

YOUNG READERS EDITION

The
**Omnivore's
Dilemma**

THE SECRETS BEHIND WHAT YOU EAT

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ADAPTED BY RICHIE CHEVAT



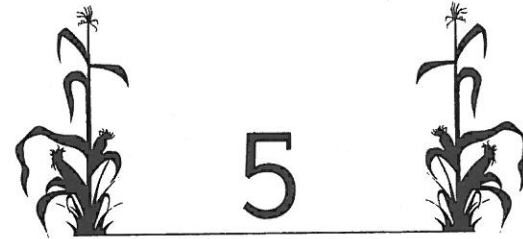
DIAL BOOKS

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great eating camps, where they consume the mounting pile of surplus corn.

One of the strangest parts of the industrial food chain is the way it forces some animals to eat corn. And the saddest example of this might be what it means for cows. The cow is by nature not a corn eater. Getting cows to eat a corn diet takes a heroic effort on the part of the factory farm. But the river of surplus corn is waiting and so the cows must be forced to consume it and turn it into beef you and I can buy.

Enter the corn-fed American steer.



The Feedlot— Turning Corn into Meat

CITY OF COWS

I was speeding down a ramrod-straight road in Finney County, Kansas, when the empty, dull tan prairie suddenly turned black. The gently rolling sea of grass became a grid of steel fences as far as the eye could see. (In Kansas, that is *really* far.) I had made it to my destination—Poky Feeders, a feedlot and home to thirty-seven thousand head of cattle.

The feedlot appeared suddenly, but the stench of the place had been rising for more than a mile. I soon learned why. At first I thought the cattle were standing or lying in a grayish mud. Then it dawned on me—that wasn't mud at all. It was manure.

An endless series of cattle pens stretched to the horizon, each one home to a hundred or so animals. The cattle pens, filled with animals and their waste, are built around a corn mill. Twelve hours a day, seven days a week, the mill noisily turns America's river of corn into cattle feed.

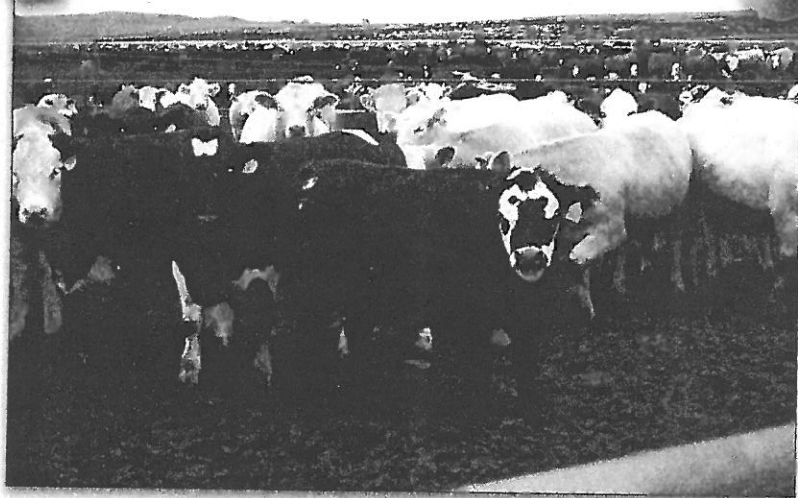


photo courtesy of PETA

Most cattle today are raised in densely packed, city-like "Concentrated Animal Feeding Operations" like this one.

I'd traveled to Poky early one January with the crazy idea of visiting a particular resident. I was looking for a young black steer with three white blazes on his face, the same one I'd met the previous fall on a ranch in South Dakota, five hundred miles due north of here. In fact, the steer belonged to me. I'd purchased him as an eight-month-old calf from the Blair Ranch for \$598. I was paying Poky Feeders \$1.60 a day for his room and board (all the corn he could eat).

My idea was to follow my steer as he traveled through the meat-making branch of the industrial food chain. And so I had followed him here.

CAFO—CONCENTRATED ANIMAL FEEDING OPERATION

The old-fashioned way of raising cattle, like the old-fashioned way of growing corn, was on the small family farm. Cattle

were raised in pastures, eating grass and hay—the food they naturally eat. But as corn took over the family farm, cows and other animals were pushed out.

Cattle are now raised in densely packed animal cities like Poky's. These places are called CAFOs—Concentrated Animal Feeding Operations. Farmers gave up raising cattle because, as strange as it might seem, it costs a farmer more to grow feed corn than it costs a CAFO to buy it. (Thanks to those government subsidies.) Eating meat used to be a special occasion in most American homes. Thanks to CAFOs, meat is now so cheap that many of us eat it three times a day. Of course, the American taxpayers have already paid part of the cost by subsidizing corn.

But there are other costs involved in raising cattle this way, costs that shoppers don't see when they buy a steak at the supermarket. On the old-fashioned farm, there is really no such thing as waste. Animal manure goes back into the fields as fertilizer. But the waste from CAFOs is a huge source of very toxic pollution. Tons of animal manure are produced with no good way of disposing of it. The feedlots are also breeding grounds for new and deadly bacteria. Some of these bacteria are finding their way into our food.

And there is another cost to raising cattle on CAFOs, one that's even harder to see. These animals have evolved to eat grass. But in a CAFO they are forced to eat corn—at considerable cost to their health, to the health of the land, and ultimately to the health of us, their eaters.

STEER NUMBER 534

I first met steer number 534 on the Blair Ranch—fifty-five hundred acres of rolling short-grass prairie a few miles out-

side Sturgis, South Dakota. In that part of the prairie, you can still make out ruts dug by stagecoaches and cattle drives of the 1800s. In November, when I visited, the ground was covered with a thick coat of yellow and gold grass. Sprinkled across the fields were moving black dots: Angus cows and calves, grazing.

Ed and Rich Blair run what's called a "cow-calf" operation. Their business is the first stage in the production of a hamburger. It is also the stage least changed by the modern industrial food chain. Beef cattle still get born on thousands of independently owned ranches like theirs.

Steer number 534 spent his first six months in these pastures alongside his mother, a cow named 9534. The number means she was the thirty-fourth cow born in 1995. His mother never met his father, an Angus by the name of Gar Precision 1680. Like all beef cattle, 534 is the product of artificial insemination.

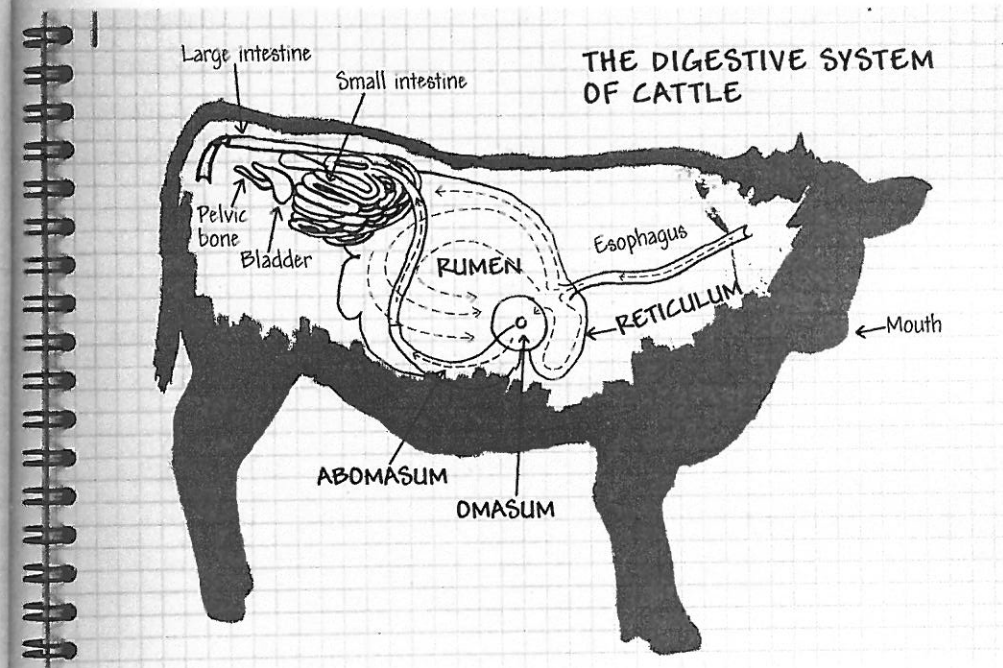
Born on March 13, 2001, in the birthing shed across the road, 534 and his mother were turned out to pasture just as soon as the eighty-pound calf could stand up. Within a few weeks the calf began adding to his diet of mother's milk. He chose from a salad bar of grasses: western wheatgrass, little bluestem, buffalo grass, green needlegrass.

Apart from the Saturday in April when he was branded and castrated, one could imagine 534 looking back on those six months as the good old days. No one can really know what a cow feels. But we can say with confidence that a calf grazing on grass is doing what he is supremely well suited to do. Yet, after a few months at Poky my steer will never have the opportunity to eat green grass again.

COWS AND GRASS—A PARTNERSHIP

Cows have evolved over millions of years to eat grass. It's not a one-sided deal. At the same time, grasses have evolved over millions of years to be eaten by cows. This partnership is one of nature's wonders.

When a cow eats grass, it doesn't kill the plant. Grasses have evolved so that they can survive being eaten very well. (As long as the cows give them a chance to recover.) In return for being chewed on, the plants get help from the cows. The cow protects the grass habitat by eating young trees and shrubs that might compete with grasses. The animal also spreads grass seed, plants it with his hooves, and then fertilizes it with his manure.



Cattle have four separate stomach compartments, while other farm animals such as chickens and pigs have only one.

Only certain animals, including cows, sheep, goats, and bison, can make a meal out of grass. They can do this because they have a specialized second stomach called a rumen. (That's why these animals are called *ruminants*.) The rumen is like a twenty-five-gallon fermentation tank. Here is where the cow gets some help. Inside that tank lives a type of bacteria that dines on grass. The bacteria break down the cell walls of the grass and allow the cows to get at the protein and carbohydrates within.

On the plains of the American west, where steer 534 was born, bison and the prairie grasses lived together in partnership for thousands of years. (I guess we should include the bacteria in that partnership, also.) It was a natural, solar-powered loop. The plants used the sun's energy to make food. The bison (with the help of bacteria) ate the grass and in return planted it, fertilized it, and defended its territory. It was a successful ecological system.

A rumen has evolved into the perfect organ for digesting grass. But it is not good at digesting corn. So then why is steer number 534 forced to eat corn instead of grass? The answer is one word: speed. Cattle raised on grass simply take longer to grow than cattle raised on corn. "In my grandfather's time, cows were four or five years old at slaughter," Rich Blair explained to me. "In the fifties, when my father was ranching, it was two or three years old. Now we get there at fourteen to sixteen months." What gets a steer from 80 to 1,100 pounds in fourteen months is tremendous amounts of corn, food supplements, and drugs. Fast food indeed.

COW CHOW

In October, two weeks before I made his acquaintance, steer number 534 was weaned from his mother. Weaning is the

hardest time on a ranch for animals and ranchers alike. Cows separated from their calves will mope and bellow for days. The calves are prone to getting sick. Calves are weaned for a couple of reasons. First, it frees their mothers to have more calves. Second, it gets the calves, now five or six hundred pounds, ready for life on the feedlot.

The calves are rounded up and herded into a "backgrounding" pen. They will spend a couple of months there before boarding the truck for Poky Feeders. Think of backgrounding as a training school for feedlot life: The animals are, for the first time in their lives, confined to a pen. They are "bunk broken"—taught to eat from a trough. And they must gradually get used to eating what is for them a new and unnatural diet. Here is where they first eat corn.

It was in the backgrounding pen that I first met 534. Rather,



© Marcus Mann

This is Steer #534. I purchased him as a calf so I could follow him as he traveled through the meat-making part of the industrial food chain.

it's where I picked him out. I had told the Blairs I wanted to follow one of their steers from birth to slaughterhouse. Ed Blair suggested, half jokingly, that I might as well buy one. Then I could have the whole beef-making experience. He told me how to pick out a good calf: one with a broad straight back and thick shoulders. Basically you're looking for a sturdy frame on which to hang a lot of meat.

I also wanted a calf with a face I could easily spot in a crowd, so I could easily find him again. I went out to the pen and gazed over the sea of ninety black Angus cattle. Almost at once, steer number 534 moseyed over to the fence and made eye contact with me. He had a wide, stout frame and three easy-to-spot white marks on his face. Here was my boy.

NEW HOME, NEW DIET

Steer 534 and I traveled from the ranch to the feedlot (in separate vehicles) the first week of January. It felt a lot like going from the country to the big city. A feedlot is not a very pleasant city, however. It is crowded and filthy and stinking, with open sewers, unpaved roads, and choking air thick with dust.

At the center of the feedlot stands the feed mill. That is where three meals a day for thirty-seven thousand animals are designed and mixed by computer. A million pounds of feed pass through the mill each day. Every hour of every day a tractor trailer pulls up to the loading dock to deliver another fifty tons of corn. The driver opens a valve in the belly of the truck and a golden stream of grain begins to flow down a chute into the bowels of the mill.

Around to the other side of the building, tanker trucks pump

in thousands of gallons of liquefied fat, usually beef fat from a nearby slaughterhouse. There's also the protein supplement, a sticky brown goop made of molasses and urea. (Urea is a form of synthetic nitrogen made from natural gas, similar to the fertilizer spread on George Naylor's fields.)

In a shed attached to the mill sit vats of liquid vitamins. Beside them are fifty-pound sacks of antibiotic drugs. Along with alfalfa hay and silage (stems and leaves of corn plants), all these ingredients will be automatically blended together to make the feed for the cattle. Three times a day a parade of dump trucks fills up with this feed and carries it to the cattle pens.

Before being put on this strange diet, new arrivals to the feedlot are treated to a few days of fresh long-stemmed hay. (They don't eat on the long ride and can lose up to one hundred pounds. The hay gives them a chance to get adjusted.) Over the next several weeks they'll gradually step up to a daily ration of thirty-two pounds of feed, including twenty-four pounds of corn. That would be enough corn to fill a paper grocery bag.

CATTLE EATING CATTLE

Feedlots are beef factories. Their goal is to turn corn into beef. But corn isn't the only thing the cattle are fed. You might be as shocked as I was to learn that they are also fed parts of other cattle. That's right, these herbivores, natural plant eaters, are fed meat.

For years, leftover beef scraps were ground up and put into cattle feed. After all, it was protein, and cattle need protein to grow. Then people in England began dying of a sickness called

**POSSIBLE INGREDIENTS
IN CATTLE FEED**

Chicken manure, cattle manure, chocolate, stale pastry, cement dust, molasses, candy, urea, hooves, feathers, meat scraps, fish meal, pasta, peanut skins, brewery wastes, cardboard, corn silage, pesticides

mad cow disease. Mad cow is a brain disease that is always fatal. It is spread by eating the brains of infected animals. Ground-up cattle brains were put into cattle feed and some of those cows got mad cow disease. Human beings who ate infected beef also got the disease, although there were

no human cases reported in the United States.

The government banned the practice in 1997, but there are some exceptions. As I already noted, beef tallow (fat) is one of the ingredients that cows at Poky will eat. Where does the tallow come from? It comes from other cows that have been sent to the slaughterhouse. Though Poky doesn't do it, the rules also permit feedlots to feed cattle protein from other kinds of animals. Feather meal and chicken litter (that is, bedding, feces, and discarded bits of feed from chicken farms) are accepted cattle feeds, as are chicken, fish, and pig meal. Some public health experts worry that other diseases like mad cow could start to appear because of this practice.

SICK FROM CORN

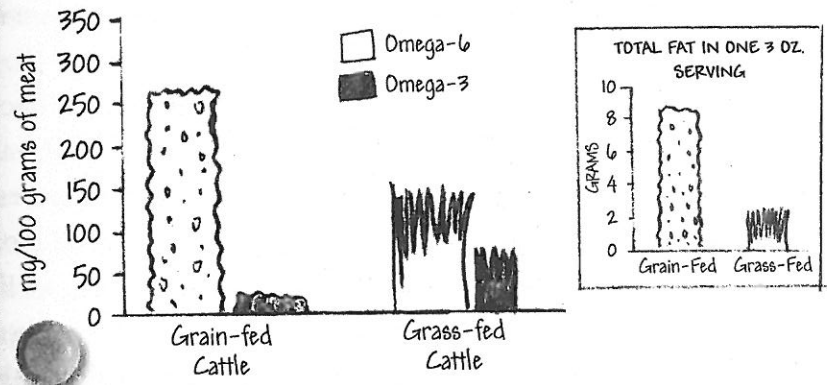
Compared to all the other things we feed cattle these days, corn seems positively wholesome. Yet feeding corn to cattle goes against the natural order almost as much feeding them beef. During my day at Poky I spent a few hours with Dr. Mel Metzlin, the staff veterinarian. Dr. Mel, as he's known at Poky, runs a team of eight cowboys. Their job is to ride the yard's dusty streets, spotting sick animals and bringing them into

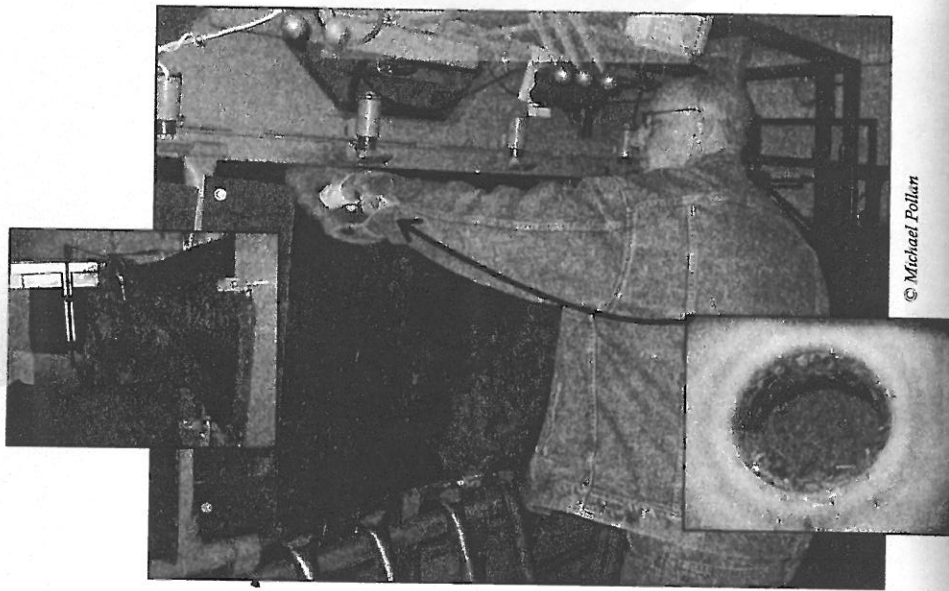
IS CORN-FED BEEF HEALTHY?

Advertisers use the phrase "corn-fed" as though it is something old-fashioned and good. Yet it is neither very old, nor very good, not for the cows and not for us. It's true that cattle fed corn get fat quickly. Also, their meat becomes "marbled." That's what it's called when veins of white fat run through the red meat. Marbled meat is tasty and considered higher quality by the government grading system. Yet this corn-fed meat is actually less healthy for us.

Corn-fed beef contains more saturated fat than the meat of grass-fed animals. Too much saturated fat has been linked to heart disease and other health problems. Corn-fed beef also has *less* of the kind of fats that are healthy for us, a kind called *omega-3 fatty acids*. That is the same kind of "good" fat found in salmon and other fish. The higher the ratio of *omega-6* to *omega-3*, the less healthful the meat. Grass-fed beef generally has lower amounts of "bad" fats and higher "good" fats. Just as it is not healthy for cattle to eat corn, it is not healthy for us to eat corn-fed cattle.

FAT CONTENT COMPARISON





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Here I'm reaching into the rumen of a fistulated cow—an animal with a permanent opening in its side, used for research.

Poky's three "hospitals" for treatment. From Dr. Mel I learned more than any beef eater might want to know about the life of the factory farm steer.

Basically, almost all of the cattle in the feedlot are sick. And it's their corn-based diet that makes them ill. "They're made to eat forage," Dr. Metzlin explained, "and we're making them eat grain." (*Forage* means grass.)

The most serious illness is bloat. Remember, there are bacteria in the animal's rumen and they produce a lot of gas. Usually cattle belch a lot to release the gas. But a corn diet causes a condition that keeps the gas from escaping. This is called bloat. The gases in the rumen get trapped and the rumen inflates like a balloon until it presses against its lungs. To save the animal, a vet must force a hose down the animal's throat to release the gas. Otherwise, the pressure will choke the animal to death.

A corn diet also gives cattle acidosis (too much acid in the

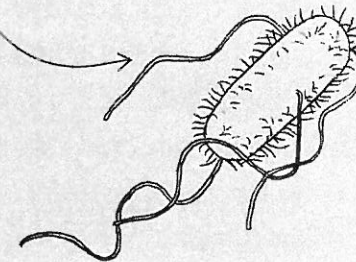


CORN-FED BACTERIA

Some of the bacteria that live in the guts of cattle find their way into our hamburgers and steaks. If those bugs come from a grass-fed cattle, they grow up in a low-acid rumen. When they hit the acid in our stomachs, they die.

However, the rumens of corn-fed cattle are nearly as acidic as our stomachs. New types of bacteria have evolved to live in those acid-filled rumens. Those new bacteria don't get killed by the acids in our stomachs.

E. coli O157:H7 is one of these new bacteria. It was unknown before the year 1980. It thrives in feedlot cattle and 40 percent of them carry it in their gut. Perhaps 70,000 Americans are infected with *E. coli* O157:H7 every year, though most of them recover without going to a hospital. However, a handful get very sick and die.



rumen). Human stomachs are naturally highly acid. A rumen, however, is naturally neutral or non-acid. Feeding corn to a steer changes the chemistry of the rumen, making it acid and causing a kind of heartburn that in some cases can kill the animal, but usually just makes him sick. Cattle with acidosis stop eating, pant and drool, paw and scratch their bellies, and eat dirt. This can so weaken the animal that it can develop a long list of other diseases like diarrhea, ulcers, liver disease, pneumonia, and feedlot polio.

ANTIBIOTICS FOR ANIMALS

Cattle rarely live on feedlot diets for more than 150 days, which might be about as much as their systems can stand.

Over time the acids eat away at the rumen wall, allowing bacteria to enter the animal's bloodstream. These microbes wind up in the liver. Between 15 percent and 30 percent of feedlot cattle have damaged livers. Dr. Mel told me that in some pens the figure runs as high as 70 percent.

What keeps a feedlot animal healthy—or healthy enough—are antibiotics. Most of the antibiotics sold in America today are for animal feed, not for humans. Without these drugs cattle could not survive. The only reason they need the drugs is because they are being raised on factory farms and fed corn. The problem is that in response to antibiotics, bacteria can mutate or change. They can develop into new types of bacteria that the drugs don't affect. By giving antibiotics to the millions of cattle in the U.S. we are actually breeding new superbacteria that can't be killed by antibiotics.

I asked Dr. Mel what would happen if drugs were banned from cattle feed. "We'd have a high death rate," he told me. "We just couldn't feed them as hard. Hell, if you gave them lots of grass and space, I wouldn't have a job."

MY STEER

I found my steer, number 534, in pen 63. Pen 63 is about the size of a hockey rink, with a concrete feed bunk along the road, and a fresh water trough out back. My first impression was that his home wasn't too bad. It was far enough from the feed mill to be fairly quiet and it had a view of what I thought was a pond. Then I noticed the brown scum. The body of water is what is known as a manure lagoon.

I asked the feedlot manager why they didn't just use the liquid manure as fertilizer on neighboring farms. The farmers

don't want it, he explained. The nitrogen and phosphorus levels are so high that it would kill the crops. (He didn't tell me that feedlot wastes also contain toxic chemicals and drugs that end up in waterways downstream.) On a farm, manure would be a source of fertility. At a CAFO like Poky it becomes a toxic waste.

I climbed over the railing and joined the ninety steers, which retreated a few lumbering steps. I couldn't find number 534 at first. And then I spotted him—the three white blazes on his face—way off in the back. As I gingerly stepped toward him the shuffling mass of black cowhide between us parted, and there stood 534 and I, staring dumbly at each other. I had worn the same orange sweater I'd worn at the ranch in South Dakota, hoping that maybe he would recognize me. There was no sign that he did. I told myself not to take it personally. After all, 534 and his pen mates were bred for their meat, not for their memories.

I noticed that his eyes were a little bloodshot. That was probably from all the feedlot dust, which wasn't really dust but dried-up cow manure. Aside from that, it was hard to tell how he was getting on. I don't know enough about cattle to tell you if he was bored or miserable. On the other hand, I would not say he looked happy.

MEAT MACHINE?

My steer had certainly grown. He'd put on a couple of hundred pounds since I'd seen him last, which of course was the whole point of the feedlot. Dr. Mel complimented me on his size and shape. "That's a handsome-looking beef you got there," he said. (Aw, shucks.)

That is one way of looking at a steer like 534—the feedlot way, the industrial way. To the industrial food chain, cattle are just machines for turning number 2 field corn into cuts of beef. So number 534 was doing a good job as a meat machine. Yet standing there, I realized once again that number 534, despite his name, was not a machine. Number 534 was a living, breathing organism. My health is directly related to his health (or to the health of other steers just like him). We live in the same habitat as the animals we eat. Whatever happens to them, happens to us.

While I stood in pen 63 a dump truck pulled up alongside the feed bunk and released a golden stream of feed. The black mass of cowhide moved toward the trough for lunch. The \$1.60 a day I was paying for my steer's meal may seem cheap—but



TURNING CORN INTO MEAT

Compared to other food animals, cattle are very bad at turning grain into meat. Every day until his slaughter 534 will convert thirty-two pounds of feed into four pounds of new weight—new muscle, fat, and bone. That's seven pounds of grain for one pound of cow. A chicken, on the other hand can turn about three pounds of corn into one pound of chicken. That is why chicken costs less than beef.

7 pounds of corn = 1 pound of beef

6.5 pounds of corn = 1 pound of pork

2.6 pounds of corn = 1 pound of chicken

At that moment I couldn't imagine ever wanting to eat one of these animals. Hungry was the last thing I felt. Yet after enough time goes by, and the stink of that place is gone from my nostrils, I will probably eat feedlot beef again. Most people can eat feedlot meat because they just don't know where it comes from. For me, it will take a lot of forgetting.

it doesn't include all the costs of the industrial farm, not by a long shot. It doesn't include the billions the government spends to subsidize corn. It doesn't include the cost to the environment from manure, pesticide, and fertilizer pollution. It doesn't include the cost to our health from new super-bacteria.

I stood alongside 534 as he lowered his big head into the stream of grain.