Eduardo had shown in the face of losing half of his goose eggs to hawks. "We're farming extensively, not intensively," he said. "This is the ecological network. The flamingos eat the shrimp, the shrimp eat the phytoplankton. So the pinker the bellies, the better the system." The quality of the relationships matters more than the quantity of the catch.

Those flamingos are only a small representation of the thriving birdlife. There are now around half a million birds at Veta la Palma—more than 250 species, compared with fewer than 50 in 1982, when the canals were flushing out water and creating grassland for the Argentinean beef cattle. Miguel even created Lucio del Bocón, a 740-acre lagoon set aside as a bird refuge—no fishing allowed. It has become the most important private estate for aquatic birds in all of Europe.

Technically I was correct: thirty thousand hungry flamingos—one of the largest populations of greater flamingos in the world—are the last thing you want on a fish farm. But Veta la Palma isn't just a fish farm. Miguel meant "extensive" in the broadest sense of the word. I came to understand it in two ways.

The first is practical. The fish's excrement produces nitrogen. The phytoplankton and zooplankton and the micro-invertebrates feed off this nitrogen, and in turn become food for the fish and for filter-feeding birds like flamingos. Because the system is so healthy, there's more than enough feed for fish and birds. In fact, without the birds, problems would inevitably arise. Much in the way that the Mississippi drains excess nitrogen from corn production into the Gulf (causing irreparable damage in algae-blooming dead

zones), the mighty Guadalquivir River carries nitrogen runoff from the heart of Spain into the Atlantic, passing Veta la Palma on the way. Filter-feeding birds scoop up the excess nutrients, balancing the system and keeping it pure.

When I pressed him about the role of all the other birds, filter-feeding ones aside, there was even more humility in Miguel's voice. "Ninety percent of the things that happen between the species at Veta la Palma we can't see," he said. "But I am absolutely sure they are allies of the system."

The bottom line is, you must embrace life, which is to say *all* life, not just what you're trying to grow, or, as Klaas would argue about healthy soil, what you can actually see.

A BIRD'S-EYE VIEW

A stock market index, if you know how to read it, provides small indicators for the direction of the market's overall resiliency. There are equivalents in agriculture. Klaas's weeds, for instance, are like an index to soil health. Knowing what the weeds are saying is the first step in correcting an imbalance, and perhaps the first step to better food as well.

Could birds serve the same purpose? Before meeting Miguel, I would have said no. My earliest memory of any kind of bird consciousness is eating dinner on a porch in Cornwall, Connecticut, at the home of my childhood friend Jon Ellis. Jon's father, an avid gardener, had memorized a catalog of birdsongs. During dinner, whenever a bird chirped or whistled, Mr. Ellis would raise an eyebrow or hold up a finger and announce the species. "Warbler," he would say periodically throughout the meal, or "blue jay." It didn't matter if we were in the middle of a heated debate or in the silent spaces between bites of food: if there was a song, Mr. Ellis identified the bird. More than anything at the time, I thought this was funny. Later, Jon would use the technique to impress girls (though he made up the names of the birds). But

looking back, I realize Mr. Ellis had a point to make. He wanted to show us that knowing about the natural world is a more enjoyable way to be in the world.

Like most chefs, I've always thought of myself as concerned about the environment. Carlo Petrini, the founder of Slow Food, once said, "A gastronome who is not an environmentalist is stupid," and I think he's right. Our first role as chefs is to identify the best ingredients. We know that delicious ingredients come from good farms, which, almost by definition, means farms that promote healthy environments. How could they not? A badly managed farm will not produce consistently good food. That makes chefs gastronomes and, by definition, environmentalists, too.

But a place like Veta la Palma broadens the definition of "environmentalist" (and "chef") even further. It makes you realize that healthful ecologies are determined in large part by the ecologies that surround them. How is your land healthy if the water feeding it is not clean? Every farm is intimately linked to the larger ecosystem—to what Leopold called "the land" and what we call the environment. When you farm "extensively," you're taking in the world.

Birds are the bellwether of that environment. In the same way that phytoplankton can tell us about the state of the oceans and the climate, and weeds, as Klaas showed me, can tell us about the condition of the soil, birds can tell us about the state of . . . just about everything. They live everywhere, after all—in farmland and meadows, in forests, and in cities. And also in between. Few species thrive in such disparate ecologies, which makes birds perhaps the most sensitive environmental barometers we have. And birds, by almost every measure, are in great decline.

Today, birds' biggest threat, especially in Western countries, isn't from hunting or predation. Their greatest foe is unrelenting, intensive agriculture. Fertilizers, pesticides, modern seed varieties, and mechanization have radically transformed the landscape, which means birds have less food (there are fewer insects and seeds from weeds), and their living and nesting habitats

have become smaller and scarcer (natural preserves for animals and uncultivated land have disappeared, crops are harvested in rapid succession, and birds have nowhere to move).

Since 1980, bird populations on farms in Europe alone have decreased by 50 percent. And though there's been some improvement among the most endangered species, especially in North America, the outlook for the future is grim: more intensive agriculture, more habitat loss, fewer birds.*

Grimmer still is the challenge birds face due to overfishing. Studies have shown that the health of seabird populations is tied to the abundance of prey—an obvious connection—but the recent damage is difficult to comprehend: almost half of the world's seabird populations are in decline.

The destruction of animal populations, especially bird populations, was happening long before industrialized agriculture. You don't need technology to destroy nature after all (as the history of fishing demonstrates). But nature writer Colin Tudge sees the destruction from a historical perspective. He calculates that there were once 150,000 species of birds and that of those, 139,500 went extinct over the course of 140 million years. That's an average of one species of bird lost every thousand years. "In contrast," Tudge writes, "modern records show that the world has lost at least eighty species of birds in the past 400 years—one every five years."

Tudge's predictions are substantiated by other scientists like Miguel Ferrer, a leading Spanish ornithologist who believes global climate change will wreak havoc on flight patterns. Ferrer estimates that twenty billion birds

* Rachel Carson was an ornithologist before she became America's most famous environmentalist. She took frequent birding trips with her friend Roger Tory Peterson, who revolutionized bird watching with *A Field Guide to the Birds* (1934). Those birding experiences proved useful for Carson in 1958, when she received a letter from the owner of a bird sanctuary in Duxbury, Massachusetts. The letter described the bird mortality rates after a particularly strong DDT spraying. For the first time, Carson saw evidence to support what was then only a hunch—that the casual, indiscriminate spraying of pesticides and herbicides would impose long-term damage on the environment as well as incalculable damage to animals and humans. She pursued the issue, amassing more data, connecting the dots, and ultimately presenting her findings in her revolutionary book *Silent Spring*.

have already changed their migrating habits due to climate change, a trend that “has a knock-on effect on almost everything they do, from breeding habits to feeding habits to their genetic diversity, which in turn affects other organisms in their food chain.” Eduardo’s geese and their waning instinct to gorge in the fall are just one example.

Jonathan Rosen, in his book *The Life of the Skies*, reminds us that there is no such thing as a single farm. As all bird-watchers in America know, most migratory birds need Central and South American forests to migrate to in the winter, woods and fields (and farms) to land on somewhere in the north, and, still farther north, regions hospitable to nesting in:

The birds of Walden, local as they seemed to Thoreau, might have flown a thousand miles or more to get there. They are like a story told by one part of the world about another part of the world. Which is why backyard birding is a kind of misnomer after all. Birds are like castles in the air that Thoreau said we must now put foundations under. This is how birdwatching, which grows out of books but can never be satisfied by books, creates environmentalists. If we don’t shore up the earth, the skies will be empty.

Our plates may be a little emptier, too. I won’t ever fully understand birds’ relationship to good food. But it is clear, as Miguel said, that they are allies of the system.

If you want evidence, just look at the pink bellies of those thirty thousand flamingos, who, it turns out, shouldn’t even be at Veta la Palma in the first place. They brood in Málaga, in the town of Fuente de Piedra, 100 miles from the farm, because there they find the right soil to build their nests. Every morning they fly to Veta la Palma, and every evening they make the journey home to Málaga, back to their newborns. The males go together one day, and the females make the flight the next.

How are they able to find the farm? Miguel told me that scientists have

studied the flight pattern and what they've discovered is that the flamingos follow the yellow lines of Highway A-92, the most direct route connecting Veta la Palma and Málaga.

Moved, I asked Miguel why the flamingos would fly hundreds of miles each day. "Miguel, do they do this . . . for the children?"

He looked at me, confused. The answer was apparently obvious. "They do it because the food's better."