meat, fish, fowl, and/or milk therefore represents a thoroughly rational preference that arises from the interaction of human biology and the nutritive composition of alternative foods. It will never be in the best interest of any country to eat less animal food (as distinct from less animal fat and cholesterol) as a health measure. To return to Poland, no one can blame a nation that does not rush to embrace such a fate. Perhaps someone should tell the Poles that they would be better off eating leaner meats, more fish, more poultry, fewer eggs, more skim milk, and less butter and lard. But woe to the would-be savior of socialism who decides to appease Poland's meat hunger by telling people to go home and eat more bread and beans.

CHAPTER THREE

THE RIDDLE OF THE SACRED COW

SINCE ANIMAL FLESH is so nutritious one would expect every society to stock its larder with the meat of every available animal species. Yet exactly the opposite seems to prevail. All over the world people in dire need of the very proteins, calories, vitamins, and minerals that meat provides in such concentrated form refuse to consume certain kinds of flesh. If meat is so nutritious, why are so many animals bad to eat? Take India, for example, and the most famous of all irrational foodways, the ban on the slaughter of cattle and the consumption of beef.

There is a section of India's federal constitution called the Directive Principles of State Policy which sets forth guidelines for laws to be enacted by state legislatures. Article 48 calls for prohibiting "the slaughter of cows and calves and other milk and draft animals." All but two Indian states—Kerala and West Bengal—have passed some form of "cow protection" law with "cow" meaning both male and female members of *Bos indicus*, India's native species of cattle. But Hindu holy men and numerous cow-protection societies continue to agitate for a total ban on cattle slaughter. In 1966, rioting by 125,000 nude cow-protectionists threatened to shut down the Indian parliament in New Delhi, and in 1978, a Hindu leader, Acharaya Bhave, provoked a national

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crisis by threatening to fast until Kerala and West Bengal enacted antislaughter legislation.

India has the largest number of cattle in the world—about 180 million *Bos indicus* (plus 50 million buffalo), a situation which might reasonably be attributed to the fact that no one seems to want to kill or eat them. India also has the distinction of possessing the largest number of sick, dry, barren, old, and decrepit cattle in the world. According to some estimates one-quarter to one-half of the total are "useless" creatures that roam over the country's fields and highways and city streets—a situation which, if true, one might again reasonably attribute to the ban on slaughter and the aversion to beef. India also has 700 million people. Since no one denies that much of this huge human population is sorely in need of more proteins and calories, the refusal to kill and eat cattle seems to be "plainly contrary to economic interest." Has not the very phrase *sacred cow* passed into common usage as an idiom denoting stubborn adherence to customs and practices that have no rational justification?

On one level of explanation, cow protection, beef avoidance, and the large number of useless cattle can all be safely attributed to religious zeal. Hinduism is the dominant religion of India, and cattle worship and cattle protection lie at the very heart of Hinduism. Few Westerners realize, for example, that one of the reasons for the saintly reputation and mass appeal of Mohandas Gandhi is that he was an ardent believer in the Hindu doctrine of cow protection. In Gandhi's words: "the central fact of Hinduism is cow protection. . . . Cow protection is the gift of Hinduism to the world . . . Hinduism will live as long as there are Hindus to protect the cow."

Hindus venerate their cows (and bulls) as deities, keep them around the house, give them names, talk to them, deck them with flowers and tassels, let them have the right of way on busy thoroughfares, and try to place them in animal shelters when they become sick or old and can no longer be cared for at home. Shiva, the avenger god, rides the heavens on Nandi, the bull, whose likeness appears at the entrance to every temple dedicated

to Shiva. Krishna, god of mercy and childhood, perhaps the most popular deity in India today, describes himself in Hindu sacred literature as a cowherd, protector of cows, who are his wealth. Hindus believe that everything that comes out of a cow (or a bull) is sacred. The priests make a holy "nectar" composed of milk, curds, butter, urine, and dung which they sprinkle or daub on statues and worshippers. They light the temples with lamps that burn ghee, clarified cow's butter. And they bathe temple statues daily with fresh cow's milk. (In contrast, buffalo milk, butter, curds, urine, and dung have no ritual value.)

At festivals commemorating Krishna's role as protector of cattle, priests mold the god's likeness out of cattle dung, pour milk over the navel, and crawl around it on the temple floor. When in due course the image must be removed, Krishna does not tolerate human hands to break it up. A calf must trample on it first, for Krishna does not mind his image being walked on by his favorite creature. At other festivals, people kneel in the dust raised by passing cattle and daub their foreheads with the fresh droppings. Housewives use dried cattle dung and cattle dung ashes to clean and ritually purify their floors and hearths. Village doctors even collect the dust in the hoofprints of cattle and use it for medicinal purposes. Just to look at a cow gives many Hindus a sense of pleasure. The priests say that to take care of a cow is in itself a form of worship, and that no household should deny itself the spiritual enjoyment which comes from raising one.

Cow protection and cow worship also symbolize the protection and adoration of human motherhood. I have a collection of colorful Indian pinup calendars depicting jewel-bedecked cows with swollen udders and the faces of beautiful human madonnas. Hindu cow worshippers say: "The cow is our mother. She gives us milk and butter. Her male calves till the land and give us food." To critics who oppose the custom of feeding cows that are too old to have calves and give milk, Hindus reply: "Will you then send your mother to a slaughter house when she gets old?"

The sacredness of the cow is linked in Hindu theology to the doctrine of transmigration. Hinduism portrays all creatures as

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souls which have risen or fallen from various stages of progress toward Nirvana. It takes eighty-six transmigrations to rise from a devil to a cow. One more transmigration and the soul acquires human form. But the soul can always slip back. The soul of a person who kills a cow can expect to return to the lowest rung and start all over again. Gods live inside of cows. Hindu theologians put the number of gods and goddesses in a cow's body at 330 million. "Serving and praying to the cow will lead to Nirvana for 21 generations to come." To assist a departed loved one's soul in its journey to salvation, relatives donate money for feeding herds of cows kept by Hindu temples. They believe that the dead must cross a fiery stream and that these donations buy the departed the right to hold onto a cow's tail while swimming across. For the same reason, orthodox Hindus request that they be given a cow's tail to cling to during their dying moments.

The cow is a political as well as a religious symbol. For centuries, Hindus and Moslems have been whipping up communal strife with stereotypes of Moslems as cow-killers and Hindus as tyrants bent on forcing everyone to accept their peculiar foodways. The fact that the raj from England was an even more prodigal cow-killer and beef eater than the Moslems served as the focus for waves of civil disobedience which led to India's independence after World War II. In the earliest days of the new state the dominant Congress party preempted the picture of a cow and a calf as its national logo, immediately giving its candidates an advantage among illiterate voters who vote by making an *X* over the picture of their choice. The opposition parties soon struck back by spreading the rumor that a cross placed over the Congress party's logo was a vote for slaughtering one more cow and calf.

As anyone can see, all this is a matter of religion. Were Americans to believe that Nandi is Shiva's vehicle, that Krishna is a cowherd, that there are eighty-six reincarnations from devil to cow, and that each cow contains 330 million gods and goddesses, they wouldn't go around asking, "Where's the beef?" But the rejection of beef because of Hindu beliefs is the puzzle, not the

answer. Why is cow protection "the central fact of Hinduism"? Most major religions regard cattle as good to eat. Why is Hinduism different?

Both politics and religion obviously play a role in reinforcing and perpetuating the beef and slaughter taboos, but neither politics nor religion explains why cattle slaughter and beef eating have achieved symbolic prominence. Why the cow and not the pig, horse, or camel? I do not doubt the symbolic power of the sacred cow. What I doubt is that the investment of symbolic power in one particular kind of animal and one particular kind of meat results from an arbitrary and capricious mental choice rather than from a definite set of practical constraints. Religion has affected Indian's foodways, but India's foodways have affected India's religion even more. My justification for saying this lies in the history of Hinduism.

The central fact of that history is that cow protection was not always the central fact of Hinduism. The earliest sacred texts of Hinduism—the Rig Veda—celebrate the gods and customs of the Vedas, a cattle and farming people who dominated northern India from 1800 B.C. to 800 B.C. Vedic society and religion already recognized the four main castes of modern Hinduism including the priestly Brahmans, the ruling warrior chiefs or Kshatriyas, the merchants or Vaisyas, and the Sudras or menials. The Vedas neither spurned beef nor protected the cow. In fact in Vedic times the Brahman caste's religious duties centered not on protecting cows but on slaughtering them. As I mentioned in the chapter before this, the Vedas were one of the early warrior-pastoral peoples of Europe and southwestern Asia among whom ritual slaughter of animals and sumptuous feasting on meat went together. On ceremonial occasions, Vedic warriors and priests, like the Celts and Israelites, generously distributed meat to their followers as a material reward for loyalty and as a symbol of wealth and power. Whole villages and districts participated in these meat-eating feasts.

While the Vedas permitted animal slaughter only as a religious rite carried out under the supervision of Brahman priests, this

restriction did not limit the amount of meat available for human consumption. The gods conveniently ate the spiritual portion of the animal, while the worshippers dined heartily on the corporeal residue. And since no culture is ever at a loss for ceremonies, confining the consumption of meat to ceremonial occasions probably did little to inhibit the rate of animal slaughter. Battlefield victories, marriages, funerals, and visits from allies all called for animal sacrifice and lavish meat eating. The compulsive attention paid by the Brahman priests to the size, shape, and color of cattle suitable for particular ritual occasions bears a close resemblance to the detailed instructions found in the Book of Leviticus pertaining to similar ancient Israelite sacrificial feasting. The animals specified by the sacred Hindu texts included: a drooping horned bull with a white blaze on the forehead; a polled ox; a white ox; a five-year-old humpless dwarf bull; a thick-legged cow; a barren cow; a cow that has recently miscarried; a three-year-old humpless dwarf heifer; a black cow; a two-colored cow; and a red cow. All this suggests that the Vedas sacrificed cattle more often than other animals and that beef was the commonest flesh consumed in northern India during most of the first millennium B.C.

The period of lavish cattle slaughter and general beef eating came to an end when the Vedic chieftains could no longer keep large herds of cattle as a reserve of wealth. Population grew, forests shrank, grazing lands were put to the plow, and the old semipastoralist way of life gave way to intensive farming and dairying. Simple energy relationships underwrote the transition: more people can be fed by limiting meat eating and by concentrating on dairying, growing wheat, millet, lentils, peas, and other plant foods. As I mentioned in the last chapter, if grains are consumed by animals and then the animals are consumed by people, nine out of every ten calories and four out of five grams of protein are lost for human consumption. Dairying can cut these losses by a significant amount. Modern dairy cattle convert feed into calories five times more efficiently than modern beef cattle convert feed into edible meat calories; and they convert feed into edible protein six times more efficiently than modern beef cattle.

These figures include the calories and proteins in the edible portion of the cow's carcass at the end of its life, but as I'll show in a moment, the beef-eating taboo probably never prevented the cow from making a terminal contribution in the form of meat. As long as population density remained low, cattle could be grazed on uncultivated land and per capita beef production could be maintained at a high level. With denser human populations, cattle came to compete with humans for food, and their meat soon became too costly to be shared with the traditional openhanded generosity of the Vedic chieftains at public beef-feasting sacrifices.

Gradually the ratio of cattle to humans declined and with it the consumption of beef, especially among the lower castes. But there was a Catch-22 in the process: cattle could not simply be eliminated to make way for more people. Farmers needed oxen to pull plows, which were needed in turn to penetrate the hard-packed soils found throughout much of northern India. In fact, it was the use of ox-drawn plows to break the plains bordering the Ganges River that started the whole cycle of population increase and the shift away from meat eating in general and of beef eating in particular. Naturally, all ranks of society did not give up their beef-eating habits at the same time. The privileged Brahmans and Kshatriyas continued to slaughter cattle and gorge themselves on beef long after it was impossible to invite ordinary people to share in their good fortune.

By about 600 B.C. peasant living standards were in decline, and wars, droughts, and famines inflicted great suffering. The old Vedic gods seemed to be failing, and new religious leaders found ordinary people increasingly hostile to animal sacrifices both as a symbol and as a material manifestation of the inequalities of the caste system.

Out of this stressful social and economic situation arose Buddhism, the world's first nonkilling religion. Gautama, later known as the Buddha, lived between 563 B.C. and 483 B.C. His principal teachings reflect the suffering of ordinary people and were directly opposed to the Hindu beliefs and practices of his times.

As set forth in the Buddhist Eightfold Way—the equivalent of Judaism's Ten Commandments—Buddha condemned the taking of life in animal or human form, banned animal sacrifice, condemned butchers, and substituted meditation, vows of poverty, and good deeds for ritual and prayers as the means of gaining salvation. Buddha did not single out beef eating as a special evil, but since cattle were the principal objects of ritual slaughter, his condemnation of animal sacrifice implies that beef eaters were among the worst offenders.

I feel confident that the rise of Buddhism was related to mass suffering and environmental depletions because several similar nonkilling religions equally opposed to animal sacrifice arose in India at the same time. Jainism, the best known of these lesser antikilling sects, has survived into the present and has numerous temples serving about two million devotees in India. Jains take heroic measures to avoid killing or eating any form of animal life; their priests cannot walk down a path or a street without having broom-wielding assistants go ahead to sweep away small insects or spiders that might accidentlly get stepped on. They also wear gauze masks over their nose and mouth to prevent the accidental inhalation and destruction of mosquitos or flies. Jains to this day maintain numerous animal shelters where they take care of stray or injured cats, dogs, rats, birds, and cattle. The most remarkable Jain shelters are rooms set aside for insects. In Ahmadabad, the capital of Gujarat, devout Jains from all over the city bring to such a room carefully preserved dirt and sweepings containing insects in need of protection. Attendants place the dirt and sweepings together with a small amount of grain inside, and when the room is full, they seal it tightly. After ten or fifteen years the inhabitants are presumed to have died a natural death, and the attendants open the room, shovel out its contents, and sell the remains for fertilizer.

The Buddhist ban on the consumption of beef implicit in the opposition to cattle sacrifice must have resonated with the aspirations of the poorer farmers. At a time when ordinary people were starving and in need of oxen to plow their fields, the Brahmans went on killing cattle and getting fat from eating them. I cannot say precisely how the Brahmans and Kshatriyas continued to obtain cattle for their gluttonous feasts, but taxation, confiscation, or other coercive measures would have been necessary once the peasants were unable or unwilling to donate surplus animals to the temples. Traces of a "let-them-eat-cake" type of arrogance show up in some early Brahmanic texts. Against the argument that beef should not be eaten because the gods had given cattle cosmic power, a Brahman sage replied: "That may very well be, but I shall eat of it nevertheless if the flesh be tender." Recognizing that the nonkilling religions had great mass appeal, the rulers of India's earliest Ganges River empires let them flourish and even encouraged their spread. Buddhism was especially favored when in 257 B.C. Asoka, grandson of the founder of the Maurya Dynasty and the first emperor of all India, became a follower of Gautama. Although Asoka did not prevent cattle from being slaughtered and eaten, he did attempt to stamp out the practice of animal sacrifice. (As I mentioned, Buddhists can eat meat as long as they are not responsible for killing the animal from which it comes.)

Over the course of nine centuries, Buddhism and Hinduism struggled for possession of the stomachs and minds of the Indian people. Hinduism eventually won, but not before the Brahmans overcame the Rig Veda's obsession with animal sacrifice, adopted the principle of nonkilling—known today as *ahimsa*—and set themselves up as the protectors rather than the destroyers of cattle. The gods, they argued, did not eat meat, so the sacrifices described in the Rig Veda were merely metaphorical and symbolic acts. Milk, not meat, now became the principal ritual food of Hinduism as well as the main source of animal protein for members of the Brahman caste. The Brahmans were able to gain an advantage over the Buddhists because they could give free rein to the popular tendency to worship cattle and to identify Krishna and other gods with domestic animals. Buddhists never attempted a similar apotheosis of cattle nor worship of Krishna or comparable deities, being directed by Gautama's example to

seek salvation through meditation rather than by prayers. Buddhism's popular base began to erode, and by the end of the eighth century A.D. Gautama's religion disappeared entirely from the land of its birth.

The account I have just given of the struggle between Hinduism and Brahmanism was first pieced together by Rajandra Mitra, a great Sanskrit scholar of the late nineteenth century. This is what he wrote in 1872:

> When the Brahmans had to contend against Buddhism which emphatically and so successfully denounced all sacrifices, they found the doctrine of respect for animal life too strong and too popular to be overcome, and therefore gradually and inperceptibly adopted it in such a manner as to make it appear as part of their [teachings].

What I would add to Mitra's brilliant insight is that by becoming cow protectors and by abstaining from beef, the Brahmans were able to co-opt a more productive system of agriculture as well as a more popular religious doctrine. It is no accident that India is the home of hardy humpbacked zebu breeds which are world-renowned for their ability to render service as plow animals amid heat, drought, and other adverse conditions while consuming very small amounts of feed and fodder. Contrary to popular stereotypes, the presence of large numbers of these animals in the Indian countryside under the protection of the antislaughter and beef-eating taboos is indicative neither of waste nor folly. They seldom compete with humans for resources since they seldom graze on planted pasture nor on any lands which can be used for growing human food crops. The density of the human population long ago became too great for any such luxuries. Instead these animals are kept in a semistarved condition until they are needed for work. In between stints of plowing they eat stalks, chaff, leaves, and household garbage. At plowing time they get extra rations of oilcakes pressed from humanly inedible residues of cottonseed, soybeans, and coconut. They are resistant to disease, have great stamina, and literally work until they drop dead, which

usually does not happen until they have rendered a dozen or more years of grueling service. Farmers value their oxen not only for traction power but also for the fertilizer and fuel they produce. Cattle manure is still India's main source of fertilizer. In addition, lack of wood, coal, and fuel oils obliges millions of Indian housewives to depend upon dried cattle dung for cooking. When employed for this purpose, the dung produces a clean, steady, odorless flame that requires little attention and is well suited for simmering vegetarian dishes.

But nowadays isn't it terribly inefficient to use oxen instead of tractors to pull plows? Not at all. Virtually every study that has ever been carried out to determine the relative efficiency of tractors versus oxen shows that the animals are more cost-efficient per unit of crop produced under the conditions which prevail throughout most of India. While a thirty-five-horsepower tractor can plow a field almost ten times faster than a pair of oxen, the initial investment in the tractor is over twenty times greater than the investment in the animals. Unless the tractor is used for more than nine hundred hours per year, the hourly cost of operating the tractor exceeds the hourly cost of a pair of oxen. This means that tractors are more efficient than oxen only on very large farms. The majority of Indian farms are very small, and the use of tractors can only be rationalized if elaborate provisions are made to lease or rent the machines. But similar provisions also easily lower the cost of using animal traction. Despite a significant increase in the number of tractors in India since 1968, there has been no reduction in the number of draft animals, even in the regions where tractors have become most common. The explanation for that is that repair services and spare parts remain too precarious to risk operations without standby animal power. Some evidence also exists which indicates that after a period of initial enthusiasm, many tractor owners are now trading in their machines and replacing them with new breeds of fast oxen.

In order to have oxen, one must have cows, and in the traditional regimen, the prime function of cows is to give birth to cheap, hardy oxen. Milk and dung are valuable by-products which

help pay for the cow's upkeep. Even more than oxen, cows play the role of village scavengers, subsisting on straw, chaff, garbage, leaves, patches of roadside grass and other substances that humans cannot digest.

Does the beef-eating, cattle-slaughter ban significantly and arbitrarily reduce the amount of animal foods available for human consumption? I doubt it. As part of a preindustrial agricultural system burdened with supporting a dense population in reasonably good health, the Hindu ban on cattle slaughter and beef consumption remains an asset rather than a liability. One of the principal problems confronting this system has always been the tendency to slaughter animals which are energetically and nutritionally more useful alive than dead in order to satisfy a craving for meat. The religious proscription against beef eating contributes to the solution of this problem, not only by preventing ritual slaughter itself, but by counteracting the temptation to eat temporarily barren or emaciated animals during periods of stress caused by prolonged dry seasons and droughts. Without preserving the life of their temporarily useless cows or oxen, farmers could not resume the agricultural cycle when conditions improved. To the extent that the beef taboo strengthens their resolve to preserve their breeding stock as long as possible, it enhances rather than diminishes the long-term effectiveness of the agricultural system and reduces caste-based inequalities in the consumption of essential nutrients.

Although sacrificial cults based on slaughter and beef consumption are a thing of the past, modern Indian and foreign entrepreneurs itch to get their hands on India's "surplus" cattle for slaughter and sale overseas, especially to the oil-rich, meat-hungry nations of the Middle East. To the extent that the Hindu aversion to beef helps to prevent the development of large-scale domestic or international markets for Indian beef, it continues to protect the typical smallholder from bankruptcy and landlessness. Unfettered development of large-scale beef markets would inevitably push up the price of Indian cattle to the levels of international beef prices; cattle feeds and supplement would be de-

voted to raising beef; and small farmers would find it increasingly difficult to raise, rent, or buy animals for plowing. A few traders and wealthy farmers would reap the benefits while the rest of the farming population would sink to a lower level of production and consumption, as the acreage diverted to feeding animals rather than people increased.

Another problem with the scheme for slaughtering India's "surplus" and "useless" cattle is that the animals which Western agronomists regard as surplus or useless are not surplus or useless in the eyes of their owners. Despite the ban on slaughter, Hindu farmers systematically rid themselves of most of the animals for which they have no use. This is shown by the finely tuned adjustments they make in the ratio of oxen to cows according to their needs and circumstances. Depending on the average size of a farm, the pattern of rainfall, the crops grown, and the proximity to cities where milk can be marketed, different regions have remarkably different cattle sex ratios. In northern India, for example, where wheat is the major crop and farm holdings are large, farmers concentrate on raising cattle for plowing, and there are almost twice as many oxen as cows. But in parts of southern India where rice is the principal crop, and the typical half-acre "postage-stamp" farms are too small to support plow animals, farmers raise three times as many cows as oxen. Since the total numbers of cattle in the two regions are widely discrepant, there is no chance that this inversion of cattle sex ratios has been brought about by breeding oxen to the north and cows to the south. Interregional trade does not exist on the requisite scale. Research conducted by the Center for Development Studies in Trivandrum, Kerala, shows rather that male and female calves have drastically different mortality rates in differing regions depending on whether the local farmers want to end up with more cows or more oxen. When I asked farmers to explain this discrepancy, they insisted that no one in their village would deliberately shorten the life of any of their beloved calves. But they did admit that they took better care of the locally more useful sex, allowing whichever they needed most to suckle longer at

the mother's teats. Now starvation may seem an inefficient form of getting rid of unwanted animals, but the calf's slow demise has a definite payoff for its owner. Since most of India's cattle are not milk breeds, Indian cows will not "let down" and give milk unless they are stimulated by the presence of their calves. What the farmer is doing in keeping an unwanted calf alive in a semistarved condition therefore is minimizing the cost and maximizing yields of its mother's milk.

In modern India, Hindu farmers have recourse to an additional method for ridding themselves of unwanted animals. They sell them to Moslem traders, who remove the animals from the village and resell them at local fairs. Many of these animals eventually end up being butchered legally or otherwise by other Moslems whose religion does not inhibit them from such activities and who as a result enjoy a lucrative monopoly over the slaughter business. Moslems, Christians, and lower-caste Hindus purchase a considerable amount of cattle flesh either knowingly as beef or somewhat unwittingly as "mutton," a catch-all label which helps keep the peace between Moslems and their Hindu customers and neighbors. But even before the arrival of the Moslems in the eighth century A.D., similar beef-eating segments of the population must have existed. A royal edict issued by King Chandragupta II in A.D. 465 equated the crime of killing a cow with the crime of killing a Brahman priest. This implies that there were people who rejected both the ban on beef and the reverence for Brahmans. Perhaps it was the followers of the Tantric branches of Buddhism and Hinduism who were the targets of Chandragupta's edict. Tantrism presents a persistent countercurrent to the ascetic, contemplative, and monastic mainstream of Indian religion and philosophy. Tantrics seek oneness with the universe through eating meat, drinking alcohol, taking drugs, dancing, and ritual sexual intercourse.

To the beef-eating Tantrics, Moslems, Christians, and other non-Hindus, we must add the members of various untouchable castes who consume beef in the form of carrion. Millions of Indian cattle die each year from a combination of neglect and natural

causes. The corpses become the property of carrion eaters, who are called in by higher castes and who skin and then consume the edible parts. Boiling the meat eliminates most of the danger. Of course, the amount of beef they get per animal is only a fraction of what they could obtain from a fat, healthy steer. But untouchables cannot afford to eat meat from fat, healthy steers, and even small amounts of meat help to improve their meager diet.

Just how many "useless" and "surplus" animals does all this culling, beef eating, and carrion eating leave us with? One economist calculated that India's 72.5 million draft oxen would require for maintenance only 24 million productive well-fed breeding cows rather than the actual 54 million cows which now exist. This led him to conclude that largely as a result of the slaughter and beef-eating taboo, 30 million cows are surplus and could be killed off or shipped overseas to everyone's benefit. The flaw in this argument is that most of the less productive cows—cows that are neither breeding regularly nor giving much milk—are owned by the poorest farmers. While the calving rate and milk yield of these cows are ridiculously low, they nonetheless represent a cost-efficient and vital asset for the economically weakest segment of the peasant population. Why is it the poorest peasants who keep the bulk of the most unproductive cows? Because owning little land, it is they who are forced to feed their animals on marginal rations derived from village waste, roadside grass, water hyacinths, and the leaves of trees. It is the fact that cattle scavenge for a good deal of their subsistence that creates the impression that useless stray cattle are wandering all over the landscape, blocking traffic, and begging and stealing from food stands in the cities. But almost all of these strays have owners who know and encourage what their animals are doing. Although "strays" may sometimes invade cultivated fields and destroy someone else's crops, the loss—if it can be called that from an impoverished animal owner's viewpoint—must be weighed against the advantages of the more socially responsible forms of scavenging.

Despite the semistarved condition of most of the females, the hardiness of their zebu ancestry shows through, and many "bar-

ren" cows sooner or later calve and give milk. Even if a cow only produces a calf every three or four years and gives only two or three liters of milk a day, the combined value of the calves and milk, plus dung, yields a profit boosting the household income of the poor by a third or more. The birth of a male calf which they may rear as a down payment on a replacement for their oxen or as a means of acquiring oxen for the first time adds to the cow's contribution. Of course, from the point of view of modern animal husbandry, it would be far more efficient to feed a smaller number of cows properly and to get rid of the underfed specimens. But there is another point of view: getting rid of surplus and useless cows is tantamount to getting rid of surplus and useless peasants. To be able to own even one cow, however emaciated, gives poor farmers an extra toehold on their land, possibly saving them from the clutches of the moneylenders and from being forced to join the exodus of landless families who have no place to go but the streets of Calcutta.

But what about those famous old-age homes for cattle? Don't they prove that vast numbers of "surplus" and "useless" cattle are kept alive in India for no reason other than religious sentiment? About three thousand Indian facilities for housing animals represent themselves as being concerned with animal protection. They house a total of 580,000 cattle. Some of the shelters are indeed primarily religious and charitable institutions which maintain their cattle at a net loss. Others are essentially for-profit dairy businesses which maintain a small number of useless cattle as tokens of piety and as "pets" (more about "pets" in a later chapter). Jains rather than Hindus run most of the shelters which contain genuinely useless animals and which depend on charitable donations of feed and money to balance their books. Piety is scarcely the only motivation for making contributions. Jain animal shelters keep strays off the streets and out of people's farms and gardens. In this regard they resemble animal shelters in the West: the ASPCA, for example, must also balance its books by means of charitable donations. And in both instances, unless someone claims a shelter animal, its life expectancy is not very great. Indian

shelters substitute starvation for lethal injections, but they share with the ASPCA the necessity to terminate guests in order to discharge their annual animal-catching duties.

Deryck Lodrick, the principal authority on these matters, estimates that about a third, or 174,000, of the cattle in the Jain and Hindu shelters combined are useless. I suspect that most of them belong to the Jains, but let us accept the combined total. It amounts to less than 0.1 percent of the 180 million bovines in India. Even if we also accept the unlikely proposition that the people who run the cattle shelters make an equal effort to feed the useless and useful animals in their care, the costs of these charitable enterprises does not loom large in national perspective. Animal shelters are part of a whole system of values, ideas, and rituals whose historic payoff—the prevention of wasteful beef eating by elites—rationally justifies the expenditures incurred by a handful of pious cow-shelter enthusiasts. No system is perfect. Even corporate America hasn't quite figured out how to eliminate "wasteful" rituals such as support for public broadcasting programs and Little League baseball teams.

As I see it then (and many of my colleagues in India now agree), the "irrationality" of the Hindu taboo on the slaughter of cattle and the consumption of beef is a figment of the imagination of Westerners who are accustomed to raising cattle for beef or for milk and who can use tractors for plowing. On balance, the aversion to beef makes it possible for India's huge population to consume more rather than less animal food.

Let me pause here to make sure that what I have just said does not get distorted into something with which I strongly disagree, namely that the traditional system is flawless, cannot be improved, and is as efficient today as it was in the past. There is a vicious circle operating which makes any such conclusions quite absurd. Human population growth, the reduction in the size of holdings, overgrazing, erosion, and desertification have contributed to a rise in the cost of cattle feeds and fodders relative to other production costs. This in turn has increased the demand for smaller and cheaper cattle breeds, which in turn has led to

a gradual deterioration in the quality of traction animals available to the poorer households. In the words of the geographer, A. K. Chakravarti:

> Because of the increasing pressure of human population on land and less and nutritionally unbalanced feed available for cattle, the quality of cattle has deteriorated with declining milk yield and draft efficiency . . . the effort has been to compensate the declining efficiency by increasing the number of cattle. . . . the increase in the number of cattle in turn has resulted in further shortages of feed and fodder.

There is now (and always has been) much room for improving existing breeds both from the point of view of traction power and milk production. As part of a comprehensive scheme to improve traction power and milk yields, it might be advantageous to slaughter cattle more freely than is possible today. (It would help to be able to get rid of stray animals and nondescript temple herds.) But by no stretch of the imagination can the declining efficiency of the traditional system be blamed on the aversion to beef. Blame population growth, colonialism, the caste systems, or land tenure, but don't blame the use of cattle for milk rather than meat! Bad as India's food situation may have become, there is no evidence that the removal of the ban on the slaughter of cattle by itself would ever have led to a broadly based improvement in the Indian diet.

During the past two decades India has actually made considerable progress in raising per capita cereal and dairy production. Thus far the diversions of grains to the production of animal foods is slight compared with what is happening in beef-eating nations like Mexico and Brazil, where beef cattle are now eating better than from one-third to one-half of the people at the bottom of the social pyramid. While the ban on cattle slaughter may eventually place a ceiling on the further improvement of traction and dairy breeds, the most pressing problem remains how to provide feed and fodder for these animals without diminishing the supply of food grains for people. The advantages involved in preventing

the diversion of grain to meat production therefore probably outweigh the losses which the ban on slaughter imposes on programs aimed at raising milk and traction production through improved breeding.

To return to Mohandas Gandhi. For all of his sentimental and mystical devotion to cattle, Gandhi was well aware of the practical significance of cow love to his followers. Like them, he never lost sight of the bottom line: "Why the cow was selected for apotheosis is obvious to me," he said. "The cow was in India the best companion. She was the giver of plenty. Not only did she give milk but she made agriculture possible." This perception takes us a long way toward answering the principal remaining question: why did cattle and not some other animal become the quintessential symbol of Hinduism? The answer is that no other animal (or entity) could perform so many vital services for human beings. No other creature had the versatility, stamina, and efficiency of India's zebu cattle. To enter the contest for animal mother of India, a domestic species had to be at least big and strong enough to pull the plow. This immediately eliminates goats, sheep, and pigs, not to mention dogs and cats. We are left with camels, donkeys, horses, and water buffalo. Why not apotheosize the camel? Many farmers do actually employ camels for pulling plows in the arid northwestern regions of India. But the specifications for the ideal Indian plow animal call for a creature that also thrives during wet weather. Camels quickly become a sodden mass during the monsoon rains that fall on most of India. A camel mired in the mud is a sorry sight. It can easily break a leg if it tries to free itself. Donkeys and horses? They also pull plows, but for reasons that will become clear in a later chapter, they need to consume much more grass and straw per pound of body weight than cattle, and they lack the ability of cattle to subsist on various kinds of emergency rations such as leaves and rinds. Now we are down to water buffalo, the principal source of modern India's milk supply. Water buffalo milk is creamier than cow's milk, and in deep mud the males can pull better than oxen. But buffalo lack the stamina and resiliency of zebu cattle.

They are costlier to raise and maintain, and they have far less resistance to drought than cattle. They cannot even survive northern India's normal dry periods without having their skins watered down each day. While the males are good in mud, they are far inferior to zebu oxen when it comes to plowing the typical Indian farmer's hard-packed, sun-baked, and dusty patch of earth. Finally, the use of buffalo for milk production is a modern innovation associated with the growth of urban markets and the development of specialized milk breeds. Clearly, this limited kind of creature could not attract the adoration of India's masses as the all-enduring mother of life.

I would only make some slight additions to Gandhi's explanation of the apotheosis of the cow: not only did she give milk but she was the mother of the cheapest and most efficient traction animal for India's soils and climate. In return for Hindu safeguards against the reemergence of energetically costly and socially divisive beef-eating foodways, she made it possible for the land to teem with human life.

CHAPTER FOUR

THE ABOMINABLE PIG

AN AVERSION to pork seems at the outset even more irrational than an aversion to beef. Of all domesticated mammals, pigs possess the greatest potential for swiftly and efficiently changing plants into flesh. Over its lifetime a pig can convert 35 percent of the energy in its feed to meat compared with 13 percent for sheep and a mere 6.5 percent for cattle. A piglet can gain a pound for every three to five pounds it eats while a calf needs to eat ten pounds to gain one. A cow needs nine months to drop a single calf, and under modern conditions the calf needs another four months to reach four hundred pounds. But less than four months after insemination, a single sow can give birth to eight or more piglets, each of which after another six months can weigh over four hundred pounds. Clearly, the whole essence of pig is the production of meat for human nourishment and delectation. Why then did the Lord of the ancient Israelites forbid his people to savor pork or even to touch a pig alive or dead?

> Of their flesh you shall not eat, and their carcasses you shall not touch; they are unclean to you [Lev. 11:1] . . . everyone who touches them shall be unclean [Lev. 11:24].

Unlike the Old Testament, which is a treasure trove of forbidden flesh, the Koran is virtually free of meat taboos. Why is it the pig alone who suffers Allah's disapproval?