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Vegetarianism and Planetary Health

I begin by asserting that a vegetarian, even a vegan diet, from a nutritional standpoint, is at least as healthy as, and in all probability healthier than, one which centers on or includes meat. Scientific evidence supporting this claim is beginning to accumulate, and abundant material is available for those who wish to pursue the issue (Anonymous 1988a; Anonymous 1988b; Barnard 1993; Chen 1990; Melina, Davis, and Harrison 1994; White and Frank 1994). In addition, every good bookshop today has several vegetarian and/or vegan cookbooks, and many titles currently on the market contain excellent chapters on the fundamentals of vegetarian nutrition as well as references to contemporary nutritional research. For these reasons I shall not attempt to summarize here the evidence in favor of a vegetarian diet.

My second preliminary claim is that meat-eating in general is, and in particular certain kinds of meat-eating are, unhealthy. The statistical correlation between high meat consumption and increased probability of colon, breast, and other cancers, heart disease, and atherosclerosis—far and away the leading causes of death in North America—has been well established by many independent researchers (Barnard 1990; Fiddles 1991; Mitra 1991; National Research Council 1989; Robbins 1987). This realization prompted Health and Welfare Canada (a federal government department) to issue a new version of *Canada's Food Guide to Healthy Eating*, which appeared in 1992. Alternatives to meats (such as tofu and legumes) are accentuated, as are 5–10 servings per day of vegetables and fruits and 5–12 servings per day of grain products. Critics maintain that an even greater shift toward a vegetarian diet might have been endorsed in the *Guide* had it not been for the extraordinary (and entirely predictable) behind-the-scenes lobbying efforts of the livestock industry ("Industry Forced Changes" 1993).

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Evidence continues to mount linking meat-eating with serious health problems, and vegetarian diets with better health and greater longevity (Jethalal 1994; Melina, Davis, and Harrison 1994).[1] People tend to think of animal fat as the major issue here, but numerous other risk factors are associated with eating meat. These include the presence in it of parasites (such as microorganisms of many sorts, roundworms, and tapeworms) that cause trichinellosis, toxoplasmosis, helminthic diseases (anemia, infections, cysts, etc.), Legionnaires's disease, salmonellosis, mad cow disease, Hong Kong bird flu, and other food borne illnesses; hormone and antibiotic additives; and toxins (such as pesticides and herbicides, which concentrate as they move up the food chain).[2] Mindful of these threats to health, many have begun to accept that a shift in diet is not only prudent, and therefore sanctioned by self-interest, but also reflects a differently oriented world view—a new vision of how our lives on the planet ought to be led. This includes an awareness that the good life for a human being entails good health, that good health in turn rests on a carefully chosen diet, and that our diet in part reflects as well as determines our species' impact on the biosphere. Many are learning that the amount of meat we consume collectively has a profound effect on how we use and manage natural resources—forests, land, water, fossil fuels. To put it simply, the greater our dependence on meat and other animal products, the more we commit these resources to satisfying this demand; if (as I also argue) the prevailing form of agroindustry abuses the environment in ways that are deleterious to our health then the more animal products we consume, the more our well being will suffer. What dawns here is an awareness that the orientation of an unhealthy society must be changed not only for the good of each of its members but also for that of nature as a whole.

We live in a society that encourages individuality, self-reliance, self-development, and the cultivation of personal taste. We are bombarded all the time by messages that encourage us to pursue the construction of selfhood by means of consumer preferences, that is, by acting out self-centered desires and fantasies as more or less powerful purchasers within the global marketplace. We are well conditioned in the mode of thinking that interprets our consumer choices as expressions of personal freedom that are primarily, if not exclusively, of consequence to ourselves. And numerous vested interests energetically promote this outlook: business leaders, industry spokespersons, the media, politicians, advertisers, and image makers, to name a few. It therefore takes major effort to develop a contrasting form of awareness, namely, one that acknowledges that all our choices have wider consequences. Some of these have an impact on the environment. When we begin to appreciate these connections, we also start questioning our choices and the influences that have helped bring them about, a process some might label radical or subversive, but others might simply call exercising healthy commonsense. Being sensitized by ecological issues, as an increasing number of citizens are today, opens our minds to the possibility of change through the formation of new values.[3] Vegetarianism may be and often is a part of this creative ferment.

The eco-destructive side of the meat industry's operations has been summarized concisely, with ample documentation from both government and nongovernment

sources, by John Robbins in *Diet for a New America* (Robbins 1987, Part III). His findings are substantiated by many others as well (Fiddes 1991, chapter 14; Hill 1996 chapter 4; Lappé 1992). These effects include: toxic chemical residues in the food chain, pharmaceutical additives in animal feeds, polluting chemicals and animal wastes from feedlot runoff in waterways and underground aquifers, loss of topsoil caused by patterns of relentless grazing, domestic and foreign deforestation and desertification that result from the clearing of land for grazing and for cultivating feed, threatened habitats of wild species of plants and animals, intensive exploitation of water and energy supplies, and ozone depletion owing to the extensive use of fossil fuels and to significant production of methane gas by cattle. Sharon Bloyd-Peshkin sums up this sorry state of affairs in these simple terms: "Meat production is a major source of environmental damage" (Bloyd-Peshkin 1991, 67). Furthermore, meat production is also extremely wasteful of energy. Some specific data will place these complex problems in context so that we can view them in relation to one another and better comprehend them.

In Canada, since the time of white settlement, expanding agriculture has been the major factor in an 85% reduction of wetlands (Government of Canada 1991, 9-9, 9-15). Agricultural acreage has increased fourfold since 1900, and the total area under irrigation more than doubled between 1970 and 1988 (Government of Canada 1991, 26-6, 9-14). It must be inferred that the consumption of meat is a powerful force here, given that in North America some 95% of oats and 80% of corn produced ends up as livestock feed (Agriculture Canada 1994; Animal Alliance of Canada 1991; Government of Canada 1991). David Pimentel, a scientist who has been studying the environmental impact of modern American agricultural methods for over two decades, reports that:

> Substituting a grass-feeding livestock system (using only ruminant animals) for the current grain and grass system was found to reduce the energy inputs about 60% and land resources about 8%. . . . [In addition, it] would free up about 300 million tons [272.23 tonnes] of grain for export each year. This amount of grain is sufficient to feed a human population of 400 million a vegetarian-type diet for an entire year. (Pimentel 1990, 12)

In Canada, a country with one-tenth the population of the United States, farm animals produce 322 million liters (85 million gallons) of manure *daily*, an overwhelming proportion of which comes from cattle. Each marketed kilogram of edible beef generates at least 40 kg (88 lbs) of manure, and each of pork 15 kg (33 lbs). These wastes, plus the runoff of water used to clean farm buildings and equipment and pesticide residues and other agricultural chemicals, are often poorly handled and cause the contamination of waterways and soil as well as air pollution (Government of Canada 1991, 9–26). Finally, it is calculated that between 400 and 2,500 gallons (1,691 and 10,570 L) of water are required in the overall process by which one pound (2.2 kg) of meat is produced (Animal Alliance of Canada 1991); a pound of wheat, by contrast, requires only 60 gallons (254 L) (Fiddes 1991, 215).

Obviously not all of the environmentally hostile effects of today's unsound agricultural practices can be attributed to the production of animals for food. And it is

clear that some of the abuses could be mitigated by, for example, a more dedicated approach to recycling animal manure (and human waste) into crop fertilizer, greater reliance on natural means of pest control instead of harmful chemicals, and the like. So it has been argued frequently that the proper target of criticism is not meat production per se, but rather the intensive rearing methods used by contemporary agribusiness. There is some point to this rejoinder, and surely those who obtain their meat from their own or others' free-range operations dedicated to organic methods of animal husbandry contribute less to the environmental toll on the planet that is exacted by human life. But given the appalling rate at which smaller-scale family farming businesses are being forced out of competition (and out of existence), to be absorbed by corporate conglomerates driven by the worst dynamics of capitalist concentration of wealth in ever fewer hands, the opportunities for obtaining "environmentally friendly" meat are extremely rare in practice.[4] Only a tiny fraction of the population *could* exercise this option, taking current agricultural trends into account, and an even tinier group *desires* to do so in the first place. In any event, vegetarians—who *do* find environmental considerations importantly motivating relative to their dietary choices—are able to live even more lightly on the land than do meat-eaters of any description.

Is there sufficient evidence to back up this assertion? I have no doubt that there is. Consider the following observation, for instance.

> All the grain fed to livestock could feed five times as many people. *(Proponents of intensive animal agriculture claim that we only put animals on land that could not support plant production. But we could grow more than enough plant food for human consumption if we used even a fraction of the land that is now used to grow plant food for livestock consumption.)* (Animal Alliance of Canada 1991)

If one of the guiding ideals of ecologically informed ethical thinking is that we ought to minimize the harmful impact of our lives—individually and collectively—on the biosphere, then it follows that we ought to make those lifestyle choices that help achieve this objective. The principle of nonmaleficence (avoiding or minimizing harm) certainly seems to be about as basic a moral precept as can be imagined. And even if we added to the "Do no harm" rule the qualifier "all things being equal," the obligation to choose the vegetarian option would still remain, for it has been shown by many nutritionists that a vegetarian diet lacks nothing people need: meat, in short, is not necessary for good health. And it is highly questionable, as I have already pointed out, whether reliance on consuming only free-range, organically farmed animals would suffice to maintain the kind of diet most North Americans have come to take for granted, or even a diet that featured a significantly reduced component of meat. It plainly could not sustain high, North American-style levels of meat consumption worldwide (Brown, Abramovitz, Bright, Flavin, French, Gardner, et al. 1997, 40–41). A diet that relies heavily on meat only appears affordable and environmentally sustainable to those who are unaware of the larger ecological costs of meat production; who assume that they do not have to be factored into our choices and their conse-

quences; or else who believe that the costs can be passed on to others, for example those in developing nations and our children. We all have to eat, and some appreciable impact on the planet is inevitable as we pursue this natural end. But we should aim to minimize the ecological stresses that are under our species' control. Vegetarianism seems clearly to be the best way to reduce the environmental harm and degradation caused by humans' quest for nourishment; by enabling us to eat lower down on the food chain, it makes more efficient use of solar and caloric energy inputs. By being energy-saving, vegetarianism also lightens the exploitative load we place upon the earth's ecosystems. This alternative diet, then, represents a commitment that should, for the reasons given above (among others), be made by each of us. Many authors, as we have seen, draw attention to the serious global environmental consequences of the meat production system. What has not been subjected to as much scrutiny is its effects on planetary biodiversity and on our attitudes toward nature as a whole. Let us look at these issues in turn.

There are many causes of species extinction, both natural and human. And with respect to human factors, no single activity accounts totally for the sort of ecocide that undermines species viability. We should not expect, therefore, that the process whereby the flesh of animals appears on our tables by itself explains why certain ecosystems and the life-forms they support are either under threat or compromised beyond recovery.

We need to begin by getting some idea of the scope of species eradication by humans. According to Edward O. Wilson, who has conducted one of the most detailed studies of the problem, "Ninety-nine percent of all the species that ever lived are now extinct" (Wilson 1993, 344). Most of this carnage results from natural causes (evolutionary, geological, atmospheric, and astronomical events being the principal agencies). Wilson projects, however, that the rain forest extinctions for which humans are responsible are occurring at between 1,000 and 10,000 times the natural rate (Wilson 1993, 280). What does this mean in terms of numbers of species lost? Anita Gordon and David Suzuki tell us that 20,000 species are driven into extinction annually (Gordon and Suzuki 1990, 2). Richard Swift offers a still graver statistic: "We are pushing a hundred species a day, four species an hour, into evolutionary oblivion" (Swift 1997, 8). Wilson's "maximally optimistic" approximation of 27,000 per year (74 per day, 3 per hour) is a mean between these extremes (Wilson 1993, 280). A recently completed twenty-year study by the World Conservation Union shows that "at least one in eight plant species in the world—and nearly one in three in the United States—are under threat of extinction" (Stevens 1998). Whatever the most accurate figures may be, this horrendous pace of destruction stems from several major sources, including the clearing of foreign and domestic forests for agricultural purposes and development, drainage and filling of wetlands, damming of rivers, use and abuse of coral reefs, and relentless high-tech ocean fishing. Among these, deforestation and overfishing are the most evident areas in which a relationship between human diet and species extinction are to be found. Approximately 70% of ocean fish stocks are said to be in imminent danger of collapse (Food and Agricultural Organization of the United Nations 1995, 54). Even more worrisome is the devastation of the earth's forests, par-

ticularly its irreplaceable rain forests. For this reason we shall concentrate our attention here.

Most people who follow the news are aware that global rain forests perform unique functions within the regulative cycles of the biosphere, helping maintain global temperature, providing fresh supplies of oxygen and water to the atmosphere, and sheltering the most complex web of life imaginable. It is reported that "there are more different species of birds in each square mile of the Amazon than exist in all of North America" (Gore 1993, 23). Up to 300 species of trees per hectare (2.47 acre area) and 2,200 plant species per square kilometer (0.37 square mile) have been identified in Neotropical (Latin American) rain forests (Terborgh 1992, 75). A survey of a mere 19 trees in Panama yielded 955 species of beetles, while in Peru *one* sample tree housed 43 species of ants (Terborgh 1992, 58). In all, 40% to 50% of the world's plant and animal species dwell in the rain forests (McKisson and MacRae-Campbell 1990, 25). This superabundance of life-forms yields a wide range of raw materials used in the manufacture of all manner of consumer goods and pharmaceuticals upon which the quality of human life crucially depends. Products of great value include hardwoods, rattan, natural rubber, waxes, essential oils, fruits, and nuts. One-quarter of all drug compounds obtained from pharmacies contain rain forest ingredients, while for most of the world's people, traditional medicines extracted from plants are used exclusively to treat ailments (Collins 1990, 30, 32, 186; Food and Agricultural Organization of the United Nations 1995, 60). A "habitat holocaust"[5] continues around the clock, however, with an estimated 142,000 square kilometers (54,000 square miles) of rain forest being sacrificed to human need and greed annually (Collins 1990, 96). Sadly, "fewer than one percent of tropical rain forest plants have been chemically screened for useful medicinal properties" (Collins 1990, 32). Meanwhile, "studies in Peru, the Brazilian Amazon, the Philippines and Indonesia suggest that harvesting forest products sustainably is at least twice as profitable as clearing them [i.e., the forests] for timber or to provide land for agriculture" (Food and Agricultural Organization of the United Nations 1995, 62).

That the rain forests are the earth's principal sustainers of species diversity seems unarguable. But why does species diversity matter so much? Thomas E. Lovejoy, a conservation biologist, places the matter in perspective:

> Assuming that the [earth's] biota contains ten million species, they then represent ten million successful sets of solutions to a series of biological problems, any one of which could be immensely valuable to us in a number of ways. . . . The point . . . is not that the "worth" of an obscure species is that it may someday produce a cure for cancer. The point is that the biota as a whole is continually providing us with new ways to improve our biological lot, and that species that may be unimportant on our current assessment of what may be directly useful may be important tomorrow. (Lovejoy 1986, 16–17)

In more general terms, Wilson has commented that "biodiversity is our most valuable but least appreciated resource" (Wilson 1993, 281). Quite simply, it has often been greatly to human advantage to be able to draw upon this precious resource, and therefore it is likely to be so in the future. Our own chances of survival as a species de-

pend upon the rich variety of other life-forms that abound, and the rain forests comprise a unique "genetic library" of virtually untapped information (Collins 1990, 32).

The assumption being made here, of course, is that global biodiversity belongs to everyone. And perhaps it does—or should. But there is also an important sense in which those who live in developing nations and who are often caught in the middle of large-scale assaults on biodiversity have special interests at stake. Vandana Shiva points out that:

> Biodiversity is a people's resource. While the industrialized world and affluent societies turned their backs to biodiversity, the poor in the Third World have continued to depend on biological resources for food and nutrition, for health care, for energy, for fiber, and for housing. . . . Biodiversity is fast becoming the primary site of conflict between worldviews based on diversity and nonviolence and those based on monocultures and violence. (Shiva 1996, 66, 120)

Thus, where biodiversity is under threat, so too is cultural diversity, for the human lives sustained by a rich environment of life-forms are intimately woven together with it.

Solid, human-centered reasons for preserving biological diversity are to be found in these reflections. But might there not be additional good reasons for promoting species diversity? We have no difficulty valuing other species instrumentally, in terms of what they can do for us. Perhaps we can also value them for their own sake, that is, for having a marvelous way of being that is worthy of celebrating quite independently of any actual or potential use we might make of them. All valuations of nature are human-centered to the extent that it is humans who make them and human experience that encompasses both the departure point for, and the end state of reflection upon, the valuation process. This conclusion seems inescapable. But it does not negate our ability to value otherness for its own sake and in its own terms. We can admire and appreciate the unique adaptations and capacities that characterize other species no matter how remotely related to ourselves they may be. We can also discover in nature non-resource instrumental values, that is, sources of value to humans that have an entirely different significance than what is yielded when we transform animals and natural objects into commodities. We all recognize that nature has profound aesthetic, symbolic, historical, and spiritual importance to us, and also that it offers potentials for psychological renewal (such as open space and wilderness) that many of us enjoy.[6] In short, we value nature as a whole and parts of nature both as means to specific ends of our own—physical, mental, and spiritual health—and as things to celebrate and cherish for a wide variety of reasons.

We are now in a position to consider the role animal agriculture plays in undermining species diversity on the planet. U.S. Vice President Al Gore has written that "at the current rate of deforestation, virtually all of the tropical rain forests will be gone partway through the next century" (Gore 1993, 119). It is difficult to establish a precise correlation between animal agriculture and rain forest decimation.[7] Rain forests are cleared by humans seeking firewood, settlement space, farm plots, monoculture plantation space, expanded land holdings, oil, minerals, and pastureland for cattle. Hydroelectric projects, roads, and other development schemes also take their toll.

Notwithstanding that these pressures are numerous and diverse, grazing may be identified as a major contributor to the process of destruction.

Conversion of tropical forest to pastureland for cattle has proceeded at a remarkable pace in Central America since the middle of the twentieth century (Rifkin 1992). The inherent nature of rain forests is such that when cleared, only poor quality, unsustainable pastureland remains, and this contributes to the dynamic of expanding destruction as new grazing areas are sought to replace older, exhausted areas (Collins 1990). Norman Myers contends that not only in Central America but also from Mexico to Brazil, "the number one factor in elimination of Latin America's tropical forests is cattlegrazing" (Myers 1984,127). Most of the beef produced in this region is exported to the American market, though an increasing portion goes to Western Europe and Japan (Myers 1984, 128; Rifkin 1992, 193). The United States contains only 5% of the world's population, yet it produces, imports, and consumes more beef than any other country (Myers 1984, 129). The beef imported from Latin America ends up as fast food burgers, processed meats, and pet foods. Myers notes that "convenience foods . . . constitute the fastest-growing part of the entire food industry in the United States"; 50% of all meals are now consumed in either fast food or institutional settings (Myers 1984, 130). According to Arnold Newman, for each North American fast-food hamburger, "the environmental cost is half a ton of rainforest. . . . Expressed as forest area, the cost is 67 square feet—more than 6.25 square meters of forest—for every hamburger sold" (Newman 1990, 126).[8] This pattern demonstrates forcefully the connection between meat-eating and rain forest destruction, what Myers calls "the 'hamburgerization' of the forests," and yields a further moral indictment of the omnivorous diet (Myers 1984, 142). We cannot save the forests just by excluding fast-food hamburgers from our diets, but we can help turn things around if enough of us make this choice and other, related dietary decisions, and if in this way we all set an example for the rest of the world.

The case of rain forest decimation for cattle grazing may be read as a typical ecological horror story. We have observed that it is much more complicated than this in reality. But viewed through a different prism, what we encounter is one of the many forms of human manipulation of nature. By introducing this term I mean to mark out that range of activities that starkly display our species' tendency to treat nature and natural biological systems purely as instruments to achieve human, and often very narrow objectives.

According to the manipulative mindset, nature is, or parts of nature (such as members of nonhuman species) are, merely a collection of resources or materials for our disposition, use, and disposal. The slash-and-burn practice that seals the fate of rain forests as obstacles that are "in the way" of profit to be gleaned from low-cost meat provides but one example. While the rain forests are treated as dispensable, the animals now bred on this land are themselves no more than commodities destined for some distant stockyard, just further contents of the organic cash till that is nature. But the attitude that is evident here, which permits the ruthless domination and exploitation of cattle from rain forest regions, is in fact no different from that which approves

the widespread practice of animal confinement on factory farms. Animals there have manifestly become machines or artifacts of production and reproduction. It is not enough that they give their lives (and deaths) to the food industry and to the consumers of food, however. Now the silent "laws" of demand, supply, economic growth, and profit make it necessary for these animals to be genetically "improved" so that they will be even more efficient food generators or, in other words, ever more constantly productive and reproductive. Over a decade ago a report prepared for the U.S. Congress predicted (perhaps a bit overzealously) that "before the turn of the century cattle ranches in Texas may be able to raise cattle as big as elephants. California Dairy farmers may be able to . . . increase milk production by more than ten percent without increasing food intake" (U.S. Congress, Office of Technology Assessment 1985, Introduction). Pigs twelve feet long and five feet high are not beyond scientific speculation.[9] Such laboratory triumphs, which have been aptly called "monstrosities of utility" (Fox 1992, 104), may never come to be, but clones (genetically identical copies) of superproductive animals are already on the way (British Medical Association 1992, 100–101; Spallone 1992, 116).

These developments should not surprise us, as we now witness purpose-bred lifeforms being patented (Fox 1992), and animals being genetically engineered to grow improved body parts that can be harvested for human transplant surgery (Concar 1994). Some have even mooted the possibility of breeding animals without pain receptors, which would turn these creatures into the insensate machines Descartes fantasized all animals to be (Rollin 1995). Pigs with modified physiologies that experience little or no stress are the subjects of active research (Mason and Singer 1990). If these experiments succeed, then (the thinking presumably goes) it will be all right to treat these animals as mere things, and major ethical objections to factory farming, animal research, and similar types of exploitation will simply melt away.

What does all this add up to? The meat industry, itself feeding off human demand for certain types of food, is ushering in a form of animal raising and use that is totally lacking in compassion and a sense of connection with nature. Genetic engineering arguably aggravates the animal suffering inherent in factory farming as it manipulates breeding stocks to produce new animal types (Fox 1992). One author observes that "the disastrous effects of industrialized agricultural methods are being repeated with new biotechnology" (Spallone 1992, 54). We seem to be learning to connect on one level—concern with ecological issues—while badly disconnecting on another. Most people would not visit a slaughterhouse for any reason,[10] and from what they know of modern livestock production processes, would never want their pet or any animal they cared about treated as food animals routinely are. But at the same time the consumer selection of meat and meat products as foods of choice goes on and simply is not thought about. In this manner we condition ourselves to accept the manipulation of nature that as sensitive, caring people we ought to be aware of and reject. We thus find ourselves caught in a trap of our own making. We can, however, seek a way out by being reflective and deciding in favor of a lifestyle that does not rest on the subjugation of nature and the suffering of nonhuman forms of life. This is the vegetarian option with which I began.

I believe vegetarianism encourages us to think of ourselves as *part of* nature rather than as *apart from* nature. The vegetarian outlook recognizes the importance of ecologically sustainable human activity and affirms the requirement that we seek to minimize our impact on the planet and the amount of harm we do in the course of looking after our own essential needs. Mindfulness of both short- and long-term consequences of individual choice and collective human behavior is a hallmark of a commitment to vegetarianism as a way of life. This choice also entails compassionate cohabitation with other species and respect for the earth to the greatest extent that these precepts can be followed both in one's personal activities and in social policies and planning. The vegetarian way of life offers us the chance to re-establish contact with the land and to recover connections with nature. Finally, vegetarianism is liberating in the sense that it frees us *from* the exploitation of animals and nature, and it frees us *to* discover who we are in more positive, life-affirming ways that are healthy for both humans and our planet.

NOTES

1. It is assumed in all such discussions—as I assume here—that the ideal vegetarian diet is adequate in protein and other essential nutrients, high in fiber and low in fat.
2. This is based in part on Vorhaus (1988). In relation to the problem of drug additives, see Nikiforuk (1997).
3. It is for this reason that Paul B. Sears first labeled ecology "subversive." See Sears (1964).
4. Large multinational corporations seek to control the commercial food production process, from feed grains to slaughter and meat packing. For discussion of these trends, see Noske (1997), Rifkin (1992), Mason and Singer (1990), Strange (1988), and Fox (1992).
5. The term comes from Newman (1990, 126).
6. For further discussion, see Fox (1993–1994; 1998) and Norton (1988).
7. One factor that compounds the problem will not be known to most readers: Imported cattle meat is classified as "domestic beef" by the U.S. government once it enters the country, which obscures its point of origin. See Norman (1984, 131).
8. Some fast-food giants, notably Burger King and McDonald's, claim no longer to be using rain forest-grown beef; others have made no such statement.
9. Fox (1992, 104) attributes this prediction to J. Mintz.
10. I have, and it is a profoundly disturbing experience. For readers who have strong stomachs and might be willing to "visit" a slaughterhouse through the pages of a book, I recommend *Dead Meat* by Sue Coe (1995) and *Slaughterhouse* by Gail Eisnetz (1997).

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