With the vast majority of livestock being fed antibiotics, Janee Dunn wonders: How safe is our meat?

Photographed by Steven Klein.

My hyperconscientious approach to food verges on parody. If I'm not inspecting kohlrabi at my local farmer's market, I'm loitering in the aisles of the organic-food store on my block. At home, you'll find me virtuously pureeing butternut squash and fresh peas for my infant daughter. My husband is such a food purist that we don't even own a microwave. ("You can do everything it does on a regular stove," he lectures, "and you don't want to eat the things you can't.")

When it comes to meat I make a similar effort, scanning the packages for phrases like naturally raised and cage-free, which suggest pristine products from contented animals. And yet sometimes this kind of meat is hard to find or the small selection in my store is sold out, and so I've picked up a steak without really knowing where exactly it came from.

But recently I was alarmed to see a passing mention of an under-the-radar but industry-wide practice used by industrialized farms. It's an issue that is creating a stir among public-health officials, scientists, and politicians, and is a growing concern among food-savvy diners like me: the use of antibiotics in animal feed.

This prompted my own investigation: What, exactly, is in my lamb chops? When it comes to farming, the nostalgic picture of a herd of pigs frolicking happily in a sun-dappled green field is a thing of the past. The majority of meat production is now completely dominated by factory farms: 95 percent of pigs, 78 percent of cattle, and a full 99.9 percent of chickens. Last year's documentary Food, Inc., featuring organic crusader Michael Pollan, showed in shocking detail the none-too-pretty journey from farm to table. In most cases, the animals live in tightly packed quarters and are fed unnatural diets routinely dosed with a barrage of what are called nontherapeutic antibiotics (meaning they're given to healthy animals to prevent illness).

Industrial farmers have been quietly doing this since the forties, when it was discovered that the drugs could cause the animals to grow faster (thus maximizing profits). Now it's standard practice to use antibiotics both to fatten animals more quickly for slaughter and to offset the animals' unsanitary living conditions (packed into giant feedlots and confined enclosures, they produce large amounts of feces, which provide a handy breeding ground for bacteria to spread from one animal to another). The Union of Concerned Scientists has estimated that 70 percent of all antibiotics used in the United States are distributed not by doctors but by livestock producers—and no one is quite sure how much is in a dose. Robert Tauxe, M.D., deputy director of... (continued on page 260)
BRAINiAC riSing (continued from page 216)
an electrifying discovery for Lewis, who recalls being the only African-American in class during her first six years at the Brearley School, and she made it the subject of her dissertation and first book. “It’s about this ironic arc from white racial purity to what we now associate with black authenticity,” she says. “It’s an opportunity to ask the fundamental question, one we’re still grappling with: Are we really separate from one another? And it offers a resounding no.” Says the legendary Robert Farris Thompson, Lewis’s adviser at Yale and one of the pioneers in charting the African influence on visual arts in the Americas, “Her thesis, as we say in the vernacular, is going to blow hair on the walls of academe—it’s partially about coifure.”

Born and raised in midtown Manhattan, Lewis says, “I got my interest in art from my mother’s father, Shadrack Emmanuel Lee. When he was in the eleventh grade, he asked where the African-Americans were in the history books and was told that none of them had accomplished enough to merit being there. His pride was so wounded that he quit school and never graduated. He spent his life as a jazz musician and a painter, deliberately putting African-Americans into genre paintings.” His story, she says, “reminds me that art is foundational for life, not just something that enriches or embellishes it.”

It was Lewis’s good luck to come of age when history was on her side. Barack Obama was the first presidential candidate to form an arts-policy committee during his campaign, and in 2008, Lewis, then a doctoral candidate and faculty member at Yale, was invited to serve on it. She had impressed a lot of people by then, including Rob Storr, the dean of Yale School of Art. (He taught her at Harvard, and she also worked for him at MoMA.) Being on the Obama committee opened up the whole field of public arts policy to her. Landsman, whom Obama named chairman of the National Endowment for the Arts last year, got in touch with Lewis before he took office, and has been trying to get funding to bring her to the NEA. “I’d love to work with her on a new initiative called Our Town,” he says, “which will focus on showing that the arts can be an important part of neighborhood revitalization, urban renewal, and economic development. She’s so smart and so charismatic, and she has a great way with people—she’ll be a leader.”

For the moment, she’s installing her SITE Santa Fe show, which opens on June 20. She’s also finishing her book on Circassian beauties and is nearly done with a second book, Rise, about the importance of failure as one of life’s formative experiences. Lewis keeps in shape for her multiple activities by running (at Brearley, she was a 400-meter sprinter), working out at the gym, taking salsa lessons, doing yoga, and meditating. She still paints (something she started doing as a child, inspired by her grandmother) and has always had an active social life. Her friends include HIV/AIDS research doctor Mehret Mundefero, the recording artist John Legend, photography professor Deborah Willis, Chelsea Clinton, whom she was close to at Oxford, and the musician Wynton Marsalis. Once or twice a year, she horses her concentra- tion going to a rifle range for target practice. “I’ve never owned a gun,” she says, “and wouldn’t think of doing so. For me, it’s more like a meditative practice—in order to hit the target, you need to have a sense of calm.”

Calmness under pressure would serve her well in Washington. Lewis has a lot of ideas about how the arts can ignite local communities. “We don’t have a common dance in American culture, for example,” she says, “a way for people to engage physically. It would go a long way if we all understood how to swing dance again.” She thinks a lot about the Danish artist Ola- fur Eliasson’s 2003 The Weather Project, which filled Turbine Hall at the Tate Modern with light from an enormous artificial sun. “Seeing people come into that space and completely forget themselves, lying on the floor, was a powerful experience,” says Lewis. “It got me thinking about what James Joyce describes as a kind of wonder, an aesthetic experience that you’re not moved to possess or critique or judge, but simply to behold.”

Lewis’s book about failure grew out of Garrison Keillor’s address at her Phi Beta Kappa ceremony. “He was basically advising us to fail,” she says. “His point was that you’ll never really understand your capacity until you have that crisis, and get through it. He said this in his humorous way, but I took it seriously.” The irony is that Sarah Lewis is still waiting for her first failure. At least we can be sure, if funding for her NEA appointment doesn’t come through, she will know how to put the experience to extravagantly good use. 

HIGH FLiER (continued from page 224)
then it’s time to go home to my mother’s house” in Montana, and to her garden, her Mach 1 Mustang, and her big dog, Hesh. “Bad days, I have to watch a movie and look at color—dresses, pretty shoes, shirts, shoes, look at a magazine, add layer upon layer to block it all out,” she says, doing just that.

Russell had worked a corporate job at Nike and was finishing college when 9/11 happened. She came from a military family. Her father flew helicopters in Vietnam. She knew she couldn’t sit by. She already loved flying. She was agile with a forklift. So she decided to join up and apply for aviation. In flight school she discovered that helicopters are not natural fliers. “You have to impose your will on them.”

“They’re like the camel of the animal world. They bitch at you about standing up and down. They spit at you. They are surly creatures. But I love them.”

Sometimes she resents the Army for intruding on her personal life. “As a 34-year-old college-educated woman, I’ve signed away my right to have a sexual relationship, to have alcoholic beverages, to have a male in my room, real basic stuff.” But she’s also grateful. “They put millions into my training, and nowhere but the Army can I fly like I do.”

Her friends in the States used to say to her, “How do you feel about being over there so the Bushes can get rich on oil?” She didn’t have an answer. She still doesn’t. She just knows that as long as soldiers are here, she’ll be here, too. “Every time I hear it’s a U.S. soldier, I can’t help but think, If that was one of my brothers, what would I want for him? When I’m lazy or grouchy at being woken up at 2:00 A.M., I say, Self, how would you feel if that were Isaac or Christopher out there bleeding? And then I play the sound track of Apocalypse Now.” And off she flies.

PRIME SUSPECT (continued from page 233)
the Division of Foodborne, Bacterial, and Mycotic Diseases of the Centers for Disease Control and Prevention, says, “There is, at present, no requirement in the United States for pharmaceutical manufacturers to report how much is used for various purposes, or animals.”

“You can buy a 100-pound bag of tetracycline at an animal-feed store,” says Ellen Silbergeld, Ph.D., professor of envi- ronmental health sciences at Johns Hopkins Bloomberg School of Public Health. “I mean, this is so clearly a practice that is dangerous to the public’s health.” Silbergeld, a funny, frank woman not known for holding her tongue, is known in environmental circles as a leading authority on lead and mercury poisoning. About a decade ago, she was flooded when she learned from a colleague that antibiotics were added to animal feed, and plunged into study.
“I will take the gloves off and say that it’s time the pharmaceutical industry was brought to the table,” she says. “They’ve managed to escape attention, but they’re making an enormous amount of money off this. I don’t think they want to be noticed, because if there were scrutiny of it, and really intense pressure brought to bear on the FDA and others, it would be very, very hard to defend.”

Jonathan Safran Foer, whose latest book, *Eating Animals*, is an urgent manifesto against factory farming, says it’s a “broken, destructive, unethical system. Does anyone want antibiotics to become less effective for humans, for swine and avian flu to have the perfect environments in which to develop?”

Studies have shown that when new drugs are introduced on factory farms, antimicrobial resistance in animals can follow in short order. If humans eat meat containing this resistant bacteria and get sick, we may not respond to antibiotic treatment. Research shows that drug-resistant “superbugs”—including certain strains of *E. coli* as well as methillin-resistant *Staphylococcus aureus*, or MRSA—are linked to animal operations. Researchers theorize that current farming practices and doctors’ overprescription of the drugs are key causes of antibiotic resistance, which, estimates indicate, leads to the deaths of tens of thousands of Americans annually.

“The problem of antibiotic resistance is the number-one challenge we face today in controlling infections,” says Patricia Charache, M.D., professor of pathology, medicine, and oncology at Johns Hopkins. “We’re seeing bacteria and viruses that have developed resistance to the only drugs previously available to control them.”

Silbergeld adds that in several instances, “the pharmaceutical industry has actually been given permission by the FDA to market their drugs for use in animal feed before they’re approved for use in clinical medicine. And what that has done is that we’re essentially destroying the use of a drug before we have a chance to apply it to medicine.”

Recently, a group of researchers at Boston University made a startling discovery. They knew that antibiotics kill bacteria when given in high doses, but when the drugs are administered in low doses (as they are in factory farms), the bacteria found to actually mutate. As the study’s lead researcher, James J. Collins, Ph.D., described it, they formed “a zoo of mutants,” hardy enough to resist multiple antibiotics. “In effect,” he says, “what doesn’t kill them makes them stronger.”

I briefly contemplate becoming a vegetarian, until I discover that our meat supply may not be the only thing on our plates affected by antibiotics. These drugs end up in the manure of animals, which is commonly used to provide nutrients for food crops. As to whether antibiotics can be absorbed by plants, scientists at the University of Minnesota studied corn, lettuce, and potatoes in 2005 to find out. The soil was infused with liquid hog manure containing sulfamethazine, a commonly used veterinary antibiotic. As it happened, the drug was taken up by all three vegetables. More research is needed to determine how this may affect humans, but in the meantime it’s another reason to go organic, as such crops are less likely to be affected.

A bill sponsored by Representative Louise Slaughter (Democrat of New York, and yes, that’s her real name), which would limit the amount of antibiotics used on factory animal farms, is currently circulating in the House. Slaughter says that if you mixed an antibiotic into your child’s cereal as a preventative, “people would think you were crazy.” Agribusiness and the pharmaceutical industry, two formidable opponents, have shot down legislation in the past, but Slaughter thinks her bill has a decent chance of passing. “We have 104 cosponsors already in the House, and we’ve got something that nobody has had in the last eight years: The FDA is supportive,” she says. “That’s tremendously important.”

The American Medical Association, the CDC, the American Society for Microbiology, and the World Health Organization have also called for limits on the use of antibiotics, but until recently, the FDA has been silent about the issue. Then, last July, the Obama administration made a surprise announcement that, in an effort to reduce the spread of dangerous bacteria in people, it does not support the routine use of antibiotics in farm animals.

The livestock industry was not pleased. The National Pork Producers Council claims that banning antibiotic use in livestock and poultry production will have little or no effect on antibiotic-resistant illness in people, and that hog farming without drugs is difficult and expensive. Ten years ago, however, Denmark banned the use of nontherapeutic antibiotics for food animals. The health of the herds was not significantly affected, and the country’s pork industry actually grew. It is now one of the most successful pork exporters in the world. Not only was it good for business, it was also good for health: A Danish study found that eliminating the use of nontherapeutic antibiotics reduced antibiotic-resistant bacteria in animal products. The rest of Europe followed Denmark’s lead in 2006.

So why couldn’t it be done in America? Silbergeld says that it could. She cites a study she analyzed that the Perdue poultry company conducted on seven million chickens. The company put antibiotics on the menu for some chickens, while others did without. Otherwise, each group was the same. The result? “Nothing was different,” says Silbergeld, who published a paper of her analysis that, she says, has not been challenged by the company. “There was no significant increase in death, or any parameters they were concerned about—losses from illness, increased veterinary expenses,” she says. “So my answer is that their own data say they can do it.” (Perdue’s Web site says they “do not use antibiotics for growth promotion.... We use antibiotics as directed by our company’s team of veterinarians....”) The company did not respond to my request for comment.

In the meantime, with summer’s leisurely hours on the patio beckoning, what’s a meat lover to put on the grill? The experts I canvassed agreed that I should look for—and pay for—the USDA certified-organic label, which guarantees the animal was not given antibiotics or growth hormones. Other labels can be murky. The tags I’d been drawn to, such as natural or free-range, do not mean the animals are drug-free. Nor does a grass-fed label ensure that the meat is pure—look instead for the American grass-fed logo. (Grass-fed beef, as a bonus, is healthier: A recent study led by the USDA and researchers from Clemson University in South Carolina found that compared with grain-fed beef, grass-fed beef is higher in beta-carotene, vitamin E, omega-3s, calcium, magnesium, and potassium.) Whole Foods Market has also pledged not to sell meat from farms that use antibiotics in feed.

For the last word, I phoned Dan Barber, executive chef of Blue Hill New York and Blue Hill at Stone Barns. If anyone knows how to make smart food choices, it’s this farm-to-table pioneer. “Listen,” he says, “don’t buy any meat if you don’t know where it’s from. Buy local grass-fed beef, or local pork, or local chicken. I really think that asking, ‘How was this animal raised?’ and ‘What was it eating?’ are going to become much more popular questions.”

I once rolled my eyes at menus that supplied a lengthy biography of the animal on offer (“raised in a shady valley near Clear Fork River, where . . .”) but no more. From now on, I’ll select my meat with the same diligence that I give my kohlrabi. If I don’t know where my steak comes from, I’m not eating it.