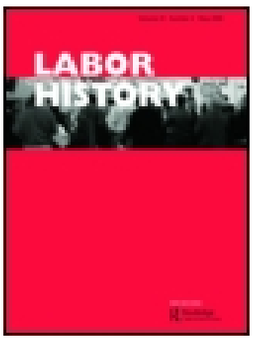

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"Animals Are Part of the Working Class": A Challenge to Labor History

JASON HRIBAL

Good gods! how abject is our race,
Condemn'd to slav'ry and disgrace!
Shall we our servitude retain,
Because our sires have borne the chain?
Consider, friends, your strength and might;
'Tis conquest to assert your right.
How cumb'rous is the gilded coach!
The pride of man is our reproach.
Were we design'd for daily toil,
To drag the plough-share through the soil,
To sweat in harness through the road?
To groan beneath the carrier's load?
How feeble are the two legg'd kind!
What force is in our nerves combin'd!
Shall then our nobler jaws submit
To foam and champ the galling bit?
Shall haughty man my back bestride?
Shall the sharp spur provoke my side?
Forbid it, heav'ns! Reject the rein;
Your shame, your infamy disdain.
Let him the Lion first controul,
And still the tyger's famish'd growl.
Let us, like them, our freedom claim,
And make him tremble at our name.

John Gay, *The Council of Horses* (1727)

By the beginning of the 19th century, the majority of the English commons had been enclosed and privatized. The land itself had become a scene of "sheds," "pens," "styes," and "inclosures and walls." Therein, the cattle, cows, geese, horses, and pigs were fenced into, not out of, specific areas. They were now far more dependent upon others for their feeding and care, as their customary rights of pasture and pannage had since been removed, and they were no longer able to live "without labour, or at least as little as possible." Rather, these animals had become commodities. It was, in fact, during the 1700s that the term "farm," which originally meant to lease out something (like a bull or plow) for profit, came to signify an actual site of production. Likewise, the word "live stock"—defined as any creature kept or dealt for profit—also originated from this era. Yet, this definition of "living stock" is misleading. For one, it is often

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written and spoken of in the passive voice. Animals do *not* "naturally" become private property, no more than humans "naturally" come to sell their labor. Rather, there is an *active* history here—one of expropriation, exploitation, and resistance. Second, the term "living stock" is only from the human point of view. In other words, when we consider this situation from the sheep's, cow's, horse's, or pig's perspective, they are not living commodities or "the means of production." These creatures are treated as chattel slaves to be bought and sold at will. But one has to be wary here, as this category has tended to ignore that this type of unwaged labor is, just as it has been for past exploitative economic systems, essential for accumulation. Since the 17th century, a great many animals have been put to work, they have produced large monetary profits, and they have received little to no compensation or recognition for their efforts. The farms, factories, roads, forests, and mines have been their sites of production. Here, they have manufactured hair, milk, flesh, and power for the farm, factory, and mine owners. And here, they are unwaged. Indeed, we can think of others who operate under similar circumstances: human slaves, children, homeworkers, sex-workers, to name a few. The basic fact is that horses, cows, or chickens have labored, and continue to labor, under the same capitalist system as humans.[1]

The following essay is not an analysis of domestication. Rather, this is an historical account of the role which animals have played in the development of the agricultural and industrial revolution. It is an account of how this process in turn impacted the lives of these creatures—both qualitatively and quantitatively. It is an account of how animals have contested their expropriation and exploitation. It is an account of how a collective consciousness and struggle for the rights of animals arose and formed over the 17th and 18th century.

The challenge to labor history here is three-fold. First, the essay asks the readership to consider the role of animals in the development of capitalism. Second, the basic assumption that one needs to be human to be a worker is called into question. Finally, the essay confronts the parameters currently applied to the sphere of "the working class."

THE WOOL AND MEAT INDUSTRIES

In 1658, Edward Topsel's voluminous *The History of Four-footed Beasts* was posthumously republished in London. Combining natural history together with ideas of commodification, Topsel examined and described a great many creatures in terms of their *proper* physiology—that is, what their physical features *should* be. "The Sheep," for example, "ought to be of a large body, that so their wooll may be the more, which ought to be soft, deep, and rough, especially about the neck, shoulders, and belly." From the Middle Ages, English wool had been a key domestic and export commodity for clothing manufacture. In the early 1300s, some 20,000 sheep labored for the priory of St. Swithun's, Winchester, but even with the presence of these large monastic herds, most English sheep lived in, as one historian put it, "a wild condition" until the mid-18th century. This was the open pastures, moors, and woodlands, and it was no golden age. The English commons were quite real and substantial—a dynamic socioeconomic system that grew out of the feudal period and was based upon the principles of

[1] William Cobbett, *Rural Rides*, Vol. 2 (London: Peter Davies, 1930), 492–493.

subsistence, community, and, especially for animals, autonomy. Hence, in order for there to be "improvement of strains" among sheep, as Topsel and others called for, major alterations had to be made to this way of life.[2]

The first step in this process was to create "sheep-walks." These could be former open-pastures that were sectioned off into several smaller, private parcels. They could be converted arable fields, or these walks could be created by felling woodlands or, as many were, by draining moors and fens. It was said that during this period of mass enclosure the sheep literally "ate" the countryside out from under the people. True enough, the proliferation of walks came at the expense of arable fields and open pasture. Of course, the sheep themselves had nothing to do with this privatization of land. Rather, this was a project designed by a few individuals.

Once enclosure was accomplished, these new landowners could then turn their attention to other means of increasing productivity. One of these methods was the implementation of controlled breeding—that is, the production of desired body and hair qualities through the control of reproduction. Sexual manipulation of sheep had existed for centuries. It was only with the coming of the 17th and 18th century, however, that controlled-breeding became a standard practice. From this point forward, only those sheep possessing the proper characteristics would ever be allowed to reproduce. As for the others without "a large body" or the possibility of growing into one, they would either be culled soon after birth or emasculated. Another method that developed to enhance the production of wool was "the sheep-house." Whereas previously these creatures spent their days and nights outside in the elements, the new structures protected the wool from the profit-damaging effects of the sun, rain, and variations in temperature. In truth, as the early 19th century agriculturist Robert Bakewell pointed out, if the proper management techniques were followed, sheep could become the "best machine for converting herbage into money." Yet, the sale of wool was only one means by which to accomplish this goal, for there was in progress another even more profitable occupation for these four-legged laborers—the production of "mutton."[3]

For a millennium, the diet of the monetarily wealthy had, in stark contrast to the average British man and woman, consisted of flesh and lots of it. Some families had

[2] Edward Topsel, *The History of Four-footed Beasts and Serpents* (London: E. Cotes, 1658), 466; Eileen Power, *The Wool Trade in English Medieval History* (Westport, CT: Greenwood Press, 1987), 34; Nicholas Russell, *Like Engend'ring Like: Heredity and Animal Breeding in Early Modern England* (Cambridge: Cambridge University Press, 1986), 196–197; J.M. Neeson, *Commoners: Common Right, Enclosure, and Social Change, 1700–1820* (Cambridge: Cambridge University Press, 1993). The modern paradigm of paternalism towards animals (that is, the assumption that animals are unable to care for the themselves), was created over the 17th, 18th, and 19th centuries. Likewise, the assumptions of "dog eat dog" and "it must be a brutish, nasty life" are also historical products: products that are interlinked with the creation of similar attitudes towards certain human cultures (i.e., Native Americans, Africans, or the European peasantry). Indeed, whether for human or nonhuman, the purpose of this elitist ideology is to rationalize and justify the exploitation of these creatures. See chapter 4 in Jason Hribal, "Animals are Part of the Working Class: Commons, Enclosure, and Resistance in the Atlantic World" (Ph.D. diss., University of Toledo, 2002) for an historical analysis of these ideological paradigms; and see Stephan Lackner, *Peaceable Nature: An Optimistic View of Life on Earth* (New York: Harper & Row, 1984), for an ecology "from below" view that stresses, for instance, that violence only causes about 5% of all deaths in nature.

[3] Robert Bakewell, *Observations on the Influence of Soil and Climate upon Wool* (Philadelphia, PA: Kimber and Conrad, 1814), 68 and 114; Robert Bakewell quoted in Harriet Ritvo, *The Animal Estate: The English and Other Creatures in the Victorian Age* (Cambridge, MA: Harvard University Press, 1987), 66; Roger Wood and Vitezslav Orel, *Genetic Prehistory in Selective Breeding: A Prelude to Mendel* (Oxford: Oxford University Press, 2001), 57–123.

their own personal "stocks" of animals. Others owned private deer-parks, and most could afford to purchase it from butchers. In fact, when one reads the 17th century journals of John Evelyn, Thomas Isham, or Samuel Pepys, he or she cannot help but be amazed at the sheer quanities of flesh being consumed by the lords and ladies of the day. There were piles of venison, plenty of roast beef, legs of mutton, entire fowls, slices of veal, and several turkeys—all on just one dinner table. It is of little wonder then, as some scholars have noted, that these persons were so overcome with poor intestinal health. For the average man or women, however, this was not a problem. The cottage family only occasionally had a hare, bird, pig, goat, goose, or deer for dinner. Flesh eating was a rare, and often special, event in lives of most people. The word "meat" itself, at this time, simply meant a meal or edible part of a solid food. Green-meats were vegetables. White-meats were dishes made from milk. Sweet-meats were sweet-tasting cakes or candied fruits, and baked-meats were pastries or pie, which may or may not contain flesh. It was not until the 19th century that "meat" gained its contemporary definition—a definition that evolved from three entomological roots. The first of these is "meat" as a meal, with emphasis on flesh dishes. The second is from the phrase "to bring meat into one's mouth"—meaning to bring in monetary profit. The third comes from the verb "to meat," that is, to supply someone with something (in this case, flesh). Just how, the reader may be wondering, did these three separate roots become linked to form the contemporary word? Well, the evolution of "meat" can be traced to several key events in history.[4]

The first was the advent of the commercial livestock industry on both sides of the Atlantic. In the years of 1657/8, for example, five Englishmen acquired a large tract of land, later known as "the Pettaquamscut purchase," in what is now Southern Rhode Island. This became New England's first ever large-scale production site for sheep and cattle. Here, these creatures' job was a simple yet deadly one. In exchange for fodder, they labored to get fat, to be taken to a central location, and to be slaughtered. Daniel Defoe called these places of death and sale: the "flesh markets." In America, such cities as Boston and New York or the plantations of the West Indies were popular 17th century sites. In the British Isles, London was, not surprisingly, the primary destination for most sheep and cattle. The city had long held a variety of locations for slaughter—such as St. Nicholas on Seacoal Lane or Rother Street (called Red Rose Street because of the permanent stain of blood), but none were as large, more well known, nor longer standing than Smithfield, operating every Monday and Friday from ca. 950. Yet, even the busiest of "flesh markets" had never witnessed the levels of volume that would occur with the coming of the 18th century. Over that 100-year period, the amount of sheep and cattle sold at Smithfield nearly doubled—from about 500,000 to 900,000 and 76,000 to 124,000, respectively. In Falkirk, Scotland, a major northern market, the number of cattle sold quadrupled, from about 30,000 to 150,000. However, it was not

[4] John Evelyn, *Diary and Correspondence of John Evelyn*, Vols. 1 and 2 (London: George Bell, 1883); William Harrison, "A Description of England," in *Elizabethan England*, ed. Lothrop Withington (London: Walter Scott, 1979); Thomas Isham, *The Diary of Thomas Isham of Lamport* (Farnborough: Gregg International, 1971); Samuel Pepys, *The Diary of Samuel Pepys* (London: Harper Collins, 1995); Anita Guerrini, *Obesity and Depression in the Enlightenment: The Life of George Cheyne* (Norman: University of Oklahoma Press, 2000). While anthropologists, such as Nick Fiddes, have argued that "meat" is an enduring *universal* symbol, I do not believe that these scholars have not examined "meat" *historically*. In fact, to project the contemporary definition of "meat" onto the language of past cultures, when even pre-19th century English did not define "meat" as such, is quite problematic.

just this rise in quantitative figures that transformed "flesh" into "meat." There were additional reasons.[5]

William Marshall and J. Mathews, two of the more famous 19th century husbandmen, analyzed every aspect of cattle culture. From food, to shelter, to health-care, to breeding, to slaughter, to physiology, nothing was left unassayed. These two men examined the steer's head. They measured the circumference of the neck. They peered into the eyes. They sized the horns. They felt the shoulders. They looked at the chins. They fingered the texture of the skin. They even considered age factors. Nothing was left unstandardized. This was scientific management. Unprofitable techniques were ceased. Unprofitable qualities, along with those steers who had them, were selected out of the herd. The cattle that remained lived only to a pre-determined age, as to maximize the body size and profit gained. Indeed, between 1700 and 1800, the body weight of the average steer had been nearly doubled. The meat industry was definitely on its way.[6]

Another four-legged creature who met a similar fate under the "flesh trade" was the pig. In the 17th and 18th centuries, no island housed more than Ireland. A traveler touring the country during the 1790s described the situation: "I know a merchant who, from what I am told kills every year between twenty and twenty-five thousand pigs, which statement gave me occasion to say to him that he was the greatest murderer of hogs I ever knew." Significantly, though, the majority of these creatures did not labor on farms. Rather, they often came from the cottage industries. "Every hole has a pig," William Cobbett recognized. "The pig eats with the family, and generally sleeps in the same place." "He [or she] goes in and out and about the hole, like one in the family; the family sleep, huddled up together, on dead weeds or a little straw in one corner of the hole, and the pig, on a similar bed in another corner." The meals were made of potatoes—grown and harvested from a cottage plot. They would be "taken up and turned out into a great *dish*, which dish is a shallow basket made of oziers with the bark on." The family would then "squat round this basket and take out the potatoes with their hands; the pig stands and is helped by some one, and sometimes he eats out of the pot." Truly, Cobbett noted, "the pig is the person of most consequence; he is sold to *pay the rent*: if he fail, the family are turned out into the naked air to perish." The author of this passage was in no way exaggerating the seriousness of this predicament. The landless, Catholic Irish families had no choice but to sell pigs in order to pay the rent.[7]

By the mid-19th century, Ireland had since been surpassed in pork production by other countries—in particular, the United States. In fact, many American Midwestern towns owe their entire existence to the one-time employment of pigs. The most well known of these locations is Cincinnati, Ohio—then known as "Porkopolis." Frederick Law Olmsted, while visiting the city in the 1850s, toured a processing plant:

[5] Daniel Romani, Jr., "The Pettaquamscut Purchase of 1657/58 and the Establishment of a Commercial Livestock Industry in Rhode Island," in *New England's Creatures, 1400–1900*, ed. Peter Benes (Boston, MA: Boston University Press, 1995), 45–60; Daniel Defoe, *A Tour through England and Wales*, Vol. 2 (New York: E.P. Dutton, 1948), 342–345; Frederic Eden, *The State of the Poor*, Vol. 1 (New York: Augustus M. Kelley, 1966), 334; Arthur Young, *General Reports on Enclosures* (New York: Augustus M. Kelley, 1971), 373–375; Richard Perren, *The Meat Trade in Britain: 1840–1914* (London: Routledge and Kegan Paul, 1978), 1–32; I.F. Grant, *Highland Folk Ways* (London: Routledge and Kegan Paul, 1961), 69.

[6] William Marshall, *The Rural Economy of the Midland Counties*, Vol. 1 (London: G. Nicol, 1790), 327–331; J. Mathews, *Remarks on the Cause and Progress of the Scarcity and Dearness of Cattle* (London: M. Ritchie, 1797); Ritvo, 45–81.

[7] De Latocnaye, *A Frenchman's Walk through Ireland, 1796–7*, trans. John Stevenson (Belfast: Blackstaff Press, 1984), 85; Cobbett, Vol. 3, 894–896 and 892.

> We entered an immense low-ceilinged room and followed a vista of dead swine, upon their backs, their paws stretching mutely towards heaven. Walking down to the vanishing point, we found there a sort of human chopping machine where the hogs were converted into commercial pork. A plank table, two men to lift and turn, two to wield the cleavers, were its component parts. *No iron cog-wheels could work with more regular motion*. Plump falls the hog upon the table, chop, chop; chop, chop; chop, chop, fall the cleavers. All is over. But, before you can say so, plump, chop, chop; chop, chop; chop, chop, sound again. There is no pause for admiration. By a skilled sleight of hand, hams, shoulders, clear, mess, and prime fly off, each squarely cut to its own place, where attendants, aided by trucks and dumb-waiters, dispatch each to its separate destiny—the ham for Mexico, its loin for Bordeaux. Amazed beyond all expectation at the celerity, we took out our watches and counted thirty-five seconds, from the moment when one hog touched the table until the next occupied it place. The number of blows required I regret we did not count.[8]

So with a "crack" on the head, a "whirl" of the conveyor, and a "chop, chop; chop, chop," this efficient machine killed a half-million pigs per year. Yet, within just a few decades, these seemingly unmatchable figures would be considered marginal at best. Cincinnati's factories were largely dependent upon local hogs—which were driven by foot from their countryside farms to the factory gates, but, with the appearance and proliferation of the steam-powered railroad, this means of supply became obsolete. Pigs or cattle could now be raised anywhere in the country, crammed into tight-fitting box-cars, and zipped off to a centralized city for slaughter, packaging, and distribution, and no American city took more advantage of its location and access to the rail than Chicago.[9]

From its inception in 1865, the Union Stockyards prospered like no other. In only one year's time, the total railroad trackage surrounding the yards went from zero to one hundred miles in length. Within two decades, "Packingtown" was packing up to five and half million pigs and two million steers per year. This was to be the site of Upton Sinclair's infamous novel *The Jungle* (1905). "Infamous," many say, as it caused quite a stir upon publication. Not only did the book expose the diseased conditions of the stockyards, but it vividly described the exploitative nature of the work.

> It was all so very businesslike that one watched it fascinated. It was pork-making by machinery, pork-making by applied mathematics. And yet somehow the most matter-of-fact person could not help thinking of the hogs; they were so innocent, they came so very trustingly; and they were so very human in their protests—and so perfectly within their rights! They had done nothing to deserve it; and it was adding insult to injury, as the thing was done here, swinging them up in this cold-blooded, impersonal way, without a pretense at apology, without the homage of a tear. Now and then a visitor wept, to be sure; but this slaughtering-machine ran on, visitors or no visitors. It was like

[8] Frederick Law Olmsted, *A Journey through Texas* (New York: Mason Brothers, 1860), 9. Significantly, the economist R.H. Coase, author of the Coase theorem, got his intellectual start with the labor of pigs; see e.g. R.H. Coase and R.F. Fowler, "Bacon Production and the Pig-Cycle in Great Britain," *Economica* 6 (May 1935), 142–167.

[9] Sara Rath, *The Complete Pig* (Stillwater, MN: Voyageur Press, 2000), 122.

> some horrible crime committed in a dungeon, all unseen and unheeded, buried out of sight and of memory.[10]

Surely, some earlier people would have agreed with Sinclair's assessment. Take, for instance, the country weavers of Lancashire. These early 19th century craftsmen despised town-processed food—always preferring to "summat at's deed ov a knife." If forced to eat this food, "every mouthful went down among painful speculations as to what the quadruped was when alive, and what particular reason it had for departing this life." The historian Edward Thompson points out how this recognition on the part of the weavers "indicates both the survival of their own direct pig-keeping economy and their suspicion that town meat was diseased." True enough, this recognition does just that; but it also tells us more. For within the definition of "flesh" itself, there is often an active component. The person must kill the pig or duck for their subsistence. This subsistence could be gluttonous and sanguinary in practice, but it also could be, as it was with the country weavers, holistic and empathetic. However, with the formation of the word "meat," none of that mattered. This was to be mass production—the employment of millions upon millions of sheep, cattle, and pigs. This was to be morally antiseptic—an 'out of sight, out of mind' system of mass-slaughter, and this was to be a for-profit business—one that fundamentally changed the diets of all people, regardless of class. By 1900, the consumption of meat in the United Kingdom had reached truly historic levels: with the average person eating 132.1 lb per year.[11]

DAIRY AND EGG INDUSTRIES

When William Petty toured Ireland in 1691, a series of questions weighed upon his mind. How much grass does each individual cow consume per year? How much milk does she produce in that given period of time? What is the bare minimum amount of acreage needed in order for her survive and reproduce? A bull can impregnate how many cows each year? What is the maximum number of cows that one person can milk per day? Odd questions it would seem for the cottage family, but then Petty was no cottager. His job was to survey the British Empire's newest conquest, and part of that conquest included the animals of the isle. The Irish sheep, horses, cows, and pigs were now all subjects of the crown, and all were placed under a new system of management. Interestingly, the only aspect left untouched by Petty was an attention paid towards the cow's body itself, and how she could be enhanced, but this kind of managerial consideration would occur soon enough.[12]

Gone were the days of cows roaming autonomously about the open-pastures for weeks to months at a time, socializing with their fellow creatures. Gone were the days of being able to choose one's sexual partner, and gone were the days of being "dry"—that is, not pregnant—at least for the short-term. The enclosed field and the "cow-house" now became a permanent site of production: the factory. Pregnancy became a year-around constant and mothers and their children would be separated for

[10] Siegfried Giedion, *Mechanization Takes Command: A Contribution to Anonymous History* (London: W.W. Norton, 1969), 212–213; Upton Sinclair, *The Jungle* (New York: Grosset and Dunlap, 1905), 41.

[11] Quoted in E.P. Thompson, *The Making of the English Working Class* (New York: Vintage Books, 1966); Perren, 3; Thompson, as well as Eric Hobsbawn, have assessed the standard of living of English workers during the Industrial Revolution according to the volume of meat consumption. However, not all individuals from that era, in addition to the Lancashire weavers, would have agreed with their assessment. See the last section of this essay for examples.

[12] William Petty, *The Political Anatomy of Ireland* (Shannon: Irish University Press, 1970), 52–53.

significant periods of time, as the practice of raising one's children was thought to interfere with producing milk. Even one's lover was now chosen by the farmer. In fact, the shape and size of the cows' head, eyes, neck, shoulders, ribs, rump, udder, and skin were all quantified and standardized. Gaunt workers or those who refused to readily supply milk were no longer allowed to reproduce. Only large, plump cows, meeting the correct standards—which included a proper temperament were selected for breeding. The cow's status had become one based solely on milk output. Weekly and monthly quotas had to be met and continued to be met, or one faced the imminent prospect of the slaughterhouse.[13]

By the early 19th century, distilleries found that their waste products (leftover slop) could be used to feed cows, and that milk production was actually a profitable side-business. It was a simple matter of finding some unoccupied space within their current accommodations. One did not even have to construct stalls, as existing structural beams did just fine. There, tethered to a wooden post, several hundred cows (on average between four and seven hundred) could be employed. The common adjectives used at the time to describe the factory conditions ranged from airless and lightless to nightmarish and putrid. The mid-century New York City newspapers deemed the milk itself, "swill," and yet these public objections did little to deter the growth of the milk business. Between 1850 and 1900, the number of cows working in the United States tripled in number from five to 17 million. Likewise, that same timeframe witnessed a doubling in individual output, from approximately 1,400 to 3,600 gallons per year. Under capitalism, cows had to labor harder than ever before, but they were not the only females who faced this predicament.[14]

In 1749, Antoine Ferchault de Réaumur's *The Art of Hatching and Bringing up Domestic Fowls* was published for the first time in English. "One cannot read Réaumur's book," the historian Siegfried Giedion tells, "without excitement, for in this banal matter the observation of the great savant is powerfully projected upon the slightest details." "He knows precisely how the chicken breaks out of its shell, how the embryo forms; and he devises the 'artificial mother.' " True enough, in the days following enclosure, the sight of the hen, rooster, and broods (their family of young) roaming about the fields, seeking out their own subsistence, and sleeping in the trees became a rare sight. The male gender itself was headed for extinction. Under the for-profit model, only a few roosters were ever actually needed for sexual reproduction purposes. Most male chicks would simply be disposed of after hatching. Even the hen's role would be forever changed by this system—for the exact purpose Réaumur's book was to replace her maternal actions by synthetic means. More specifically, he wished to create two separate devices: one that hatched the eggs and the other that would raise the young. The hen's status became one based solely upon her production. She was, to Réaumur, nothing more than a means to supply an egg. In his first hatching experiment, the author positioned an egg-loaded barrel into a pile of warm dung. It did not work well. Next, he tried out a nunnery's baking oven. This functioned better but it still had problems. Finally, Réaumur settled upon a wood-heated cylindrical container. This device, in an ironic turn, became known as "the brooder"—the *new* family unit. Once

[13] Horatio Townsend, *Statistical Survey of the County of Cork* (Dublin: Graisberry and Campbell, 1810), 579; G.E. Fussell, *The English Dairy Farmer, 1500–1900* (New York: Augustus M. Kelley, 1966), 17–18, 136, 62–63, 24, 28–29, and 302.

[14] Fussell, 143 and 307–308; Ralph Selitzer, *The Dairy Industry in America* (New York: Dairy and Ice Cream Field, 1976), 34–37; T.R. Pirtle, *The History of the Dairy Industry* (Chicago: Mojornier Brothers, 1973), 169.

this project was accomplished, the author then soon discovered that a box lined with lamb's wool did a fine job, at least in the functional sense, in the raising the young females. Its ceiling was inclined at just the proper angle to imitate the comforting care and love only a mother's wings could give, but such was to be the life of so many chicklings.[15]

A century later, as the brooder had become standard equipment, a new set of individuals turned their attention to further enhancing egg production. The first poultry show, highlighting the latest selective breeds, had already occurred in 1845 in Regents Park, London, and the first American exhibit took place in Boston five years later. "The business of poultry raising," T.B. Miner proclaimed in his *Domestic Poultry Book* (1853), "… has now become an object of great importance." Miner knew of what he spoke—as by the 1850s some 400,000 eggs were being consumed per day in New York City. This was to be the era of the Spanish Leghorn: a tough, high volume laborer who came to dominate the egg industry, and this was to be the era of the large, multi-level egg factory: wherein hundreds to thousands of hens could be employed within small work cubicles. Everything could be uniform, and everything could be centralized—from feeding to egg collection. One factory alone, if properly operated, could ship enough eggs daily to feed a small city.[16]

FARMING, MANUFACTURE, TRANSPORT, MINING, AND LUMBER

When James Watt chose the horse as the base-unit by which to measure the power output of the steam engine, he was quite correct in doing so. Horses, mules, donkeys, and oxen had been the primary suppliers of power for a millennium. This was true in agriculture. This was true in milling. This was true in transportation. Yet, never before in European history had the demand for animal-power reached the levels that it would at the beginning of the 18th century.[17]

On the open agricultural-fields, Arthur Young pointed out, "the plough, the harrow, and the cart travel a useless distance; less land is ploughed, and less manure and corn carted." This observation was a direct comparison to the enclosed field system. For while less plowing and carting was done in the open-fields, this equipment did not actually travel "a useless distance." Rather, it was just not one usually intended to make a profit. In Young's world, every action was about "turning a profit;" and all of this turning (of the soil) meant work and lots of it.[18]

On these large farms, William Cobbett wrote that not only do the horses plough the ground, but "they sow the ground; they hoe the ground; they carry the corn home; they thresh it out; and they carry it to market." It was only a century earlier (c1700) when Jethro Tull first advocated the animal-driven hoe and seed-drill. Before that the act of sowing, hoeing, and even hewing was often performed by human power, but these days were past. "Nay," in some regions, Cobbett found, horses even "*rake* the ground; they

[15] Antoine Ferchault de Réaumur, *The Art of Hatching and Bringing up Domestic Fowls by means of Artificial Heat* (London: Printed for C. Davis, 1750); Giedion, 249.

[16] Loyl Stromberg, *Poultry of the World* (Ontario: Silvio Mattacchione, 1996); John Skinner, ed., *American Poultry History, 1823–1973* (Madison: American Printing, 1974); T.B. Miner, *Miner's Domestic Poultry Book: A Treatise on the History, Breeding, and General Management of Foreign and Domestic Fowls* (Rochester: Geo. W. Fisher, 1853), v.

[17] Jennifer Tann, "Horse Power, 1780–1880," in *Horses in European Economic History: A Preliminary Canter*, ed. F.M.L. Thompson (Reading: The British Agricultural History Society, 1983), 22.

[18] Young, 218.

rake up the straggling straws and ears (which should be gleaned by others!); so that they do the whole, except the reaping and the mowing." In truth, it would not be long before horses performed those last tasks too.[19]

By 1884, Cyrus McCormick's Chicago factory was producing 80,000 reapers per year. Similarly, the Marsh Brothers would develop their famous *Harvester*, a machine that both reaped and banded at the same time. Of course, these were some large, heavy pieces of equipment. Each of them requiring several strong horses, or at least an inexhaustible reserve of scrawny ones, to pull and power them, and fulfilling this labor supply did not happen overnight. Rather it took several centuries and much concerted effort to modify the way these creatures lived.[20]

"The improvement of the native horse and neat cattle in the country must for ever remain stationary," the agriculturist Charles Vancouver considered, "so long as the wastes and forests remain open, and that such an indiscriminate mixture of worthless males of both kinds have free and unlimited access to them." Hence, the first step towards "improvement" was enclosure and the fencing in of horses. Once this was accomplished, an individual could then begin to breed for desired qualities and quantities. In fact, whereas controlled breeding was "a novelty in 1700," the historian Keith Chivers notes, it "had by 1800 become general." Soon, immense fairs and auctions would be held on both sides of the Atlantic offering would-be employers a manifold of foot-legged laborers to chose from. At just one Yorkshire fair in 1807, approximately 16,000 were sold in a span of eight days. By the end of the century, there were over one-million horses, mules, and donkeys working on farms in the United Kingdom, and, in the United States, that figure stood even higher. Yet, as lofty as these numbers were, farming was only one employment for the horse.[21]

In the early days of manufacture, there were two main kinds of animal-powered engines. The first was the oblique. These operated by an endless series of belts which were turned by a horse, large dog, cow, or even sheep trotting on the outside or inside of a wheel. This engine was used for pumping water, light wood sawing, churning milk, or even kneading dough. The second type of engine was the horizontal. These functioned by the rotation of sweeps. These sweeps were levers or extended arms that were connected to a large horizontal drive wheel. These wheels could be anywhere from 10 to 50 feet in diameter. As for the power, it would be supplied through the turning of the wheel—a job generally delegated to oxen and horses. The advantage of the horizontal over the oblique was that up to ten workers (or even sometimes more) could be fixed to the machine at any one time, as opposed to two for the other.[22]

By the 1680s, for instance, 300 horses per year were being shipped from Boston to the West Indies. Arriving there, these creatures quickly discovered that their primary duty was to power the three-roller sugar-mill. These machines functioned by feeding sugarcane into rollers, and, by the rotation of the horse, the cane was pulled through and crushed into a liquid pulp. Significantly, a particular breed of laborer—"the mill

[19] Cobbett, Vol. 1, 233; Jethro Tull, *Horse-Hoeing Husbandry* (London: Printed for A. Millar, 1733).
[20] Geidion, 146–161.
[21] Charles Vancouver, *The General View of the Agriculture of Hampshire* (London: Printed for R. Phillips, 1810), 83; Keith Chivers, "The Supply of Horses in Great Britain in the Nineteenth Century," in F.M.L. Thompson (ed.), 34; *The Courier*, November 8, 1807, in *News From the English Countryside*, 1750–1850, ed. Clifford Morsley (London: Harrap, 1979), 174; E.J.T. Collins, "The Farm Horse Economy of England and Wales in the Early Tractor Age, 1900–40," in F.M.L. Thompson (ed.), 85.
[22] Tann, 23; John Storck and Walter Dorwin, *Flour for Man's Bread: A History of Milling* (Minneapolis, MN: University of Minnesota Press, 1952), 71–92.

horse"—was developed solely for work on these engines. It was, in fact, the introduction of these skilled animals that provided so much of the power needed to turn the nascent sugar trade into one of the most dominate trans-Atlantic industries of the 18th and 19th century. The horse's unique skill was that they trotted at the exact proper pace, not too fast and not too slow, as to fully maximize production—a production that also came to include the most important fiber of our time, cotton.[23]

One of the earliest cotton "gins" was the *churka* (Sanskrit word for jerking motion). True to its name, when cotton was fed through this hand-powered machine, the rollers jerked, jerked, jerked along, separating the seeds from the fiber. This method could produce up to five pounds of clean cotton per day. By the 18th century, however, the churka had been replaced by much more powerful engines. Joseph Eve's horse-powered Caribbean gin, to illustrate, cleaned upwards of 250–300 lb of cotton per day. Soon, with the mass-production of Eli Whitney's famous animal-powered design, the cotton industry spread throughout southern United States. Oxen and horses were now manufacturing greater and greater amounts of cotton. Only one year after the patent of Whitney's design in 1792, the amount of clean cotton exported from North America to Britain rose to 28 million pounds annually—triple the figure three years previous. By 1850, these nonhuman laborers were producing 600 million pounds of exports yearly. Yet, the requirements for horsepower did not end there, as this cleaned cotton still had to be carded and spun into thread.[24]

Originally, fibers such as wool or cotton had to be disentangled, pulled into strands, and spun by human hands and feet. These tasks took considerable time and much effort, but, from Lewis Paul and John Wyatt's 1738 machine patent, this was no longer to be the case. Spinning frames and carding devices could now be powered via a trotting horse. So whether in Paul and Wyatt's Birmingham operations, Richard Arkwright's Nottingham mill, or in John Lee's Manchester factory, these equine laborers lived on-site, and spent their days and nights "treading the wheel." Work normally began at 7.00 a.m. during the winter and at 6.00 a.m. in the summer with the average shifts lasting 12 hours. Night shifts were not uncommon. Indeed, in the 18th century factories, horses were the ones who scribed, carded, spun, sheared, and fulled. In the breweries, they ground the malt and pumped the wort. In Bersham, they bored the cannons. Horses were oil millers to oil distillers. They were cider pressers and ore winders. They were pug millers, bark millers, and powder millers. They threw the silk, spun the flax, and tore the rags. Horses, mules, donkeys, and oxen did it all, and that would also include transporting the finished goods.[25]

"The two centuries between 1500 and 1700," the historian Joan Thirsk notes, "witnesses a steady rise in the volume of internal trade on roads and rivers, which multiplied the need for horses on both routes." The coach itself was first introduced in 1564 for Queen Elizabeth. Both Henry VIII and herself employed several hundred horses a piece, but within only a century, nearly every London "noblemen and person

[23] John Carroll, *The Timber Economy of Puritan New England* (Providence: Brown University Press, 1973), 93; Richard Dunn, *Sugar and Slaves: The Rise of the Planter Class in the English West Indies, 1624–1713* (Chapel Hill: University of North Carolina Press, 1972), 192–193.

[24] Karen Britton, *Bale O' Cotton: The Mechanical Art of Cotton Ginning* (College Station, TX: Texas A&M University Press, 1992), 10–11, 20, 25, 37, and 48–49; S.D. Chapman, *The Cotton Industry in the Industrial Revolution* (London: MacMillian, 1987), 72.

[25] Richard Hills, *Power in the Industrial Revolution* (New York: Augustus M. Kelley, 1970), 33, 55, 67, and 92; R.S. Fitton and A.P. Wadsworth, *The Strutts and the Arkwrights, 1758–1830: A Study of the Early Factory System* (Manchester: Manchester University Press, 1958), 64, 82, and 199; Tann, 23–26.

of quality," John Evelyn observed, had their own coach and stable of horses. This was to be the era of Gervase Markham and his *Maister-Peece* (1643) and *The Perfect Horseman* (1656)—grand treatises that dispensed proper riding, caring, feeding, and breeding techniques to all members of the gentry. In fact, toward the end of the 18th century, another breed of horse, "the totter," was developed solely for their alacrity of movement and increased stamina—a perfect employee for the growing business of ground transportation. The official, governmental mail-coach had just been instituted in 1784, replacing the "post-boys" on horseback. In English towns such as Salisbury and Gloucester, several coach companies had, only a few years earlier, begun service to London—transporting three to four passengers and about 14 lb of luggage per carriage. By 1807, in just Manchester alone, twenty-seven coach-services provided travel to London and back. Whereas thirty years previous, there was only one. Moreover, this 185 mile journey, which once took four and one-half days, was now made in only 30 hours. This was truly the age of the "turnpike."[26]

Turnpikes were privately and federally financed, constructed, and maintained roadways, which for a fee, a private coach or commercial service could travel. Between 1720 and 1838, English turnpikes went from approximately 500 miles to 22,000 in total length. Similarly in America, the first engineered road was built during 1793–1794 with private funds. It was 62 miles long and connected Philadelphia to Lancaster, Pennsylvania. The federally funded National Pike, popularly known as the Cumberland road, connected Baltimore to Vandalia, Illinois in 1830. Interestingly, these new American roadways, unlike their British counterparts, were often constructed by horses and oxen. "If they have a new road to form," Cobbett queried in his travels within the young republic, "do you think that they resort to the tedious use of the spade, the shovel, and the pick-axe?" "No such a thing. They go to work with a plough, drawn by fifty or more oxen, and turn up the road, and form it at once." Then, "a road-scraper, drawn by fifty horses, smoothes the surface," but no matter what construction method was used, these new toll-roads were far superior to older, softer ones. The botanist Peter Kalm, witnessing carts stacked four stories high with products, thought "there can hardly be any land where larger carts and wagons are used, and heavier loads are laid on them than in England." Of course that observation was not really true. Rather, the load size simply depended upon three factors. First, one needed sturdy wagons. Second, there had to be well-constructed roads. On soft roads, wagons could only weigh 5/8ths of a ton at most. Otherwise, the vehicle would get stuck in the mud or large ruts, and risk overturning. On hard roads, weights could reach up to two tons. Third, these larger load-sizes depended upon their own rather large supply of laborers to pull them.[27]

During the 1800s, the average working life of a horse was only about four years on a fast coach and seven on a slow. On the mail-coaches, they could only handle about

[26] Joan Thirsk, *Horse in Early Modern England: For Service, For Pleasure, For Power* (Reading: University of Reading, 1978), 5; Evelyn, Vol. 2, 30, 68–69, and 120; Gervase Markham, *Markham's Maister Peece* (London: Imprint by W. Wilson, 1656); Markham, *The Perfect Horseman* (London: Printed for Humphrey Mosely, 1656); Chivers, 34; *The Salisbury and Winchester Journal*, July 21, 1771, in Morsley (ed.), 74–75; *The Glocester Journal*, August 16, 1784, in Morsley (ed.), 109; *The Weekly Dispatch*, September 6, 1807, in Morsley (ed.), 172.

[27] Eric Pawson, *Transport and Economy: The Turnpike Roads of Eighteenth Century Britain* (London: Academic Press, 1977), 122 and 137; John Copeland, *Roads and their Traffic, 1750–1850* (New York: Augustus M. Kelley, 1968), 62; Albert Rose, *Historic American Roads* (New York: Crown, 1976); Cobbett, Vol. 2, 566; Peter Kalm, *Kalm's Account of his Visit to England on his way to America in 1748*, trans. Joseph Lucas (London: MacMillan, 1892), 24.

three years before their bodies gave out. Even more unfortunate, there was no retirement for these employees. They would either be sold to farmers or, worse yet, livery stables. These stables would then lease out their services on a part-time or full-time basis for commercial transport, personal carriages, cab service, or public buses. So once again, these same horses would be sent out to work in the already crowded streets. Over the course of this century, the number of horses and mules employed by English businesses increased from about 251,000 to 1,166,000. The amount working for private (non-agricultural) families swelled from 200,000 to 600,000. The figures for London cabs rose from one per every 1,000 people to (even with the increase in city population) one per every 350 people, and the number of horse-driven, metropolitan buses went from 376 to over 1,000.[28]

Early canals included the Bridgewater, Trent & Mersey, Staffordshire & Worcestershire, Coventry, and Oxford. In the United States, the grand Erie Canal was completed in 1825—connecting Buffalo to Albany; and the Ohio Canal was finished 6 years later—linking Lake Erie to the Ohio River. As for the actual process of transporting goods via canals, it would begin at the docks. Here, dockworkers would stack the freight into barges. These rather large boats were normally 17 ft wide and 100-plus ft long. The loads themselves could weight anywhere between 40 and 80 tons. Once the loading was accomplished, the rest of the work was then turned over to the mule and the horse: who had the ominous task of having to tow these sizable barges. Steam engines were occasionally used for power, but, for the time, it was these laborers, and no other, who "towed the line" for the canal industry. Eventually, though, as the cost of the steam engine became more affordable to the average barge-operator, the horse and mule would gradually be replaced. This same fate had already visited, or soon would, many other horse-powered industries. Yet, these occurrences in no way deny nor lessen the true accomplishments of these workers. Furthermore, we should never think that these replacements were ever uniform in their timing.[29]

In some fields of employment, such as textiles, it occurred by the late 18th century—although Matthew Boulton continued to recommend the utilization of horse-driven mills when power-requirements were low. While in others, like the cotton or sugar industry, this did not happen until the end of the next century. On the farm, horses, donkeys, and mules labored till the mid-20th century. Even with the construction of the railroad, the need for short-distance, horse-pulled transportation actually increased. Moreover, all of these new, fancy engines required a power source in order to produce the steam that pumped the pistons; and that source was coal and wood.[30]

Between 1744 and 1794, the consumption of coal in London and its environs nearly doubled in amount. Over the next century, the output from English mines accrued from 10 million tons in 1800 to 287 million tons by the eve of World War I. The horse and mule were two key reasons for this increase in production. In fact, by the late 19th century, a particular breed of horse—"the pit-pony"—was developed just for this dangerous, subterranean mining. These compact, muscular workers pulled gins, tubs, and carts of rock, coal, and supplies along the rails from the depths to the surface and back again. Some pit-ponies—such as Prince of the Denaby Mine, who *refused* to pull

[28] Chivers, 33; Copeland, 88 and 118; James Winter, *London's Teeming Streets, 1830–1914* (London: Routledge, 1993), 118.

[29] Charles Hadfield, *The Canal Age* (New York: Frederick A. Praeger, 1968); Hadfield, *British Canals: An Illustrated History* (London: David and Charles, 1984); L.T.C. Rolt, *Navigable Waterways* (London: Longmans, Green, 1969).

[30] Tann, 28; Britton, 100.

tubs—worked on haulage, pulling slack on the tail rope of a main-and-tail engine, and while others powered the water-pumps on the surface, draining the leakage out of the shafts. The horse could continue to be found working the coal mines well into the 20th century.[31]

As for the timber industry, oxen were the ones who skidded the fallen trees from the forest. It was never a mere coincidence that the Paul Bunyan of popular folklore was always tied to Babe, the blue ox. For Paul, like every North American lumberjack, was dependent upon the strength and labor of oxen. Likewise, the original "teamsters" were teams of horses who pulled the loaded wagons and sleighs, with average weights of 20 tons, to the rivers and mills. Even as late as 1950, there were still some 35,000 horses employed in the United States and Canada within this industry.[32]

RESISTANCE

The 18th century botanist Peter Kalm grudgingly admitted that there were always a few cattle in every herd so "very unruly" "that there was no enclosure strong enough to resist them, if they had a mind to break through it." Moreover, when these recalcitrant creatures fled, "all the tame cattle followed them." Among pigs too, another observer testified, some would " … will go to a distance from a fence, take a run, and leap through the rails, three or four feet from the ground, turning themselves sidewise." Even "many horses, though quiet with company," the naturalist Gilbert White confessed, "will not stay one minute in a field by themselves: the strongest fences cannot restrain them." Such constant occurrences brought one yeoman to the conclusion that "the enclosures … are so far from being a defense against these animals that they appear often to climb them from mere sport."[33] In fact, the Spanish term cimarrones—the

[31] Eden, 334; John Benson, *British Coal Miners in the Nineteenth Century: A Social History* (New York: Holmes and Meier, 1980), 6–7 and 144; Tann, 26.

[32] Donald MacKay, *The Lumberjacks* (New York: McGraw-Hill, 1978).

[33] Peter Kalm, *Travels into North America*, trans. John Forster (Barre: The Imprint Society, 1972), 110; Richard Parkinson, *A Tour in America in 1798, 1799, and 1800*, Vol. 1 (London: Printed for J. Harding, 1805), 40 and 291; Gilbert White, *Natural History of Selborne* (London: Humphrey Milford, 1937), 194; Timothy Dwight, *Travels in New England and New York*, Vol. 1 (Cambridge: Belknap Press, 1969), 273. The word anthropomorphism originally referred to attributing human traits or characteristics to a deity. The Egyptians, Greeks, and Romans all worshipped Gods/Goddesses who had different human/nonhuman forms. By the 4th century, the definition changed to: ascribing human traits to anything irrational or impersonal. Christianity was just then becoming the dominate state religion of the Roman Empire. Thus forth, any sect that still held onto pagan beliefs was now considered a direct threat to the authority and rule of the state. In order to justify the marginalization and destruction of these religions, to be anthropomorphic became a criminal act. The next shift in definition would not occur for another 15 centuries; Although its conception and purpose were quite similar. This was the mid-1800s, and the animal-rights movement had become a serious force to be reckoned with. Most notable were the anti-vivisectionists, who not only were swaying public opinion but were also gaining converts within the medical community. Hence the elite scientific establishment had a serious problem on their hands. As for many, their work directly depended upon the exploitation of other creatures. Indeed, how would they justify the practice of animal experimentation to a general public who had only images of tortured creatures in their heads? Well, one of the answers was anthropomorphism. The impersonal and irrational now became the animals. So while the scientists had no actual study or proof upon the matter, no more than the Roman Church before them, the claim sounded good, and it made for a good rationalization. The anti-vivisections could now be painted as delusional, sympathetic buffoons; while the scientists were objectified truth.

"wild ones"—originally applied to *escaped* cattle, pigs, and horses.[34] Most owners, managers, or observers of laboring animals—whether through their written word or through their counteractions—fully admitted to the presence of such resistance. These acts could be maliciously violent in form. Horses "bucked." Cattle "charged." Cows "kicked." Pigs "bit." Chickens "pecked"—all with the *recognized* intent that is recognized by the employers themselves, to harm or kill the employers. Or it could be nonviolent in form, such as refusing to work or, at least, work hard.[35]

To counter this resistance, the owners and managers of 17th, 18th, and 19th century farms, factories, and other businesses developed, improved, and standardized a variety of means and methods. Hedges and fences were erected to hinder escapes. Wooden triangular-shaped yokes would be fitted around necks to hinder movement. Wooden clogs would be fastened around back legs to hinder jumping or running. Some farmers would actually cut the leg tendons of their workers. Others clipped the wings of chickens, turkeys, and geese to prevent flight, and still others would blind animals by using a "red hot knitting needle." If these measures failed, there were additional implementations. Local pounds were built for the captured. Ear-marks and brands were increasingly used as a means of identification, and nose-ringing prevented the maroons, especially pigs, from digging into the local fields. Significantly, by the end of the 1700s, most parishes and colonial townships passed laws requiring the utilization of many of the above devices.[36]

As far as controlling more dangerous behavior, other preventive means were developed. Crude devices, such as the spur, bridle and bit, bullwhip, or bull-whacker, were improved upon. Training manuals on the art of "breaking" horses gained wide popularity in the mid-1600s. The practice of gelding (castration) and spaying (ovariotomy) also grew in popularity over this era and, by the mid-19th century, had become standard procedure. Interestingly, this surgery not only deprived reproductive abilities but, as advocates always stressed, impaired the strength and force of "troublesome"

[34] For examples see, Terry Jordan, *North American Cattle-Ranching Frontiers* (Albuquerque, NM: University of New Mexico, 1967), 66, 70, 77, and 93; *Jopson's Coventry Mercury*, May 5, 1760, in Morsley (ed.), 41; Timothy Nourse, *Campania Foelix* (New York: Garland, 1982), 26–27 and 62–65; Samuel Sewall, *The Diary of Samuel Sewall*, Vol. 1 (New York: Farrar, Straus, and Giroux, 1973), 11 and 144; William Stephens, *The Journal of William Stephens*, 1741–3, ed. E.M. Coulter (Athens, GA: University of Georgia, 1958), 68–69, 189, 195, and 207. All three journals, *William Byrd, William Byrd's Histories of the Dividing Line betwixt Virginia and North Carolina* (New York: Dover, 1967), Charles Woodmason, *The Carolina Backcountry on the Eve of the Revolution*, ed. Richard Hooker (Chapel Hill: The University of North Carolina, 1953), and J.H. St. John de Crevecoeur, *Letters for an American Farmer and Sketches of Eighteenth-Century America*, ed. Albert Stone (New York: Penguin, 1981), are abundant with descriptions of animal maroons.

[35] For examples see, Samuel Pepys, *The Diary*, Vol. 1, 73; Oliver Heywood, *The Rev. Oliver Heywood, 1630–1702*, Vol. 1 (Brighouse: A.B. Bayes, 1882), 265; *The Adams Weekly Courant*, January 20, 1767, in Morsley (ed.), 58; *The Reading Mercury*, August 15, 1796, in Morsley (ed.), 142; *The Weekly Dispatch*, August 22, 1802, in Morsley (ed.), 156; *The Weekly Register*, June 8, 1823, in Morsley (ed.), 223; *The Windsor and Eton Express*, February 14, 1833, in Morsley (ed.), 255. Finally, Judith Adkins, in her "Bodies and Boundaries: Animals in the Early American Experience," (Ph.D. diss., Yale University, 1998), explores the lives of two colonial American farmers, and their diaries are literally full of such descriptions of resistance.

[36] Neeson, 134–150; Ruth Herndon, " 'Breachy' Sheep and Mad Dogs: Troublesome Domestic Animals in Rhode Island, 1750–1800," in *New England's Creatures*, 66; Kalm, *Travels*, 51, 89, and 111; de Crevecoeur, 266; Adkins, 36; Jordan, 49–51; Robert Malcolmson and Stephanos Mastoris, *The English Pig: A History* (London: The Hambledon Press, 1998), 78–79.

workers. Likewise, the removal of horns (or "humbling" as advocates deemed it) had too become a standard operation by the mid-19th century.[37]

Again, if these additional methods failed, there was one final measure and that was capital punishment. The laws of the 17th and 18th century often allowed property owners to shoot any trespassers, and, if fact, many parishes and townships required the public hanging of criminal animals. In Lamport, for instance, Thomas Isham tells of a dog who wandered onto a fold, "… tore a lamb and was hanged for it (and good riddance)." The reverend William Bentley of Salem, Massachusetts reflected in his diary on "a wanton cow" who happened upon a farmer's property and was shot dead for the offense. John Eyelyn witnessed firsthand the public baiting of a horse who had killed his owner. In early 19th-century Cornwall, hens who did not produce enough eggs were flailed to death on Shrove Tuesday. Colonial farmer Joshua Hemsptead of New London, Connecticut summarized this attitude and punishment in a most lucid fashion:

> In the foren wee kiled my old Wild Cow yt hurt me 5 year ago Last may, with her head Runn att me & hit me on the mouth & beat down 5 or 6 of my Teeth & other Enormities then & there did against the Peace &c & to the great disquietude of the Neighborhood; for which She was Sentenced to be Shot to death the first time She was fatt …"[38]

THE FORMATION OF A COLLECTIVE CONSCIOUSNESS

When Joseph Proudhon formalized his conception of the working class, this 19th century anarchist did not hinder himself with categories of species. Under the Capitalist system, he witnessed that the exploitation of humans and other animals were interconnected. "Thus," the Frenchman realized, "the horse, who draws our coaches, and the ox who draws our carts produce with us, but are not associated with us; we take their product, but do not share it with them." "The animals and laborers whom we employ hold the same relation to us. Whatever we do for them, we do, not from a sense of justice, but out of pure benevolence." In many ways, this recognition of Proudhon was the result of a long struggle—a struggle for the rights of animals.[39]

The creation of the animal rights movement traces along side the historical avenues that we have explored herein. Burgeoning out of the urban centers, where the exploitation of animals was not only most visible but was accruing rapidly, our story begins in a world that had been turned up-side down by social revolution. This was England of the 1640s. The Levellers were calling for democracy. The Diggers were demanding the fair distribution of the land. John Milton actually proclaimed that it was not just the

[37] See Markham's various pieces on horse training. One of the earliest works which spoke to any large extent upon the actual operation of gelding and spaying is John Crowshey, *The Good-Husbands Jewel* (London: Printed for N. Ekins, 1636). Although it was really not until the mid to later 19th century that one finds entire treatises upon the matter, see A. Liautard, *Animal Castration* (New York: William Jenkins, 1884); or Frederick Hobday, *The Castration of Cryptorchid Horses and the Ovariotomy of Troublesome Mares* (New York: W.R. Jenkins, 1903); H.H. Haaff, *Haaff's Practical Dehorner; Or, Every Man his own Dehorner* (Chicago: Clark and Longley, 1868).

[38] E.P. Evans, *The Criminal Prosecution and Capital Punishment of Animals* (New York: Dutton, 1906); Herndon, 68; Kalm, *Kalm's Account*, 114; Stephens, 69, 189, 195, and 207; Isham, 81; William Bentley, *The Diary of William Bentley*, Vol. 1 (Gloucester: Peter Smith, 1962), 314; Evelyn, Vol. 2, 30; Morsley (ed.), 195; Adkins, 23.

[39] Pierre J. Proudhon, *What is Property? An Enquiry into the Principle of Right and of Government* (New York: Howard Fertig, 1966), 232–233.

people's right to overthrow a tyrant, it was their duty. Here, interconnected among such beliefs, stood the Pythagoreans.

Pythagoras was the eminent Greek mathematician from the mid-6th century BCE. It was upon a journey into Persia that he came under the influence of the doctrine of transmigration—a philosophy that teaches that all of the Earth's creatures are linked together proportionately by life, death, justice, and harmony. Thus, under such as system, Pythagoras learned to abstain from the consumption of flesh, a belief that he brought back to Greece. Over the succeeding centuries, other Europeans would adopt this ethical practice, and henceforth be called "Pythagorean."[40]

During the mid-17th century, this practice had grown so accepted that the Presbyterian Minster Thomas Edwards listed it amongst those "errors," "heresies," and "blasphemies" responsible for upsetting the social order. Edwards was quite correct in his assessment. Especially prevalent among Familists, Anabaptists, and Ranters, along with independents like Roger Crab, Pythagoreanism directly challenged the increasing exploitation of their "fellow-creatures," and thus opposed the nascent capitalist system—a system that depended upon the increasing exploitation of these same fellow creatures.[41]

This ethical tradition would survive the counter-revolution and continue into the 18th century. It would appear, for instance, among the English satirists. Writers like Alexander Pope, Richard Steele, Joseph Addision, and John Gay pointed out the hypocrisy involved in the ill-treatment of animals, and advocated instead the virtues of "tenderness," "compassion," and "humanity." It would be taken up by the early abolitionist Benjamin Lay. This Philadelphian saw no difference between the slavery of humans or that of other animals. Hence not only did he refuse to eat his fellow-creatures or wear clothing procured at the expense of another, Lay would not burden any horse—traveling only by foot and sowing his own food. The tradition would also make its impact among religious "free-thinkers," such as Jesuit Guillaume-Hyancinthe Bougeant, rector John Hildrop, and curate Richard Dean. Each of these individuals argued that, contrary to the theories of most natural scientists of the era, "beasts and birds" do have a "knowing Faculty," do have a "fluency of language," and will "have a Being in the Future, and partake in some Degree of those Benfits which shall be confessed after the universal Change."[42]

The next blossoming of Pythagorean consciousness came forth during the fermentative 1790s, and it would become more popular than ever before. Melded together with

[40] David Fideler, ed., *The Pythagorean Sourcebook and Library*, trans. Kenneth Guthrie (Grand Rapids: Phanes Press, 1987).

[41] Thomas Edwards, *Gangraena* (London: Printed for Ralph Smith, 1645/6), 20–21, 26–28, 34, 67, and 79–80; Jacob Bauthumley, *The Light and Darksides of God* (London: Printed for William Learner, 1650), 3; Andrew Hopton, ed., *The Declaration of John Robins and Other Writings* (London: Aporia Press, 1992); Lodowick Muggleton, *The Acts of Witnesses*, ed. T.L. Underwood (New York: Oxford University Press, 1999), chaps. VII–X; Roger Crab, "The English Hermit; Or, Wonder of his Age," in *The Harleian Miscellany*, Vol. 6 (London: Printed for Robert Dutton, 1810), 390–405; *Thomas Tryon, Some Memoirs of the Life of Mr. Tho. Tryon* (London: Printed by T. Sowle, 1705).

[42] Alexander Pope, *The Guardian*, ed. John Stephens (Lexington: University Press of Kentucky, 1982), No. 61; Richard Steele, *The Tatler* (Philadelphia: J.J. Woodward, 1831), 252–253; Joseph Addison, *The Spectator*, Vol. I, ed. Donald Bond (Oxford: The Clarendon Press, 1965), 489–497; John Gay, *Fables* (Barre: Imprint Society, 1970), 28–29; Robert Vaux, *Memoirs of the Lives of Benjamin Lay and Ralph Saniford* (Philadelphia, PA: Solomon Conrad, 1815); Guillaume-Hyacinthe Bougeant, *A Philosophical Amusement upon the Language of Beasts and Birds* (London: Printed for T. Cooper, 1739), 4; John Hildrop, *Free Thought upon the Brute-Creation*, Letter 2 (London: Printed for R. Minors, 1742), 72; Richard Dean, *An Essay on the Future Life of Brutes*, Vol. 2 (Manchester: Printed by J. Harrop, 1767), 2.

the decade's other proclamations of social generosity, such as the rights of man, woman, and children, the Jacobin John Oswald, for example, would appeal for "justice" and "mercy" on behalf of the persecuted animals in *The Cry of Nature* (1791). Bradford printer and revolution supporter George Nicholson wrote *On the Conduct of Man to Inferior Animals* (1797). Joseph Ritson, a London barrister and Anglo-Jacobin, later composed *Abstinence from Animal Food, as a Moral Duty* (1802). The New Church of Manchester, a sect of Swedenborgians, came to adopt Pythagoreanism, as well as stances against war, slavery, and capital punishment. In Philadelphia, the Quaker Joshua Evans continued Lay's abolitionist tradition: speaking out against both human and nonhuman slavery. Even in the veterinarian and medical sciences, John Lawrence came to advocate "the rights of beasts," and the physician Thomas Young argued for "the foundation of the *Rights* of animals."[43]

By the early 19th century, animal rights had become an *active* term. The first English laws acknowledging the rights of horses, soon followed by cattle, would advocated for and eventually passed in 1821. The first formal organization, dedicated solely to the cause of animal rights, was established four years later: the Society for the Prevention of Cruelty to Animals. The publication of animal-concerned literature exploded forth in vast numbers. Indeed, at the exact moment as the formation of the working-class, we see the formation of the first collective, organized movement for the rights of animals in modern history. This was no coincidence.[44]

As the centuries progressed, more animals than ever were plowing, drilling, mowing, and harvesting. More were ginning and crushing. More were transporting all of those materials down the roads and canals. More were carrying people to and fro. More were skidding and teaming lumber. More were hauling coal. More were supplying their flesh, eggs, and milk, and as the exploitation increased, so did the resistance to it—both by laboring animals and concerned humans. Furthermore, it would be a mistake to see these growing concerns only in isolation. Most of the above Pythagoreans and reformers saw that the socioeconomic exploitation was systemic—that is, humans and other animals were interconnected under this system, and thus to reform or abolish the exploitation of one, it must be done for the other as well. As Edward Thompson has

[43] John Oswald, *The Cry of Nature; Or, An Appeal to Mercy and to Justice on Behalf of the Persecuted Animals*, ed. Jason C. Hribal (Lewiston: The Edwin Mellen Press, 2000); George Nicholson, *On the Conduct of Man to Inferior Animals* (Manchester: G. Nicholson, 1797); Joseph Ritson, *An Essay on Abstinence from Animal Food, as a Moral Duty* (London: Richard Phillips, 1802); Joseph Metcalfe, *Memoir of Rev. WM Metcalfe, M.D.* (Philadelphia, PA: J.B. Lippincott, 1872); Joshua Evans, "Journal of Joshua Evans," in *Friend's Miscellany*, Vol. 10 (Philadelphia, PA: J. Richards, 1837); John Lawrence, *A Philosophical and Practical Treatises on Horses, and on the Moral Duties of Man Towards the Brute Creation*, Vol. 1 (London: Printed for T.N. Longman, 1796), 119; Thomas Young *An Essay on Humanity to Animals* (London: Printed for T. Cadell, 1798), 2.

[44] For descriptions of these laws or the SPCA see Richard Ryder, *Animal Revolution: Changing Attitudes towards Specieism* (Oxford: Basil Blackwell, 1989), 83–92. For the popularizing of "root-eating" during the early 19th century, see H. Wyndham, *William Lambe, M.D.: A Pioneer of Reformed Diet* (Adelphi: London Vegetarian Society, 1940); John Newton, *A Return to Nature; Or, a Defense of the Vegetable Regimen* (London: Printed for T. Cadell, 1811); Percy Shelley, "A Vindication of Natural Diet," in *Shelley's Prose*, ed. David Clark (Albuquerque, NM: University of New Mexico, 1954). For the more interesting of the mass literature of the time, see Joseph Taylor's explorations of the emotional lives of animals: *The Wonders of the Horse* (London: Printed by Darton, 1808); Taylor, *Ornithalogia Curioso: Or, the Wonders of the Feathered Creation* (London: Printed for Lackington, Allen, 1807); Taylor, *Anecdotes of Remarkable Insects* (London: Printed for Baldwin, Cradock, and Joy, 1817); Taylor, *The General Character of the Dog* (London: Darton and Harvey, 1804); or see the children's book: *The Hare; Or, Hunting Incompatible with Humanity* (Philadelphia: Johnson, 1802).

argued, "every class struggle is at the same time a struggle over values." The above revolutionaries, satirists, freethinkers, and abolitionists had, in fact, come to adopt a higher proletarian consciousness. The key word here being *proletarian*. Pythagoreanism was not an English peasant movement. The commoners were, during this time, still trying to operate in a quasi-subsistence economy, and thus they held their own unique forms of social relations with other animals. Rather, Pythagoreanism was born out of class struggle, arising from the proletarianization of human and nonhuman alike. The early 19th century labor-activist Samuel Bamford understood this, as he also supported the rights of "the dog, the steer, and the horse." So too did the Chartist Thomas Cooper. The animals rights movement was part of the working class movement, for their formations had always been linked. Animals are part of the working class.[45]

[45] Samuel Bamford, *The Autobiography of Samuel Bamford*, Vol. 1 (London: Frank Cass, 1967), 39–40; Thomas Cooper, *The Life of Thomas Cooper* (New York: Leicester University, 1971), 393; E. P. Thompson, "The Poverty of Theory," in *The Poverty of Theory and Other Essays* (London: Merlin Press, 1991), 363.