

York, featuring "Horsemeat Special Pattie Burgers" and "Super-horsemeat Steak Sandwiches." Business was brisk at the commissaries with the low-priced horsemeat products outselling comparable beef products by a wide margin. At Lexington Avenue and Fifty-third Street, customers lined up twelve deep to taste what New Yorkers inevitably began to call "Belmont Steaks." But M and R's experiment was short-lived. Complaints from irate self-identified horse lovers and the American Horse Council, the Humane Society, and the American Horse Protection Association began to catch the ear of the beef lobby. Senators John Melcher of Montana and Lloyd Bentsen of Texas therewith informed Navy Secretary John F. Lehman, Jr., that they were extremely disappointed in the navy. How did they expect to recruit volunteers if they gave the impression the navy feeds its people on horsemeat? Especially since cattle have been selling for less than their cost of production, and due to the recession and adverse publicity about cholesterol, beef consumption is falling. Shortly thereafter, all three commissaries discontinued their sale of horsemeat.

I said at the outset that puzzling food preferences and aversions ought to be seen in relation to whole systems of food production—systems which have long-and short-term consequences, do not necessarily dish out benefits equally to everybody, and in which "good to sell" may play a role as prominent as "good to eat." This caveat applies to the explanation of the United States' aversion to horseflesh. I have not as yet given proper recognition to the fact that Americans exhibit a hierarchy of avoidances and preferences for various other kinds of meats and that the horse is by no means the only domesticated animal whose flesh is held in low esteem. What remains to be done, therefore, is to supply an explanation for the overall hierarchy of the principal meats available to the American consumer.

And so, onward to the riddle of why beef became king.

CHAPTER SIX

HOLY BEEF, U.S.A.

AMERICANS CONSUME about 150 pounds of "red meat" per capita per year. About 60 percent by weight is beef and veal; 39 percent is pork; 1 percent is lamb and mutton; and the amount of goat meat consumed is almost too small to measure. Over a three-day period 39 percent of Americans will eat beef at least once, 31 percent will eat pork at least once, and neither lamb nor goat is likely to be eaten at all. During a one-week period 91 percent of United States households purchase beef; 80 percent purchase pork, 4 percent purchase lamb; and practically no one purchases goat. Why is beef "king" in America? Why is pork the runner-up? Why are lamb and mutton so little appreciated? And why is goat meat almost as unpopular as horsemeat?

The preference for beef some say was transplanted from Great Britain along with the English language—a nice explanation as long as you ignore the fact that the English traditionally consumed almost as much mutton as beef, and that the majority of Americans do not have British ancestry. Another notion that we can easily dispense with is that the preference for beef is an ancient heritage shared by all Europeans that harks back to the days when cattle were a medium of exchange and therefore symbolized wealth and power. Or as one "good-to-think" scholar would have us believe, beef eating is part of a "sexual code of food which must go back

to the Indo-European identification of cattle . . . with virility." Even if beef is somehow a sexier meat than its rivals, its status as an item of consumption has proved to be extremely variable among the Indo-European family of nations which, after all, includes Hindu India, where, as we saw, it is prohibited, not preferred. Another heavy blow to this explanation is that Americans were not primarily beef eaters during Colonial times nor during the last century. In fact, as we'll see, beef consumption in the United States substantially surpassed pork consumption for the first time only in the 1950s. The challenge which must be met is not merely why Americans think beef is good to eat but why there is an order of preference for beef, pork, lamb, mutton, and goat which has changed considerably from Colonial times to the present.

In 1623, Plymouth Colony had six goats, fifty pigs, and many hens. The first cows provided milk, not beef, and did not arrive until the next year. Pigs, goats, and sheep were a more important source of meat than cattle at most of the earliest settlements. William Wood, writing in the year 1633 about Massachusetts Bay Colony, asked, "Can they be very poor, where for four thousand souls there are fifteen hundred cattle, four thousands goats, and swine innumerable?" In 1634 in Jamestown, pork and kid were the only "red meats" eaten by the "better houses."

Goat was the first "red meat" to be knocked off the Colonial dinner table. It faded into the gastronomical great beyond as soon as there were enough dairy cattle to keep the colonies well supplied with milk. Since the colonists used goats primarily as a source of milk, goat meat was a by-product. In competition with cattle, goats can win out as a source of milk and meat only in lands with small farms and scant pasture, the opposite of the conditions which existed in Colonial America. With plenty of land and pasture, American farmers quite reasonably preferred to own one cow rather than four or five goats to get an equal amount of milk. As soon as dairy cattle began to multiply, goats virtually disappeared. To this day the majority of Americans have never tasted goat meat. In fact one can search through a stack of

American cookbooks from the *Joy of Cooking* to the *James Beard Cookbook* without encountering a single recipe for it. The few Americans who consume goat tend to be low-income southerners, especially blacks, with rural sharecropping or slave ancestry, whose parents never owned enough land to keep a cow. Goats are also in favor among the generation of back-to-the-land ex-hippies whose small farms are better served by one or two small animals rather than one large expensive cow. And not surprisingly, Hispanic Americans who live in the arid scrublands of the Southwest and whose ancestors were small-scale farmers and herders also like goat meat. The association between goat meat and impoverished and exploited racial and cultural minorities has been bad for the goat's gustatory image and helps, I think, to explain why goat meat actively repels the average American almost as much as horse or dog meat.

What about sheep? Sheep—especially lamb—ranks considerably higher in terms of gustatory prestige than goat, but far below cattle and pigs. Per capita consumption of mutton and lamb—mostly lamb—in the United States is tiny compared with the amount of mutton and lamb consumed in other countries. Sheep became bad to eat and bad to think for reasons similar to those which brought about the downfall of the goat. Sheep can only be an efficient large-scale producer of animal flesh if lamb and mutton are by-products. This explains the prominence of lamb and mutton in traditional British cookery; they were by-products of the raising of sheep for wool. The British ate sheep culled from the flocks which provided wool for England's woolens industry. In their haste to shear more sheep, big landowners destroyed the forests of northern England and Scotland and forced the peasants to stop farming and take up herding. Intensive grazing prevented the regrowth of trees, and the peasants went hungry for lack of crops. Sheep thereby acquired a central place in British cuisine as well as a reputation for being an animal that metaphorically ate both trees and people (unlike goats, which literally eat trees).

A curious side effect to the reign of the sheep in Scotland was

the appearance of a taboo on the consumption of pork. Bereft of trees, the common folk of Scotland and Ireland stopped raising pigs; they turned against pork and came close to abominating the animal itself in the Old Testament manner. Early in the eighteenth century the pig's reputation had sunk so low in Scotland and Ireland that the mere sight of one brought bad luck. Modern-day Scots find this hard to believe because pork once again ranks high among their preferred foods. What happened was that the pig regained its popularity when potatoes were introduced. Pigs became good to think again when they acquired a new ecological niche, rooting for leftovers in the potato fields. But remnants of the pig taboo show up along the Maine coast where descendants of the early Scotch-Irish immigrants still say that the sight of a pig brings bad luck to mariners.

The American aversion to mutton and lamb was likewise linked to the British woolens industry. English mercantile policy dictated that the American colonies, like Scotland, should grow wool but should not manufacture woolens for export. So raising sheep could not be as profitable as raising pork and beef, which, as I pointed out in the previous chapter, the English were eager to import in prodigious amounts. Gradually the taste of lamb and especially mutton became unfamiliar to the majority of Americans except in New England, where independence led to a surge in woolen manufacture and an increase in sheep grazing, centered in Vermont. Southerners, lacking a woolens industry and happy to wear cotton garments, experienced a more thorough extinction of the taste for lamb and mutton than northerners. In fact many southerners to this day do not distinguish between sheep and goat as a source of meat and regard the one with as much displeasure as the other.

Just before the Civil War, mutton and lamb accounted for about 10 percent of all the fresh meat slaughtered in New York. But as dairying replaced sheepherding throughout New England, the center of sheep production moved further west, and the cost of transportation made lamb and mutton less competitive. Finally, with the twentieth century and the development of synthetic

fabrics, wool lost much of its market. Sheepherding became confined to the most remote western rangelands, and despite the twentieth-century boom in meat eating, the consumption of lamb and mutton continues to dwindle.

The other side of America's diminishing interest in raising and eating goats and sheep (and abiding rejection of horsemeat) is the ready availability of pork, beef, and veal as substitutes for goats, mutton, and lamb. Under the ecological and demographic conditions which prevailed during Colonial times, the colonists found pigs and cattle to be more efficient sources of meat than goats or sheep, and this explains why pigs and cattle have until recently been the main contenders for America's most preferred meat (I will get to chickens later on).

The dense American forests provided an especially favorable habitat for raising pigs. All the colonists had to do was rid the woods of Indians and wolves, and thereafter the acorns, beechnuts, hazelnuts, and the hardy breeds known as "wood pigs" did the rest themselves. In the northern colonies pigs rooted for their living during the spring, summer, and fall, but were put in pens for the winter. From Virginia south, farmers left them on their own throughout the year except for brief farrowing roundups when the sows were enticed into pens with bribes of corn. Before long, many farmers discovered that when pigs were fed on corn for a month or so before slaughter, their flesh firmed and they gained weight rapidly. By 1700 "finishing" hogs on corn had become an established commercial practice.

The wedding of pigs and corn was made in heaven. Pigs can convert corn to meat about five times more efficiently than cattle. Pigs, therefore, could be raised for most of their lives on free "pasture"—the bounty of the forest floor—and then brought to market weight by feeding on surplus corn, far more efficiently than cattle could be raised by similar methods. Although some colonists also let their cattle loose to roam in the woods, ruminants could not match pigs as a source of meat under such conditions. Lacking natural pasture, cattle were better used as a source of milk, butter, cheese, and traction, and much of the beef and veal

produced on the eastern seaboard originated as a by-product of the culling of dairy herds and the slaughter of over-age oxen.

As the farming frontier moved across the Alleghenies into the Midwest, the center of pig, cattle, and corn production moved with it. Soils and climate were ideal for corn. Farmers in the Ohio Valley could easily harvest more than they could sell, given the rudimentary nature of the roads and the great expense of transport by wagon. The best way to market the surplus was to feed it to pigs and cattle and then walk them back across the mountains to the cities on the eastern seaboard. (Actually, the best way to market the corn was to convert it to bourbon and ship it in jugs, but the federal government taxed away the profits from the distilleries and made "moonshine" illegal.) Under the noisy cracking whips of the drovers—the original southern "crackers"—the corn harvest walked itself to market, and the very feature which had made pigs abominable to the ancient Israelites—their appetite for grains—made them lovable to the American farmer. Soon canals and railroads provided better means of getting across the mountains, putting an end to the colorful era of the whip-cracking drovers and greatly expanding the potential for marketing corn-fed pigs and cattle.

With better means of transport, Corn Belt farmers dispensed with their wood pigs and switched over to new breeds which were heavier and better larded. These "lard pigs" could be raised profitably without supplementary foraging. They were fed almost exclusively on corn and then sent for slaughter and packing to Cincinnati in such great numbers that the city became known as "Porkopolis." Corn on the hoof now became pigs in a barrel or "condensed corn." Pork reigned supreme. Before the Civil War, Americans consumed more of it than any other foodstuff except wheat. Never in human history had such a prodigious quantity of grain been harvested with the sole intent of converting it into animal flesh.

In the developing Corn Belt, farmers raised beef cattle as well as pigs. The cattle ate prairie grass and hay until they matured, and then they were fattened up on corn and trailed across the

mountains to the eastern cities. Pigs and cattle from the Ohio Valley were often driven together. The cattle ate stores of corn sold along the trail; the pigs followed behind, feeding on the cattle dung which contained much undigested corn residue.

Which meat was preferred, beef or pork? During late Colonial times and the early nineteenth century as far as salted or barreled meat was concerned, pork was preferred over beef in most sections of the country. My main evidence for this is that despite the fact that far more pork than beef was produced, the price of salted pork was always higher than the price of salted beef. This was true even in the Northeast, which was the region most partial to beef (for reasons I'll explain in a moment). For example, in Philadelphia in 1792, a barrel of pork was worth \$11.17 while a barrel of beef was worth only \$8.00. This disparity continued until the outbreak of the Civil War. Since the ordinary American was brought up on salted meat, and salted pork cost more than salted beef, it would be hard to say that beef was the preferred type of animal flesh. Henry Adams noted that corn was eaten three times a day—as salt pork. One foreign visitor noted that in Europe to ask for food was to ask for bread, but in the United States, to ask for food was to ask for salt pork. And in James Fenimore Cooper's novel *The Chainbearer*, the rustic housewife says: "Give me the children that's raised on good sound pork afore all the game in the country. Yams is good as a relish and so's bread; but pork is the staff of life."

Admittedly, there were important sectional differences. In the South and Midwest, the passion for pork was so great that beef took second place whether it was fresh or preserved. From the eighteenth century on "Southerners gloried in their pork." Virginians regarded their hams as superior in flavor to any in the world, and no Colonial landlord could do business without serving ham and other cuts of pork. In fashionable Williamsburg it was the custom "to have a plate of cold ham upon the table; and there was scarcely a Virginian lady who breakfasts without it." In Colonial North Carolina it was "pork upon pork and pork upon that." Early in the nineteenth century in places like Tennessee, meat

meat pork, they were synonymous. Kentucky was the "land of pork and whiskey," and in Georgia a doctor from Columbus, alarmed by the eating of "fat bacon and pork, fat bacon and pork only, and that continually morning, noon and night, for all classes, ages and conditions," advocated naming the United States of America "The Great Hog-Eating Confederacy" or the "Republic of Porkdom." One traveler visiting Illinois in 1819 wrote that during the summer when pork was in short supply, "people would rather live on corn bread for a month than eat an ounce of mutton, veal, rabbit, goose or duck," while in Michigan in 1842, pork was "more cherished than sweetening or whiskey, something one could never have too much of," and pigs were so exalted that "not the sacred cow of Isis was the subject of more reverential attention."

New Yorkers and New Englanders apparently never developed a similar passion for pork. To judge from New Yorkers, when fresh meat was available, northerners preferred beef to either fresh or preserved pork. In New York City between 1854 and 1860 a yearly average of 132 million pounds of cattle was sold fresh at wholesale as compared with only 53 million pounds of pork. Yet it was fresh pork, not beef, that was used to celebrate the Fourth of July, the nation's most important public holiday. A visitor to New York in the 1840's painted this picture of how the republic of porkdom celebrated its independence:

Broadway being three miles long and booths lining each side of it, in every booth there was a roast pig . . . as the center of attraction. Six miles of roast pig! and that in New York City alone; and roast pig in every other town, hamlet and village in the Union.

One obvious reason for the northerners' relative lack of interest in pork is that on the eve of the Civil War northern-grown pigs had become rarer than sheep. Vermont farms, for example, had an average of 25 sheep but only 1.5 pigs in 1860. On a per capita basis the South and Midwest raised about two pigs per person while the North raised less than one-tenth of a pig per person. Pigs became scarce because the forests had been cut down to

supply Yankee shipbuilding and manufacturing industries, and little corn was grown because croplands had been converted into pasture to feed herds of dairy cattle. Whatever the precise combination of factors preventing northerners from developing a preference for pork, they were not merely acting out their ancestral British preference for beef. The British, after all, settled the South as much as the North, and pork-eating Colonial Virginia was in no way less British than beef-eating Colonial New York.

As a national phenomenon, the American preference for beef originated not overseas in Great Britain, but across the Mississippi in America's Great Plains. Here at last was a habitat ideal for raising cattle, but not for raising pigs. Hungry pigs will eat anything, and on certain grasses such as alfalfa they can even gain weight. But no one was going to turn pigs loose to roam the plains of Texas and Kansas. Grass was to cattle as forest acorns were to pigs. And what had to be done to make the plains safe for cattle was similar to what had been done two centuries earlier to make the forests safe for pigs: Indians and wolves had to be subdued. Buffalo presented a third problem; not being domesticated animals, they could not be walked to market, and they had little long-term commercial value. No one except the Indians preferred them to cattle. The stockmen, farmers, and the U.S. Army soon realized that the best way to get rid of the Indians was to get rid of the buffalo. Contrary to what the schoolbooks say, the extinction of the American bison did not result from careless and wanton overkill. Rather it resulted from a conscious policy connived at by the railroads, the army, and the cattle ranchers as a means of subduing the Indians and keeping them on their reservations. General Philip Sheridan put it to the Texas legislature straight from the hip: "Let the [hunters] kill, skin, and sell until the buffalo is exterminated, as it is the only way to bring about a lasting peace and allow civilization to advance." Hunters like Buffalo Bill shot, skinned, and butchered buffalo on the spot, loading the choicest parts on wagons for delivery to the railroad work camps and to frontier towns, helping to make the plains safe for cattle.

As the buffalo disappeared, herds of cattle took their place,

feasting on the endless sea of grass and multiplying faster than they could be butchered. So cheap was the meat from these animals that the army paid ranchers to supply the Indian reservations with beef, to prevent the Indians from starving. Civilian markets could only be reached by cowboys and cattle over long trails, some extending from Texas to cities as far away as Chicago and New Orleans. But railroads soon put an end to marathon western cattle drives just as they had put an end to long-distance pig drives in the East. Even before the rails crossed the cattle trails at Dodge City, Abilene, and Kansas City, beef entrepreneurs were building stockyards, and filling them with cattle awaiting the arrival of the first train. Off the cattle went to be butchered and packed in Chicago, which after the Civil War had replaced Cincinnati as butcher to the world, or to the cities of the East, where they were slaughtered locally and sold as fresh meat. After two or three days in the crowded, swaying cars, the cattle staggered off bruised and ill, prompting a public outcry for a more humane mode of transport. The beef entrepreneurs saw the problem from a slightly different angle. Anyone who could figure out how to cut western steers into sides shipped fresh from Chicago would not only satisfy the animal protectionists but save the cost of transporting 35 percent to 40 percent of the animals—hides, bones, offal—which could be processed for industrial uses just as profitably in Chicago as in New York or Boston. Laying the meat directly on ice gave it "ice-burn." True refrigerator cars, introduced in 1882 by Gustavus Swift for the run between Chicago and New York, kept the ice in special compartments, chilling the air which circulated around the sides of beef hooked to overhead trolleys. The beef barons and packing-house owners—Armour, Swift, Cudahy, Morris—bought up the railroads, cornered the grain markets, and became as rich as modern-day oil sheiks.

But the sea of grass on which the nineteenth-century beef bonanza was premised proved to be as vulnerable as the Indians and the buffaloes. Overgrazing on the lush parts of the Great Plains and homesteading by farmers dispersed ranching farther

west to arid regions remote from railroads and midwestern stockyards. More feedlot finishing on corn was needed to bring range cattle up to the market weight; beef lost its price advantage over pork, and per capita beef consumption fell from a peak of 67.1 pounds at the turn of the century to 54.9 pounds in 1940. The rangeland beef boom had greatly narrowed the difference between pork and beef consumption, but it did not last long enough to close the gap. In 1900, there was still a 4.8-pound-per-person advantage in favor of pork, and as the twentieth century wore on, the difference increased until on the eve of World War II Americans were back to eating 18.6 pounds more pork per person than beef. It seemed as if the pig's incomparable gut was going to have the last laugh as long as both beef and pork production continued to depend primarily on the conversion of grains into flesh.

But the race was not over; the triumph of beef over pork was only a few years away. By the 1950s Americans were eating equal amounts of beef and pork; by the 1960s they were eating 10 pounds more of beef; and by the 1970s this advantage had increased to 25 pounds. Finally, during the all-time peak meat-eating year of 1977, Americans consumed almost twice as much beef as pork: 97.7 pounds of beef per person to 53.7 pounds of pork, a difference of 44 pounds per person per year.

How did beef finally manage to become king? Through a combination of changes in the beef production and marketing systems which were ideally suited to the emergent life-styles of post-World War II America. As the twentieth century wore on, rangeland played an ever-decreasing role in United States beef production. Time spent on raising "feeders" (calves that will be sent to feedlots) and the time spent on finishing have grown shorter and shorter. With improved breeds, planted pasture, and scientific management, feeders can now be brought to four hundred pounds in four months. Farmers then sell them for shipment to feedlots where they are induced to eat a mixture of protein-rich soybeans, fish meal, calorie-rich corn, sorghum, and vitamins, hormones, and antibiotics all roasted to optimum temperature

and delivered night and day by cement-mixer-type trucks. The cattle eat all day and, under the glare of lights that turns night into day, they eat all night. No matter how much they eat, their trough runneth over, and in four more months they have put on another four hundred pounds and are ready for slaughter.

Just as important as the changes in the way beef was produced, were the changes in the way beef was consumed. First came the growth of suburban homeownership and the use of outdoor living space for cooking and entertaining. To the suburban refugees from the central cities, charcoal broiling represented the fulfillment of pent-up recreational and gustatory aspirations. Aside from its novelty—it was the one mode of preparation that apartment-dwellers had to forego—the backyard charcoal grill offered the convenience of no mess, no pans, and rapid, cooked meals often presided over by husbands who played the role of the great-giver-of-feasts-and-provider-of-meat like the chiefs of old. These backyard redistributors filled their grills with beef. If they submitted pork to smoke and flame, it was as frankfurters, themselves forty or more percent ground beef. Charcoal-broiled steaks were the favorites, made all the more delectable no doubt because they had once been unaffordable. But the charcoal-broiling of prodigious numbers of hamburgers shows that there was more to the beef-grilling mania than mere snob appeal. Technical aspects of backyard cookery, for example, made it difficult to employ pork in ground form. Pork patties cannot be cooked on open grills without falling through, and to prepare them on skillets would defeat the purpose of the flight from kitchen drudgery.

More important perhaps was that pork had to be cooked longer than beef because of the danger of trichinosis. Incredible as it may seem, the U.S. Department of Agriculture does not inspect pork for trichinosis. The only way to detect trichinella in pork is to look for them under the microscope, a time-consuming, costly, and not entirely effective procedure. As a result, about 4 percent of Americans have trichinella worms in their muscles and mistake their trichinosis flare-ups for mild cases of the flu. In lieu of inspection, the U.S.D.A., the surgeon general's office, and the

American Medical Association launched an intensive educational program during the 1930s to get Americans to cook pork until it turns from pink to grey through and through. These warnings ruled out the grilling of pork chops, which upon turning grey through and through also turn tough and dry through and through. Barbecue and pork spareribs present a technically feasible solution because they are well-larded and remain tender and juicy when thoroughly cooked, but they offer much less meat compared with hamburger or steak, are messy to eat, and cannot be put on a bun, placing them at a disadvantage with hamburgers as a convenience food.

The move to suburbia was shortly followed by other social changes that contributed to the beefing of America: the entrance of women into the work force, the formation of families in which both parents work, the rising tide of feminism, and the growing resentment of women against pots, pans, sinks, and stoves. These changes set the stage for an orgy of beef eating outside the home and for the rise of America's most distinctive culinary contribution to world cuisine, the fast-food hamburger. For the new postwar, two-wage-earner families, the fast-food hamburger restaurant provides an opportunity to eat out, to be free of the drudgery of the kitchen—even without homeownership and backyard barbecues—at a cost that is comparable to a medium-budget home-cooked meal, especially if you put a price on the housewife's labor, as wage-earning women are increasingly prone to do.

Americans began to dine out on beef patties a long time ago. Some historians date the hamburger's inception to an obscure restaurant owner who ran out of pork sausages and substituted ground beef at an Ohio county fair in 1892. Others claim that the first hamburgers appeared at the St. Louis Fair of 1904. Less confusion surrounds the origin of the ironically unbecoming name. "Hamburger" undoubtedly originated either with German immigrants who booked passage on the Hamburg-America Line and were served a mixture of chopped beef and onions, or with a chopped beef dish popular in the city of Hamburg itself. Whatever their precise origins, restaurant hamburgers were a novelty

confined to fairs, amusement parks, and beach resorts for most of the first half of this century. A hint of their potential as mass-produced restaurant fare came with the founding of the White Castle hamburger chain in Kansas City in 1921. The chain spread slowly, taking almost a decade to reach New York. But White Castle was not a fast-food restaurant, nor were the times ripe for a fast-food restaurant. It was a cheap central-city eatery catering to local pedestrian traffic. Its hamburgers were made while customers sat at the counter and lingered over coffee, impeding the flow of new orders. The first real fast-food chains were spin-offs of the auto age. They catered to motorized families who preferred to take their meals inside chromium and glass, high-finned living rooms on wheels, rather than around the kitchen table. McDonald's, pioneered in 1955 by Ray Kroc, did not add stools and tables for sit-down customers until 1966. From then on the formula for success included take-out windows for autos, plenty of parking space, separate ordering and eating areas, limited menus, standardized portions, and a clean "family atmosphere." Today franchise holders own and operate most of the branch restaurants. In return for the name and national advertising, they buy much of their food, equipment, and supplies from the parent company and must abide by uniform standards regulating preparation, serving, and maintenance. At a McDonald's the hamburgers themselves arrive from central distributors as frozen patties. Employees fry them, place them between buns along with relish or a slice of cheese, and pack them in styrofoam containers at a rate sufficient to keep a stock on hand so that every customer's order can be filled without delay. Theoretically, at Burger King, hamburgers must be served within ten minutes after they are cooked. In the early 1980s, Americans were eating fifty pounds of ground beef per head, mostly in the form of hamburgers. Every second, the fast-food restaurants alone were selling an order of one or two patties on a bun to two-hundred customers to the tune of 6.7 billion per year worth \$10 billion. Fourteen million Americans a day eat in McDonald's alone.

* * *

In my opinion, the rise of the fast-food restaurant was an event that was at least as socially significant as putting a man on the moon. I have in mind Edward Bellamy's prediction in his influential utopian novel, *Looking Backward*, that one of the great achievements of socialism would be to put an end to the capitalist way of eating. Bellamy's hero falls asleep in 1887 and dreams that he does not awaken until the year 2000. Among the wonders he encounters, none impresses him more than that Americans no longer separately shop for, prepare, or serve dinner. Instead they eat meals cooked at neighborhood kitchens by ordering from menus published in the newspaper and served at elegant clubs. McDonald's, Wendy's, or Burger King scarcely provide the haute cuisine and luxurious salons Bellamy envisioned, but they go farther toward fulfilling the dreams of affordable dining out than anything the world has ever seen before. Nurtured in the bosom of capitalism, McDonald's, Wendy's, and Burger King are nothing if not centralized, efficient, and communal—the food is cheap, nourishing, and instantly available in unlimited quantities; no one waits on anyone else or washes dishes since plates and utensils simply get thrown away; and the patrons themselves carry the food to the table and clean up when they are done. (Of course there remains lots of drudgery, pressure to speed up, and low wages, but who believes in utopia anyway?)

Beef consumption and the fast-food industry took off together, leaving pork on the launching pad. It was not until the 1980s that pork began to appear on fast-food menus and then only as a component in breakfast specials. (McDonald's gave its McRib, a pork sandwich that oozed barbecue sauce, a field trial involving thirty-five hundred restaurants, but quickly dropped it when customers complained it was too messy and didn't taste good.)

The obvious solution to the problem of finding a way for pork to participate in the fast-food restaurant boom was to sell hamburgers that were a mixture of pork and beef. After all, frankfurters are a mixed pork-and-beef product, and have long been one of the mainstays of the pork industry. But no fast-food company has ever tried to market such a product. All hamburgers

sold in the U.S., unlike frankfurters, contain only beef and nothing but beef. There is a simple reason for this, although most Americans don't know it. Legally, there is no such thing as a hamburger which is not an all-beef hamburger. The statutes of the U.S. Department of Agriculture define hamburger as a ground meat patty which contains no meat or fat other than beef or beef fat. If a ground meat patty contains even a smidgin of pork or fat, it can be called a "patty," a "burger," or a "sausage," but it cannot be called a "hamburger." In other words, by government decree, the beef industry holds a kind of patent or trademark on America's most popular convenience food. Here is what the operative code of regulations (Code of Federal Regulations 1946, 319.15 subpart B) states:

Hamburger. "Hamburger" shall consist of chopped fresh and/or frozen beef with or without the addition of beef fat as such and/or seasoning, shall not contain more than 30 percent fat, and shall not contain added water, phosphates, binders, or extenders. Beef cheek meat (trimmed beef cheeks) may be used in the preparation of hamburgers only in the accordance with the conditions prescribed in paragraph (a) of this section.

Ground pork can be eaten; ground beef can be eaten, yet to mix the two together and call it a hamburger is an abomination. It all sounds suspiciously like a rerun of Leviticus. Yet as in the original pork taboo, what appears as mumbo jumbo on one level has a hard core of practical sense on another. A key provision is that while hamburgers must be an all-beef product, they can contain up to 30 percent added beef fat, unlike ground beef, whose fat composition is determined solely by the fat present before grinding. Hamburgers, in other words, can be constructed by mixing beef and beef fat from entirely different animals. I have italicized the operative clause in the code governing ground beef:

Chopped beef, ground beef. "chopped beef" or "ground beef" shall consist of chopped fresh and/or frozen beef with

or without seasoning and *without the addition of beef fat* as such, shall not contain more than 30 percent fat, and shall not contain added water, phosphates, binders, or extenders. [*italics added*]

What all these arcane definitions and mysterious abominations add up to is federal endorsement of the hamburger as a mixture of two ingredients—a type of beef and a type of beef fat—neither of which is marketable as food without the other. The cheapest beef available, now as always, comes from lean, unfinished range-fed steers. But if you grind this meat up and try to make hamburgers out of it, the patties will fall apart in cooking. In other words, to make a hamburger out of range-fed beef, you need fat, the universal food binder. Any fat, animal or vegetable, would do, but since you want to make a hamburger, not a patty or a sausage, it must be fat from a beef animal. The focus now shifts to the feedlots and to cattle that have been spending twenty-four hours a day for four or five months eating corn, soybeans, fish meal, vitamins, hormones, and antibiotics. On their bellies they carry a paunch which must be trimmed off after they are slaughtered. It is the cheapest beef fat available. The union of feedlot fat with range-fed lean beef takes place in the industrial grinders from whence they emerge transubstantiated into the nation's supply of hamburger meat. Let hamburgers be made of pork with beef fat, or beef with pork fat, or prevent hamburgers from being made of beef fat from one animal plus beef from another, and the entire beef industry would collapse overnight. The fast-food companies need feedlot waste fat to make cheap hamburgers, and the feedlots need hamburgers to hold down the cost of feedlot meat. Since the relationship is symbiotic, when you eat a steak you are making it possible for someone else to eat a hamburger; or if you prefer, when you eat a hamburger at McDonald's, you are subsidizing someone else's steak at the Ritz.

Despite inquiries addressed to the Department of Agriculture, I have been unable to learn the history of how the Federal Code's definition of hamburger was negotiated. When placed alongside

the federal government's failure to develop adequate safeguards against trichinosis, the exclusion of pork and pork fat from hamburgers suggest that beef producers had more influence in government circles than pork producers. If true, this would be the natural outcome of a basic difference in the organization of the two industries which has persisted since the late nineteenth century. Beef production has long been dominated by a relatively small number of very large ranches and feedlot companies, while pig production has been carried out by a relatively large number of small-to-medium farm units. As the more concentrated of the two, the beef industry is probably better able to influence the Department of Agriculture's regulations.

A touchy issue remains. The cheapest sources of lean hamburger meat lie overseas in countries like Australia and New Zealand which have low population densities and plenty of range-land. If the fast-food chains had their way, they would buy most of their lean beef from abroad. To prevent this from happening the federal government has set up quotas restricting beef imports. Even with these quotas almost 20 percent of all the ground beef that Americans consume is foreign beef. No one knows exactly how foreign beef gets into the consumer's stomach. Once it clears customs no agency records where it goes or what the processors do with it. Some of the fast-food restaurant chains make a point of claiming that their hamburgers are both 100 percent beef and 100 percent American. Others remain silent, adding one more mystery to America's meat-eating ways.

To sum up, beef achieved its recent ascendancy over pork through the direct and indirect influence of all-beef fast-food hamburgers. By combining unfinished range-fed beef with surplus fat from beef feedlots, fast-food chains were able to overcome the pig's natural superiority as a converter of grains to flesh. The U.S.D.A.'s abomination of pork hamburgers as a taxonomic anomaly therefore bears more than a metaphorical resemblance to the taboos of Leviticus. In mediating the age-old struggle between pigs—consummate eaters of grain—and cattle—consummate eaters of grass—the U.S.D.A. had followed ancient precedents. By

endowing hamburgers with an all-beef identity, it placed an encumbrance of spirit on the choice of flesh and made beef holier than pork.

The story of America's changing tastes in meat does not end with the triumph of beef over pork. Both of these red meats are being threatened by the rise of fast-food, frozen, and fresh forms of chicken. Americans are now eating 54 pounds of chicken meat per year. While adverse medical findings and rising retail prices have led United States consumers to eat 15 pounds less of beef per capita since 1976, consumption of chicken has zoomed by 11.2 pounds. If these trends continue, Americans will be eating more chicken than beef by the end of the century.

The chicken revolution was long overdue. By nature and breeding, chickens are about as efficient as pigs in converting grain to meat and five times more efficient than cattle. Some of the newest breeds are designed to exceed the efficiency of pigs and convert 1.92 pounds of high-protein feed to one pound of meat, mostly concentrated on the breast. Various technical problems—the susceptibility of chicken flocks to communicable disease, the chickens' tendency to peck each other to death in establishing "pecking orders" within crowded coops, and the difficulty of determining the sex of chicks for flock management—prevented their mass production potential from being realized. These obstacles have been overcome by dosing them with antibiotics, debeaking them with a cauterizing iron, and breeding male chicks to have longer wings than female chicks. Chickens are now "manufactured" in batches of thirty thousand per chicken house, each bird getting less than a square foot of cage to live in. Temperature regulation, ventilation, and waste removal are all automatic. Lights burn twenty-two hours a day to keep them awake so that they can eat nonstop. In forty-seven days after hatching, they weigh over four pounds and are ready to be marketed, half as many days as it took in 1950. In a major brand-name factory, the birds are killed, plucked, eviscerated, cooled, and boxed by automated machines at the rate of 1.5 birds per second. As a result of these innovations, chicken prices have barely risen over the past decade, and chicken

products now constitute the fastest-growing component in the entire fast-food industry. "Where's the beef?" may soon apply to its originator. Wendy's abruptly withdrew the slogan that was on everyone's lips during the 1984 presidential campaign because it was interfering with the chain's plan for a newly introduced chicken sandwich.

When food experts tell us that food habits are the parts of culture that change most slowly—so slowly that America's preference for beef harks back to Vedic times—they have obviously not paid much attention to the history of meat consumption in the United States. (Incidentally, chickens were domesticated in the jungles of Southeast Asia and were never part of the basic Indo-European, pastoral-farming complex. They probably first reached Europe only in Greek and Roman times.) The dead hand of tradition has not noticeably slowed the vast gustatory tides that have swept over the United States from Colonial times to the present. In America as never before in history, good to eat is what is good to sell. Yet no less emphatically than in other cases I have been examining, the ups and downs of American tastes in meat are not mere random fashions that aggressive agribusinesses have been able to exploit at will. No less than in Hindu India, the interplay between nature and culture, no matter how ingenious the technology that mediates them, places definite limits on profitability, whether measured in terms of energy, proteins, resources, or dollars and cents. And we must never forget that there are many chickens that have yet to come home to roost. Although I have been emphasizing short-run improvements in the efficiency of converting plant foods to meat, one must not lose sight of the fact that fast-food meats are an energetically inefficient way to feed people. The engineering triumph embodied in the latest superchicken is predicated entirely on the availability of chicken feed which contains not only corn, soybeans, sorghum, and other proteinaceous plant foods, but animal products as well—principally fish meal. This concoction belies its name. It is nutritionally, and energetically too valuable to be called "chicken feed." Nutritionally speaking, all that high protein

plant and fish food means that the average American chicken eats better than three fifths of the people in the world. And energetically speaking, each calorie of chicken breast costs at least six calories of fossil fuel. This means that the sumptuous diet of America's chickens (and pigs and cattle) rests entirely on the continuing drawdown of still relatively cheap nonrenewable sources of fossil energy. As I said at the outset, the orgy of carnivory in America may yet prove to be as transitory as it was in Vedic India. In the meantime, I hope that I have demonstrated that the principal features of America's meat preference hierarchy—from horsemeat to beef and chicken—have rapidly adapted to novel combinations of nutritional, ecological, economic, and political conditions rather than remaining fixed and unresponsive as an arbitrary heritage passed on from the remote past.

I am not disputing the fact that some foodways are extremely tenacious. In addition to preferences and avoidances which last only decades, there are others which last for millennia. But as the next riddle shows, the dead hand of tradition is no more convincing as an explanation for food-ways which persist for thousands of years than it is for those which persist for only decades.