

**The Herds Shot Round the World: Native Breeds and the British Empire, 1800-1900**

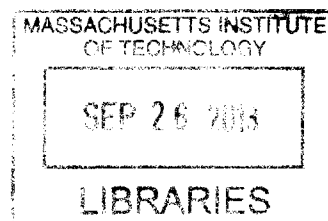
by

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Submitted to the Program in Science, Technology, and Society  
in Partial Fulfillment of the Requirements for the Degree of

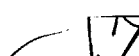
Doctor of Philosophy in History, Anthropology, and Science, Technology and Society  
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# **The Herds Shot Round the World: Native Breeds and the British Empire, 1800-1900**

by

Rebecca J. H. Woods

Submitted to the Program in Science, Technology, and Society on June 23, 2013, in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in History, Anthropology, and Science, Technology and Society

## **Abstract**

This dissertation explores the relationship between types of livestock and place in the context of Great Britain's expanding agro-pastoral empire. Specifically, it examines how the distribution and circulation of breeds of livestock native to the British Isles influenced understandings of kind and location—of the dynamic interaction between heredity, human influence and environmental conditions, and their various fluid effects on ovine and bovine diversity. Drawing on extensive archival work in the United Kingdom, New Zealand, and Australia, I trace both the national origins and imperial expansion of British breeds. As Britain industrialized in the early nineteenth century, breeders faced the need to convert the specificity of their animals into fungibility while maintaining the distinctive character of their breeds, seemingly incompatible aims that nonetheless guaranteed the economic viability of their stock. Thus they reoriented local variability towards market standardization, transforming regional types of cattle and sheep into geographically transposable, bulky, and quick-fattening beasts suited for increasingly sophisticated economies and industrialized production. Tension between standardization and specialization shaped the dispersal of breeds throughout the empire as well. Here, stockbreeders served two masters: the unfamiliar climates and topographies of Australia, New Zealand, and North America, which demanded local adaptations, and the British consumer, whose dinner table was the end of the line for the bulk of colonial beef and mutton. As they tried to balance local adaptation and metropolitan taste, breeders experimented with heredity, testing the limits of contemporary understandings of heritability and breed plasticity, and developed of new strains of livestock genetically derived from British breeds, but culturally, economically and environmentally hybrid. In the process, imperialism itself was instantiated in these animals. Bodies of sheep and cattle were remade to suit new lands and later to fill the refrigerated holds of ocean liners. The empire itself was recast as a vast apparatus for feeding Britons. This system, divested of its imperial trappings and disseminated still further, brings meat to tables around the world today.

Thesis Supervisor: Harriet Ritvo  
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## Introduction

In 1949, the Earl of Halifax graced a promotional handbook on British breeds of livestock with an elegantly-written forward praising the “unsurpassed” skill of British breeders when it came to “the production of animals of the highest class.”<sup>1</sup> He himself had seen how pervasive were the effects of British breeds on world pastoral production: “Both in Eastern and Western Hemispheres,” he wrote, “I have seen live stock from Britain in new homes and in surroundings very different from those in which they were bred and reared.”<sup>2</sup> The wonderful versatility of British breeds was, by Halifax’s lifetime, well known. Writing in the aftermath of World War II, he claimed that the “performance of British bloodstock was a matter familiar throughout the world a century ago.”<sup>3</sup> Certainly by the close of the nineteenth century, British breeds of livestock seemed to have conquered the world. Lincoln Longwool sheep grazed happily on the Canterbury plains of New Zealand, while Hereford bulls thrive as well on the rough scrubland of Queensland, Australia and the snow-covered pastures of Western Canada, as they did on the green pastures of their native

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<sup>1</sup> Halifax, “Forward,” in *Britain Can Breed It* (London: Farmer and Stockbreeder, 1949), p. 5.

Herefordshire. These breeds dominated a system of pastoral economies in which Britain's appetite for meat and capitalism's appetite for profit drew people, animals, and terrains into a tightening web of production. Their ubiquity was part of a mode of livestock production that came to dominate what is now the developed world. Producing meat for British tables occupied colonies proper, but it also pushed beyond the boundaries of territories under formal British control, incorporating already post-colonial nations like the United States, Argentina and Chile. It motivated continued expansion into the interior of Australia and the Canadian west. Everywhere, it justified inundation of colonial lands by European settlers and the concomitant displacement of indigenous people; the rhetoric of pure breeds, like that of racial purity, provided a discursive analogue for physical control. In the process, imperialism itself was instantiated in the bodies of these animals. Cattle and sheep were reshaped to suit new lands and later to fill the refrigerated holds of ocean liners, and the Empire itself was recast a vast apparatus for feeding Britons.

This dissertation traces the arc of these developments through the changing fortunes of livestock breeds, which ebbed and flowed with the evolving conditions of the global livestock industry. It locates the germ of a nearly global system of imperial production in the dislocation of regional and sub-regional breeds of livestock within the British Isles. Though small in acreage, its topographical diversity made Great Britain uniquely suited to produce a "wonderful" variety of livestock through the alchemy of its "physical conditions" and the "skill of breeders in having developed numerous types to suit the

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<sup>2</sup> Ibid.

<sup>3</sup> Ibid, p. 5.

varying requirements of soil, climate, and food.”<sup>4</sup> As Britain industrialized in the early nineteenth century, and with the enthusiasm for “improvement” borne of the previous century’s agricultural revolution, breeders refashioned these locally diverse types in the service of modernizing markets. Wool-bearing sheep that had trod the ancient sheep walks from Lincolnshire to London were selectively rebred for meat as well as wool.<sup>5</sup> Cattle that had once served the three-fold purposes of meat, milk, and labor began to be raised exclusively for milk or meat as draft horses replaced them in front of the plow. Pedigrees—the detailed genealogical records of purebred stock—enabled the circulation of stock, serving as both exchange value and as a guarantee of quality.

As the nineteenth century progressed and these purebred stock breeds moved still farther from their local points of origin, diversity of type diminished. Improving breeds specialized them for production but paradoxically, it de-specialized them in a geographical sense. Honing sheep and cattle for the market eliminated extreme difference—whether in weight of fleece, bodily shape, character or temperament. Breeders worked towards a standard market type that was specialized to maximize profit, whether by wool or by meat. As these breeds circulated beyond their former regional bounds, what had been native in a local sense became “native” to all of Great Britain. Standardized breeds, discourse surrounding breeding and butchering, and the consumption of mutton, beef, and lamb sold as English, Scotch or Welsh, contributed to the development of a national taste for meat,

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<sup>4</sup> A. H. Archer and James Sinclair, *Domestic Breeds and their Treatment* (London: Vinton and Co., 1896), p. 11.

<sup>5</sup> Classic works in agricultural history are still the standard body of literature for this period. See, especially, Nicholas Russell, *Like Engend’ring Like: Heredity and Animal Breeding in Early Modern England* (Cambridge: Cambridge University Press, 1986); Robert Trow-Smith, *A History of British Livestock Husbandry, vol. 2 1700-1900* (London: Routledge and Keegan Paul, 1957); and also Harriet Ritvo, *The*

one that had a long history, but that could now be gratified by new, sophisticated forms of market production. The intimate connection between breeds and soil weakened, and the newly-formed national identity of Britons was instantiated in national breeds.<sup>6</sup> By mid-century, the tension between standardization and specialization embodied in British breeds defined the system of meat production that fed Britain, and that would eventually feed the Empire.

The second part of this study follows the herds and flocks of the British Isles out into the Empire, tracing the same tension between standardization and specificity in the livestock and landscapes of colonial Australia and New Zealand. In the 1860s and 1870s, the imperial stage offered more varied terrain upon which heredity, economic engagement, and cultural adaptation played out. Greater variation in climate, soil, and vegetation had important physiological effects on livestock, offering at once a greater challenge to breeders and the opportunity to standardize on a grander scale. Discursively, too, this move beyond the shores of the British Isles had important effects. The fine distinctions in type that marked breeds within Britain were less rigorously pursued in the colonies, where pure-breeding operated exclusively in the service of colonial profits. Increasingly, it became sufficient to distinguish between animals that originated in the imperial center, on the one hand, and types of livestock imported by previous colonial powers (as in North and South

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*Animal Estate: The English and Other Creatures in the Victorian Age* (Cambridge, Mass: Harvard University Press, 1987).

<sup>6</sup> On the formation of national identity in Great Britain, see, for example, Linda Colley, *Britons: Forging the Nation, 1707-1837* (New Haven: Yale University Press, 1992); Peter Mandler, *The English National Character: The History of an Idea from Edmund Burke to Tony Blair* (New Haven: Yale University Press, 2006). With respect to food and nationality in particular, see Yuriko Akiyama, *Feeding the Nation: Nutrition and Health in Britain before World War One* (London and New York: Tauris Academic Studies, 2008); as seen through the lens of Victorian literature, Linda Schlossberg, "Feeding the Nation: Food, Hunger and British Identity," unpublished PhD. thesis, Harvard University (1998).

America), imports of a different origin (such as the Spanish merino in Australasia), or “low-bred” local types in places like South Africa where livestock were already endemic, on many other hands.<sup>7</sup> In such far flung places, the Earl of Halifax could claim that “improvement [had] actually been brought about by the introduction of British breeds.”<sup>8</sup>

Livestock animals had long been an integral component of imperial expansion, but in the second half of the nineteenth century, their role in the Empire evolved as transport technologies offered closer contact with the metropole, while engineers and innovators in Britain and the colonies refined techniques for preserving meat.<sup>9</sup> The most important of these was artificial refrigeration, which meant that butchered meat could be preserved almost indefinitely, and transported great distances with minimal risk or loss. At the same time, breeding techniques and heredity theory enabled greater control over the physiological attributes and adaptations of livestock animals. Where four-footed émigrés had once been plunked down in unfamiliar environments and left to adapt and evolve to their new conditions away from their parent stock, they now maintained constant contact, through the steady and continuous transfer of pedigree breeding stock from Great Britain to the colonies.<sup>10</sup> The circulation of pedigree stock and the reciprocal return of frozen meat were both made possible by modern transportation technologies: steamships plied the

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<sup>7</sup> For example, William Beinart, *The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770-1950* (Oxford and New York: Oxford University Press, 2003).

<sup>8</sup> Halifax, “Forward,” p. 4.

<sup>9</sup> This is well recognized in the literature on empire and environment. See, for instance, Alfred Crosby, *Ecological Imperialism: the Biological Expansion of Europe, 900-1900* (Cambridge UK and New York: Cambridge University Press, 1986); Virginia DeJohn Anderson, *Creatures of Empire: How Domestic Animals Transformed Early America* (Oxford UK and New York: Oxford University Press, 2004); Elinor Melville, *A Plague of Sheep: Environmental Consequences of the Conquest of Mexico* (Cambridge UK and New York: Cambridge University Press, 1994).

oceanic empire, keeping the flow of animal capital—alive or dead—moving. These developments combined to produce “the establishment of vast chilling organisations in all parts of the world,” which Britons were sure brought “incalculable benefits...to the human race as a whole.”<sup>11</sup>

Constant communication between metropole and colony also meant continuous access to metropolitan markets, and here, colonial stockbreeders served two masters: the unfamiliar climates and topographies of Australasia and the tastes of the British consumer, whose dinner table was the end of the line for the bulk of colonial beef and mutton. As they tried to balance local adaptation and metropolitan taste, breeders experimented with heredity, testing the limits of nineteenth-century understandings of heritability and breed plasticity. They simultaneously created breeds of livestock they touted as ideally suited to their new surroundings, and identities for themselves as innovators at the forefront of agricultural improvement. They developed new strains of livestock like the Corriedale sheep of New Zealand, genetically derived from British breeds, but culturally, economically, and environmentally hybrid. Colonial breeds embodied the tension between local environments and imperial demands: their hybridity guaranteed suitability for colonial topography and terrain, while their genetic roots ensured that they remained British enough for metropolitan consumers.

Imported British breeds also served as tools for understanding new climates.

Observing, monitoring, and analyzing how British breeds fared in new lands became a

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<sup>10</sup> Margaret Derry explores this in a detailed case study of Shorthorn cattle breeders in Ontario. Margaret Derry, *Ontario's Cattle Kingdom: Purebred Breeders and their World, 1870-1920* (Toronto: University of Toronto Press, 2001).

<sup>11</sup> Halifax, “Forward,” p. 5.

mechanism for understanding the nature of a place—its soil composition, its vegetation, its seasonal patterns and meteorological characteristics. “Scientific” crossbreeding offered the means to match livestock to land: the careful, judicious blending of qualities of one breed with those of another enabled colonial pastoralists to create their own “native” local types. At the same time, tacit knowledge about place thus accumulated also incited colonial breeders to attempt to “improve” their lands in favor of their imported breeds by burning or draining lands, re-sowing pastures, and planting windbreaks.<sup>12</sup> Not only a means to understanding environment, breeds were also a justification for altering them. The reality of imperial production dispersed to the four corners of the globe not only standardized breeds, it standardized places, eroding local distinctions.

At issue are ideas about place, environment, and climate, and the ways in which they were understood to mold the bodies of living beings. Such notions in turn shaped understandings of “nativeness,” a descriptor of some consequence. Assigning someone or something to the category of “native” could either justify or delegitimize its presence in a given place. This was relevant in Britain, where being “native” intersected with ideas about nationhood and citizenship in ways that influenced what labels like British, Welsh, English, and Scottish meant, and how they were deployed. It carried even more weight in the colonies where Europeans were continually under pressure to legitimize their own presence, especially in the face of indigenous—that is, “native”—people with obvious prior claim. Acclimatization—the idea that climate and environment effected lasting

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<sup>12</sup> Both the tendency to view colonial terrain as an opportunity for “improvement,” and the manifold techniques employed to achieve this end, are the subject of the collection of essays in Tom Brooking and Eric Pawson, *Seeds of Empire: The Environmental History of New Zealand* (London and New York: I.B. Tauris,

change on transposed organisms—was significant here because it suggested that people and animals of European descent could, over time, become native to colonial places.<sup>13</sup>

While in some ways, the colonial endeavor itself depended on at least the possibility of colonists gaining a native claim to their appropriated lands, in other ways naturalization was not always a desideratum. The perceived cultural and physiological changes that individuals of European descent underwent in the colonies was called creolization in Europe, and although it bore resemblance to ideas about acclimatization and environmental naturalization, it encompassed a broader process of transformation in response to cultural and economic, as well as climatic, conditions. Almost invariably, it carried a negative connotation, and the suggestion that any kind of alteration in response to colonial circumstances was a form of deviation, and by implication, degeneration, from a European norm.<sup>14</sup> The stakes of these discourses may have been highest with respect to people, but

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2011). See also Brooking and Pawson, *Environmental Histories of New Zealand* (Oxford and Melbourne: Oxford University Press, 2002).

<sup>13</sup> These debates were rooted in Lamarckian ideas of inheritance, in which environmental adaptations believed to be transmissible from generation to generation were understood to account for speciation and biogeography. See Ludmilla Jordanova, *Lamarck* (Oxford and New York: Oxford University Press, 1984); Christopher Lever, *They Dined on Eland: The Story of the Acclimatisation Societies* (London: Quiller Press, 1992); Janet Browne, *The Secular Ark: Studies in the History of Biogeography* (New Haven: Yale University Press, 1983). Michael A. Osborne, *Nature, the Exotic, and the Science of French Colonialism* (Bloomington: Indiana University Press, 1994).

<sup>14</sup> A vast literature around the issues of acclimatization and creolization exists. However, most studies of the former focus on the experience of transposed exotic plants and animals, or on European people in colonial environments. Very few look at explicitly at European varieties of livestock in colonial places. See, for examples, Pascal Grosse, "Turning Native? Anthropology, German Colonialism, and the Paradoxes of the 'Acclimatization Question,' 1885-1914," in *Worldly Provincialism: German Anthropology in the Age of Empire*, edited by Matti Bunzl and H. Glenn Penny (Ann Arbor: University of Michigan Press, 2003); Warwick Anderson, *The Cultivation of Whiteness: Science, Health and Racial Destiny in Australia* (Chapel Hill: Duke University Press, 2006); Anderson, "Climates of Opinion: Acclimatization in Nineteenth-Century France and England," *Victorian Studies* 35, no. 2 (Winter, 1992), pp. 135-57; Lever, *They Dined on Eland*. Creolization is well understood and delineated as a cultural referent, especially regarding colonial Latin America (cf. Jorge Canizares-Esguerra, "Creole Colonial Spanish America," in *Creolization: History, Ethnography, Theory*. Edited by Charles Steward (Walnut Creek, CA: Left Coast Press, 2007)), the context in and for which it was first employed. Few studies have used it to analyze the Anglo colonial experience (exceptions to this are Joyce E. Chaplin, "Creoles in British America: from denial to acceptance," in



how they applied to breeds of livestock in the nineteenth century was by no means inconsequential. When colonial sheepmen, for instance, debated the suitability of British breeds for New Zealand's climate and conditions, they called out for "some native breeds, which shall not need to go through a course of acclimatisation,"<sup>15</sup> their terms of reference evoking the difficulties that humans experienced when transposed to strange environments.

Chapter One poses the central question of the dissertation—at what point, if any, does a breed, transplanted to a novel environment evolve or adapt enough in response to its new ecological and cultural setting to become something distinct from what it was?—through an examination of the case of an unusual archaic type of sheep known as the Soay, which were targeted for conservation in the mid-twentieth century. The history of Soay sheep encapsulates the trajectories of imperial British breeds in microcosm: removed from their native island home in St Kilda, a small cluster of rocks at the farthest edge of the North Atlantic continental shelf, groups of Soays were transplanted throughout Scotland, Wales, and England as insurance against extinction, prompting conservationists to question whether the breed, divorced from its native land, would remain the same in a novel setting.

This query echoed the concerns of earlier generations of livestock breeders, for whom questions of the relative influence of human handlers, on the one hand, and climate

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*Creolization: History, Ethnography, Theory*; and Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation* (London: Routledge, 1992)), and fewer to understand the history of imperial livestock.

<sup>15</sup> "Cross-Bred Sheep," *NZ Country Journal* 1, no. 4 (October 1877), 269. Originally published in the *Southern Mercury*.

and environment on the other, were similarly open-ended. In the late eighteenth century, breeders enthusiastically relocated various types of sheep and cattle from one part of the United Kingdom to another, prompting them to reflect on the degree to which a seemingly fixed type was susceptible to the effects of human intervention as well as environmental considerations. This activity gathered pace in the third quarter of the eighteenth century as a spirit of improvement motivated inquiry into all matters agricultural, including the herds and flocks of the British Isles. Agricultural reportage stimulated interest in, and recognition of, the great variety of breeds in different localities throughout England, Scotland, and Wales at just the time that enterprising breeders were “improving” their stock, selecting for early maturity and high yields. In the enthusiasm that ensued for these novel animals, the influence of these types spread far and wide as breeders crossed their existing stock with improved varieties like Robert Bakewell’s New Leicester Longwool. Combined with a form of patriotism that drew explicit links between agricultural production and the glory of Great Britain, these efforts, though controversial and to some extent limited by the constraints of climate and ecology, helped to lay the foundations for a national taste for British meat.

Chapter Two picks up the meaning of “native” breed in the context of the failed attempts to naturalize the Spanish merino in Great Britain in the 1810s. As breeds were standardized in the early nineteenth century, sheep breeders increasingly responded to demand for more and more varied types of wool, and especially to growing demand for very fine fibers that could be woven into soft, luxurious cloth. Without doubt, the best breed of sheep for producing such fine wool was the merino, whose origins lay with the

ancient pastoral economy of Spain. Consequently, agricultural improvers, under the aegis of George III himself (known as Farmer George for his enthusiasm for agricultural pursuits) avidly promoted the Spanish breed's adoption in Britain.<sup>16</sup> But producing merino wool in England was not as straightforward as simply raising merino sheep on English soil and waiting for the fleece to grow.

Merino sheep are extremophiles, lovers of scorching heat or freezing cold, but of little in between. While they thrived as introductions to Great Britain's recently acquired Australian colonies during this same period, they were almost spectacularly ill-suited to the relative mildness and perpetual damp of the British Isles. Efforts to acclimatize them there ran up against the limits of physiology and the effects of climate, but they also offended the sensibilities of dyed-in-the-wool champions of English "native" breeds. Detractors railed against the merino's unsightly form and unappealing foreign flesh, apparently anathema to the British taste in meat—while its proponents defended merino mutton, declaring their preference to be more refined than that of the uncouth supporters of dedicated mutton breeds. Ultimately, champions of the Spanish breed lost on all fronts, culturally and economically, as merino wool quite literally deteriorated in the climate of the British Isles, becoming heavier and coarser in defense against the damp and rain, while the breed's stubborn foreign carcass withstood all the best efforts to transform its alien aspects. Efforts to produce an English sheep in a Spanish clothing failed. The tastes of Britons and the climate of their island home prevailed. The fate of the merino in Great

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<sup>16</sup> H. B. Carter, *His Majesty's Spanish Flock: Sir Joseph Banks and the Merinos of George III of England*. Sydney: Angus and Robertson (1964).

Britain became an object-lesson on the power of climate and the limits of human virtuosity.

Chapter Three pursues the idea of a native breed in the context of pedigree cattle breeding in the first half of the nineteenth century, by examining its changing significance for the Hereford breed of cattle. Named for their native county of Herefordshire, situated on the Welsh border, the Hereford proved remarkably able to thrive across a range of environmental conditions, systems of production, and market imperatives. Initially it was known as a hardy, multipurpose breed accustomed to spending years in front of the plow before making its way to the butcher's, and until the middle of the nineteenth century, a rather uncouth variety, especially compared to such improved breeds as the Shorthorn.<sup>17</sup> But with the ascent of techniques of improvement—which included pedigree record-keeping, published herd books, and official breed societies, as well as careful selection and, in this case, intensive inbreeding—"purity" became the watchword of cattle breeding.

Against the "improved" Shorthorn, the benchmark for nearly all things bovine in the nineteenth century, the Hereford now seemed wanting. Its native connection to the county of Herefordshire became a way for proponents of the breed to claim purity of descent in absence of an official herd book, through geographic localization and its presumed connotation of antiquity. When this metric proved insufficient, homogenizing the breed's phenotype, which historically had varied from speckled to dove-gray to all red, into a white-faced, red bodied type, became a visual signifier of consanguinity. These metrics were necessarily artificial and demonstrably fabricated, but this did not detract from their

utility. It merely reflected the artificial and fabricated nature of purity itself, and not even the pedigree—the published genealogy of any “thoroughbred” animal—could ensure the desideratum against its own illusory character.

As Herefords became more refined, they increasingly shed their identity as a “native” county breed. As they, and other types of cattle and sheep, began to be exported from Great Britain in greater and greater volume, these erstwhile local varieties also took on the label of “British.” With the expanded scope for breeding and production that the imperial domain presented, “British” became an important qualifier for breeds of livestock, denoting not only geographical origins but also, as stock breeders would have it, serving as a guarantee of excellence. At home, too, this kind of signification was important. With growing prosperity in the nineteenth century came an increase in the British national appetite for meat, and Herefords—along with several other breeds—became synonymous with the “roast beef of Old England,” a supposed culinary tradition whose significance to the social, political and environmental histories of Great Britain (and, indeed, the British Empire) cannot be underestimated. At the same time English, Scottish and Welsh remained important signifiers, although, like British, ones that were increasingly employed in reference to type rather than to location. They came to indicate particular attributes (like hardiness, in the case of Welsh, or meatiness, as was often the case for Scottish), and they remained especially relevant on the market and at the butchers where they delineated important distinctions in value. With a burgeoning middle class, it became increasingly important to educate people’s tastes in all areas of cultural and commercial consumption.

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<sup>17</sup> E. Heath-Agnew, *A History of Hereford Cattle and their Breeders* (London: Duckworth, 1983). See also Harriet Ritvo, *The Animal Estate: The English and Other Creatures in the Victorian Age* (Cambridge:

The British nation's taste for beef was produced at the same time as breeds like the Hereford were "improved," the two phenomena (taste and breed) developing in tandem, as commercial and social factors, particularly increasingly sophisticated merchandising and cheapening costs of production, contributed to the rise of the Sunday roast as a venerable institution.

By the third quarter of the nineteenth century, questions about the degree to which environment, climate, and now national origins could be embodied in a breed were now playing out in the colonies. Chapter Four explores these dynamics in New Zealand, where *Ovis aries* was the dominant domesticated species in the colonial pastoral economy. With neighboring Australia, it was an important producer of wool for British manufacturing, and until the 1890s, merino sheep predominated throughout Australasia. As global wool prices fluctuated with dramatic intensity from the 1860s on, though, producers soon sought to diversify the products they could extract from their flocks. The ovine population of New Zealand far outnumbered potential human consumers, and this problem of surplus meat only intensified as profits from wool plummeted. Colonial breeders became desperate to find an outlet for their mutton. Refrigeration technology, coupled with steam-powered shipping, offered a way out of this economic impasse. It meant that Australasia's ovine surplus could be sent, in frozen form, to satisfy the demand for meat in Great Britain, whose appetite, with its population, had been growing throughout the third quarter of the nineteenth century.<sup>18</sup> Together these spurred the development of new breeds in New Zealand, colonial hybrids that bridged the realities of environmental and economic

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Harvard University Press, 1987), pp. 45-81, for pedigree Shorthorn breeding in the nineteenth century.

conditions in the colonies, and the demands of British consumers, whose preference for British meat had changed little since the rejection of merino mutton in the 1810s.

In this, superficial resonance with the British Isles in climate and topography served New Zealand well. These temperate islands resembled the British Isles to a certain extent, making the transposition of British meat breeds like Lincoln Longwools, Southdowns, and Romney Marsh sheep a success, but native flora and topography, as well as rudimentary transportation networks and the entrenched wool economy, complicated growing British mutton on New Zealand's soils.<sup>19</sup> A large proportion of the colony's flocks were to some degree merino. And New Zealand's climate was more extreme than the temperate British Isles. Strong winds buffeted its steep hills, the heat and sun of summer as well as the chill of winter often more intense than England's. Breeders had to battle against their flocks' tendencies to adapt to these conditions if they wanted their meat to remain British. In this fight, steam technology was their ally, the constant contact enabled by the networks of oceanic steam transport enabling them to resist the uncontrolled creolization of their sheep with regular infusions of breeding stock from Great Britain.<sup>20</sup>

The access to British metropolitan markets that this technology granted also shaped the development of colonial sheep breeds, which needed to satisfy the two-fold (and sometimes contradictory) requirements of the climates and topographies of Australasia, on

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<sup>18</sup> E. J. T. Collins, "Food Supplies and Food Policy," in *The Agrarian History of England and Wales*, edited by J. Thirsk, VII, (i), 1850-1914 (Cambridge: Cambridge University Press, 2000), pp. 33-71.

<sup>19</sup> Robert Peden, "Pastoralism and the Transformation of the Open Grasslands," in *Seeds of Empire*, edited by Pawson and Brooking, pp. 73-93.

<sup>20</sup> Recent work by James Belich and Frances Steel examine the importance of steam transport to Australasian colonization, Steel for the role it played in stimulating the development of a regional identity for "Oceania," Belich for its reinforcement of wider imperial ties. Frances Steel, *Oceania Under Steam: Sea Transport and the Cultures of Colonialism, c. 1870-1914*, Manchester: Manchester University Press (2012); James Belich,

the one hand, and the tastes of British consumers, on the other. The solution was to create colonial breeds out of existing stock of British and merino extraction by crossing the rams of heavy mutton breeds like Lincoln Longwools or Romney Marsh sheep with merino ewes, and then rigorously inbreeding successive generations for desired characteristics. The desideratum in this endeavor was the combination of fine wool and meaty carcass—the very blend of traits that had so frustratingly eluded naturalizers of the merino sixty years earlier in Great Britain. Unlike in the British Isles, the climate of New Zealand aided colonial breeders, and the outcome was the production of both “new” breeds and colonial versions of existing one. For instance, the Corriedale, born of a Lincoln-merino cross and especially suited to the expansive, dry grasslands of New Zealand’s South Island, was promoted as “New Zealand’s own,”<sup>21</sup> while “New Zealand Romneys” retained discursive and physiological resemblance to their parent breed, combining a fleece with much of the fineness of merino wool, but maintaining the characteristic resistance to the ill effects of wet land developed in Lincolnshire and the waterlogged fens in the east of England—a trait that proved useful in the more humid, subtropical reaches of the North Island. Such breeds embodied the tension between colonial environments and imperial demands: their hybridity guaranteed suitability for colonial topography and terrain, while their genetic roots ensured that they remained British enough for metropolitan consumers.

Yet the conditions that allowed for the expansion and dominance of British breeds were contingent upon a particular set of historical circumstances—the technological,

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*Replenishing the Earth: The Settler Revolution and the Rise of the Anglo-World, 1783-1939* (Oxford UK and New York: Oxford University Press, 2009), pp. 107-109



economic, and environmental conditions that shaped imperial agro-expansionism in the third quarter of the nineteenth century. Without them, the fate of purebred British domesticates was very different. Chapter Five picks up this theme in the twentieth century, when the Rare Breeds Survival Trust, Britain's flagship breed conservation organization devoted to the preservation of rare or endangered types of livestock, chose the "Traditional" Hereford as the poster breed for a new initiative to rescue "native" British types from decimation in the face of imported foreign varieties and their mobile genetic material, which conservationists feared might work its way into the genome of pure British breeds by over-enthusiastic crossing. Unusual among other types of British cattle, the greatest risk the Traditional Hereford faced was from re-imported erstwhile colonial varieties of its own breed. Beginning in the 1970s, breeders began to notice a change in their preferred variety when foreign-bred Herefords began to be imported to Britain with great enthusiasm.<sup>22</sup> Reared primarily in Canada, but also in the United States and Australia, to thrive under the highly routinized conditions of modern industrial meat production, these formerly colonial cattle were taller, meatier, and faster to reach maturity than the short-legged and hardy but slow-maturing English Hereford. In danger of complete obliteration under the tidal wave of Canadian Herefords, proponents of the English type took steps to defend their preferred, "pure English" type—the Traditional Hereford, or those cattle whose entire lineage could be traced to individuals bred only in the British Isles.

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<sup>21</sup> The phrase is borrowed from *The Corriedale, New Zealand's Own Breed: History of Development* (Christchurch, NZ: Corriedale Sheep Society, 1936). See also G. H. Holford, *The Corriedale: New Zealand's Contribution to the Sheep World* (Christchurch, NZ: Corriedale Sheep Society, 1924).

Conditions for the breed's redefinition as a "native" British type, and for its subsequent conservation as such, were set in the late nineteenth century when the desire to "grade up" the mongrel hordes of cattle in North (and later in South) America created a vigorous export market for pedigreed Hereford bulls. Driven in large part by the need to raise the quality of American beef for export back to Britain, the suitability of the Hereford for "new world" crossbreeding industries rested on its particular balance of transposability and adaptability. The breed possessed an unusually strong "character." It seemed to retain its desired traits and characteristics under nearly any conditions, yet it could subsist as comfortably under the harsh conditions of a Canadian winter as those of a subtropical summer, making it a popular choice for extensive ranching throughout North and South America, and Australia.

Such enthusiasm for the Hereford in the United States, Canada, Argentina, and Australia ultimately produced a great reservoir of Hereford "blood" beyond Britain's shores, and it was from this multitude of expatriot cattle that the threat to "pure English" or "Traditional" Herefords came at the close of the twentieth century. By redrawing the boundaries of the breed so as to distinguish between native and non-native strains, conservationists and enthusiasts of the former implicitly privileged environmental factors over shared genetic roots. Time spent outside Britain and in the hands of unfamiliar breeders, not common origins in nineteenth-century British stock, came to define the re-imported former colonial varieties.

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<sup>22</sup> This chapter is based on oral history interviews conducted with Traditional Hereford Breeders in England in 2009-10, as well as on archival research.

The technological, economic, and cultural complex that grew up around the imperial production of livestock spanned oceans and crossed hemispheres, redistributing biota, reshaping diets and terrain, and producing new cultural expressions that were central to the imperial experience for metropolitan Britons and colonists alike. As purebred livestock flowed out of Britain to “Anglo wests” in the nineteenth century,<sup>23</sup> imperialism itself was instantiated in the formation of new breeds for unfamiliar lands and novel modes of production; it was produced and consumed in the form of lamb chops and sirloins raised in the peripheries and returned to the metropole. Such a system depended on the assumption that almost limitless expansion into seemingly infinite lands was possible, a kind of hubris apparent in many instances throughout the history of the British Empire, but whose moment was the late nineteenth century. The ability of domesticated livestock to survive in new lands, on the one hand, and human capabilities to modify or redirect the course of adaptation on the other, bolstered this presumption, while ever more clever technological capacities for transporting and preserving meat made it possible, redrawing temporal and geographical limits as coal-powered transport and refrigeration compressed time and foreshortened distance.<sup>24</sup>

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<sup>23</sup> Belich offers this term as the successor to Alfred Crosby’s theory of “neo-Europes” and their role in establishing European imperialism in the early modern era, and as a way to highlight the significance of British people, culture, capital investment, etc., in the expansion of the “Anglo world,” and its “divergence” from other large scale socio-cultural formations (such as the “Sino world”), in the nineteenth century. Belich, *Replenishing the Earth*; Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900-1900* (Cambridge: Cambridge University Press, 2004 [1986]). For a similar argument in the American context, see Richard White, *Railroaded: The Transcontinentals and the Making of Modern America* (New York: W. W. Norton, 2011).

<sup>24</sup> This argument is made forcefully by Wolfgang Schivelbusch, *The Railway Journey: The Industrialization of Space and Time in the Nineteenth Century* (Berkeley: University of California Press, 1986).

Some native British breeds were winners in this history, others were not. Once ubiquitous features in pastures from Lincolnshire to Argentina, from New Zealand to North America, in some cases breeds that dominated at the turn of the twentieth century today number globally in the mere thousands. Erstwhile exemplars of cutting-edge agricultural technology, these breeds, like the Traditional Hereford, are now the targets of conservation efforts by organizations devoted to preventing the extinction of “rare” or “endangered” traditional breeds of livestock. Whether or not the genome of a breed could withstand and respond to calls for geographical transposability, and the sometimes opposing demands of industrial standardization and productive specialization, could make or break those types that had been so integral to the establishment and growth of colonial economies. The mania for standardization that enlisted breeds and people, livestock and landscapes the world over in the service of London’s markets, sounded the death knell for these breeds even as it ensured the ascension of rival kinds to global prominence.

In all, the exportation of British breeds and the attendant system for producing, processing and transporting dead meat laid the foundations of the modern system of meat production that persists today. In this, the British Empire was definitional: it provided the living bodies—human, bovine, and ovine—that fed the system, as well as the technological and logistical ensembles that supported it (the coal, the steamships, the storehouses, trucks and trains), and the capital that financed it. The Empire provided the requisite political power—the strength and might to envelope the grasslands of the southern hemisphere and incorporate them into this project, and the necessary warrant to override the claims of the people who inhabited those lands. In the process, the British Empire itself was recast,

within both its formal bounds and its more tenuous and extensive spheres of influence. The system of meat production that arose out of and fed the imperial and colonial Britons profoundly shaped environments and relations of production within and between distant corners of the globe. Paradoxically, as breeds and bodies, fields and pastures, were enrolled in the system of imperial production, diversifying the geographical reach of British breeds, global physiological and ecological diversity eroded under the standardizing impulse of modern meat production.



## Chapter 1

### Defining the Problem

There is a place in Scotland—barely in Scotland, in fact, for it sits at the very outer edge of the North Atlantic continental shelf, fifty miles of sea between it and the Outer Hebrides—that is home to the oldest known breed of domestic sheep in Europe. Called Soay sheep after their native island, one of several tiny pieces of land that together make up the archipelago of St Kilda, they are small, hardy, and alleged by conservationists and scientists to be “the most primitive domestic form [of sheep] in Europe.”<sup>1</sup> Soays are dark brown or buff in color, horned, and celebrated above all for their behavioral peculiarities. In addition to being self-shedding (a common feature of wild ovines), they are noted for their white bellies, a trait found in combination with colored coats only among wild mouflons, and for “behav[ing] much more like wild animals than modern domestic

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<sup>1</sup> R. N. Campbell, “St Kilda and its Sheep,” in *Island Survivors: The Ecology of the Soay Sheep of St Kilda*, edited by Peter Jewell, C. Milner, and J. Morton Boyd (London: The Athlone Press of the University of London, 1974), p. 28. For similar rhetoric in a more popular guise, see also Elizabeth Henson, *Rare Breeds in History*, who writes in reference to the neolithic period that “the only unchanged living survivor from this period are [sic] Soay sheep.” Henson, *Rare Breeds in History* (Cheltenham: Olivant and Son, 1982), p. 3.

breeds.”<sup>2</sup> Brought to Britain as early as 4500 BCE by an early wave of human migrants, ecologists, environmentalists, and the public celebrate them as “the only *living* remnant” of “those first civilized cultures of our islands,” believed to have existed there since Neolithic farmers and fishers settled the remote islands.<sup>3</sup>

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<sup>2</sup> While resembling the mouflon, Soay sheep lack the former’s white “saddle.” Also, some male and female Soay sheep are “scurred”—that is, bear small, deformed horns. Some females are without horns entirely, or polled. T. H. Clutton-Brock, J. M. Pemberton, and T. Coulson, “The Sheep of St Kilda,” in *Soay Sheep: Dynamics and Selection in an Island Population*, edited by T. H. Clutton-Brock and J. M. Pemberton (Cambridge: Cambridge University Press, 2004), p. 24. For a complete description of the appearance of Soay sheep, see Clutton-Brock et al., *ibid.*, pp. 25-29; also Campbell, “St Kilda and its Sheep,” pp. 30-31. Campbell notes that Soay sheep are not amenable to herding, and “must be run down and captured individually,” although whether this is attributable to their prehistoric character, or simply to their more recent prolonged semi-feral existence must be a matter of debate. Campbell, *ibid.*, p.31. See also Mary Harman, *An Isle Called Hirte: History and Culture of the St Kildans to 1930* (Watemish, Isle of Skye: Maclean Press, 1997), pp. 190-193.

<sup>3</sup> Frank Fraser Darling, “Forward,” in *Island Survivors*, p. x., italics original. T. H. Clutton-Brock et al., “The Sheep of St Kilda,” p. 28, 29. The linguistic origins of the sheep’s name “Soay” derives from “island of sheep” in Norse, a strong indication that the Norse found sheep on the island when they arrived on St Kilda in the latter half of the first millennium. See Clutton-Brock, *ibid.*, p. 28; Campbell, “St Kilda and its Sheep,” p. 24.



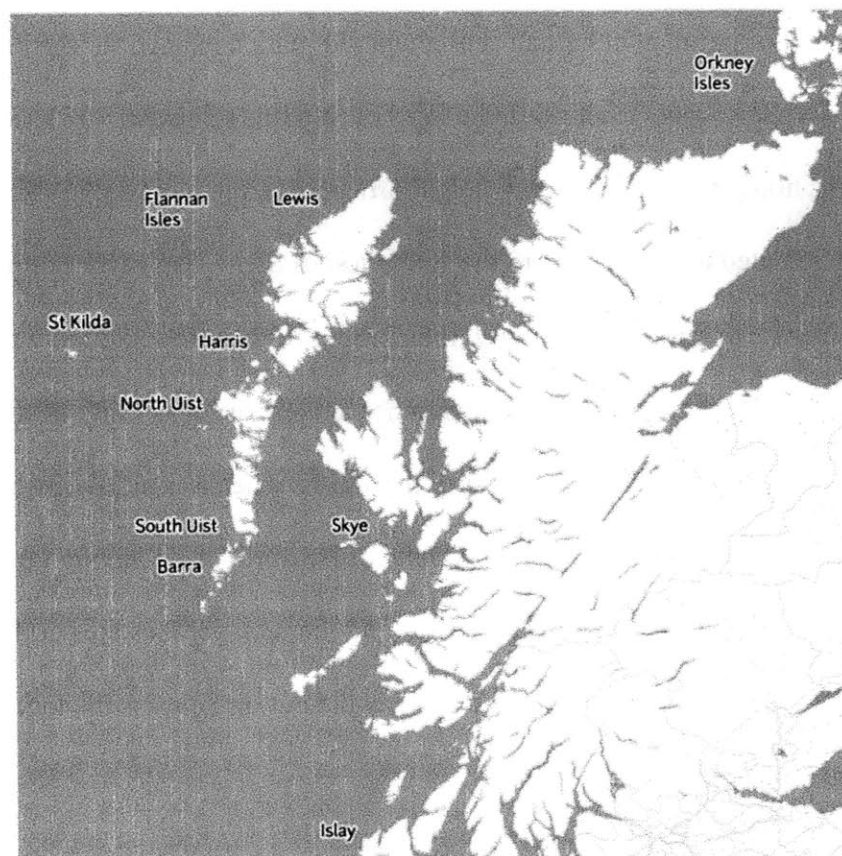


Figure 1. St Kilda's location relative to Scotland.<sup>4</sup>

Remote and windswept though it is, the archipelago of St Kilda saw uninterrupted human habitation from the neolithic period until 1930. But long before St Kilda's remaining thirty-six human inhabitants voluntarily evacuated to the Hebrides and the Scottish Highlands, successive changes to human occupation and the introduction of more modern breeds of sheep had progressively marginalized the Soay breed, confining them to only one of St Kilda's four islands where they continued to subsist largely beyond the reach of human interference, this marginalization accidentally preserving their archaic traits.<sup>5</sup> And while millennia of human occupation on St Kilda seems to have made little

<sup>4</sup> Map tiles Stamen Design and Jeff Warren (CC-BY). Data by Open Street Map (CC-BY-SA).

<sup>5</sup> The Norse were the first to arrive with their own ovine domesticates, a type known as the Hebridean. A millennium or so later, in the mid-nineteenth century, the St Kildans replaced these old Norse sheep (now

difference, the end of permanent human settlement did mark a change for the breed. Two years after the last St Kildans evacuated, the laird of St Kilda relocated 107 sheep from their eponymous home to the now empty neighboring Hirta, the largest of St Kilda's islands, closely situated at 250 meters to the southwest of Soay.<sup>6</sup> An early example of an effort to conserve a rare breed for posterity, the purpose of this transposition was to establish a satellite population on Hirta as insurance against the possibility of the breed's extinction on Soay. There they remained, until the 1950s, when a handful of wealthy conservation-minded eccentrics, notably the Duke of Bedford, began taking up "some of the wild sheep of Soay" as park animals, establishing them on great estates dotted throughout England and Wales, again, "in case they die out on Soay"—the logical extension of the laird's earlier efforts.<sup>7</sup>

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known as Boreray sheep for the small island to which remnant herds were confined) with Cheviot or improved black-faced breeds popular in Scotland. Harman, *Hirte*, p. 192.

<sup>6</sup> The human population of St Kilda was always small, never exceeding 200 at the highest estimate. Prior to the emigration of a full one-third of its population to Australia in 1852, the number of St Kildans sat between 100 and 110. The population continued to decline, especially under the dampening demographic effect World War I, until 1930 when the remaining inhabitants, unable to sustain their island economy, evacuated. Harman, *Isle Called Hirte*, pp. 124-141, 134; Eric Richards, *From Hirta to Port Phillip: The Story of the Ill-fated Emigration from St Kilda to Australia in 1852* (Ravenspoint: Islands Book Trust, 2010), p. 110.

<sup>7</sup> R. M. Lockley, "The Wild Viking Sheep of Soay," *Country Life* 77 (10 March 1960), p. 509. See also J. Morton Boyd and P. A. Jewell, "The Soay Sheep and their Environment: A Synthesis," in Jewell et al., *Island Survivors*, p. 360.

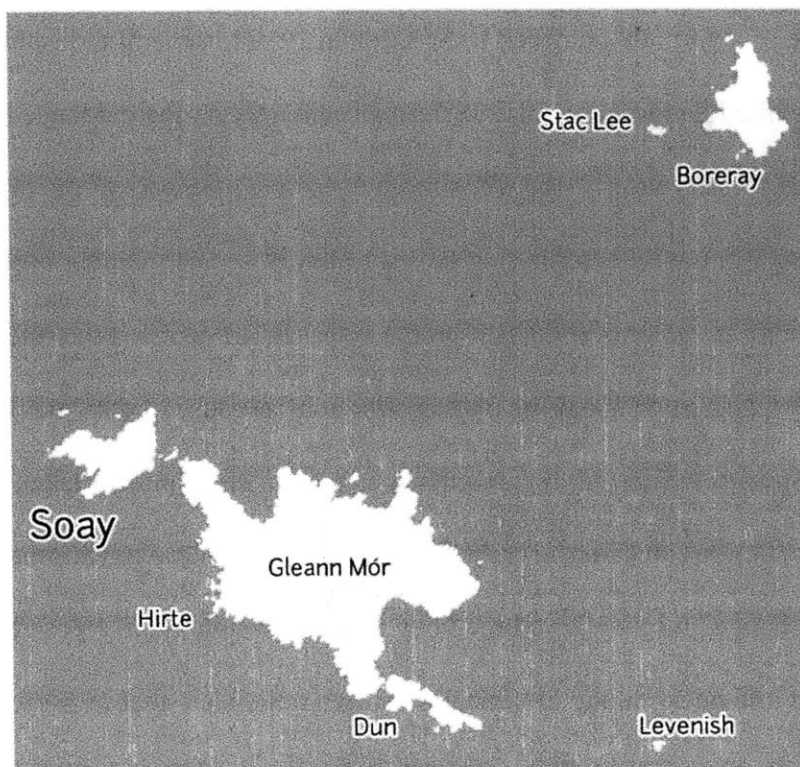


Figure 2. A map of the archipelago.<sup>8</sup>

By the early 1970s, efforts such as those lavished on the Soay sheep had coalesced into an identifiable conservation movement centered on the preservation of rare or endangered breeds of livestock. The practice of dispersal—of removing portions of populations of numerically-challenged, unusual, or historically interesting types of livestock as an insurance against future threats—had been adopted as the standard policy by the Rare Breeds Survival Trust (RBST), Britain’s first and foremost organization for breed conservation.<sup>9</sup> The RBST worked zealously to relocate populations of insular or otherwise isolated types of sheep to and from various corners of the United Kingdom.<sup>10</sup> And while supporting evidence accrued—the number of Soay sheep grew, for example,

<sup>8</sup> Map tiles Stamen Design and Jeff Warren (CC-BY). Data by Open Street Map (CC-BY-SA).

<sup>9</sup> Perceived risks to geographically-concentrated breeds included possible oil spills for coastal or insular breeds; outbreaks of disease; or even merely waning local interest. Henson, *Rare Breeds*, p. 15; also M. L. Ryder, “The Saga of the Orkney Sheep, *The Ark*, 1 (September 1974), p. 15.

<sup>10</sup> Notably populations of sheep from the Isle of Man and the Orkney Islands.

from an estimate of about 500 confined to St Kilda in 1939 to several thousands scattered throughout the United Kingdom in 2012, offering seemingly strong evidence in favor of this kind of breed conservation<sup>11</sup>—by 1974 more reflective members of the organization were beginning to wonder whether in fact such a policy posed an inherent problem. J. C. Hindson, a founding member of the RBST and a veterinarian, worried that the Trust’s practices “involve[d] the essence of its own destruction” because of the “inevitable change in any breed or species which will occur when a change of environment takes place.”<sup>12</sup> Given the right set of circumstances, enough time, or a lapse in conservationist vigilance, this “inevitable change” might alter a breed beyond recognition. Such a possibility, by extension, called into question the organization’s own rationale—that of preserving rare genetic traits for possible future utility, or for their historic significance. More than this, though, it called into question the very idea of a breed: to what degree was a type dependent on its environment for its defining characteristics? And did the inevitable tendency of a type to change over time in response to its surroundings mean that the the existence of breeds at all was an illusion? Or, “posed as a simple question,” as Hindson asked, “is a Soay still a Soay after 25 generations in the South of England?”<sup>13</sup>

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<sup>11</sup> Contemporary estimates are based on the number of breeding females in existence, which the Rare Breeds Survival Trust estimated at 1500 in 2012. “RBST Watchlist 2012,” February 2012; “RBST Fact Sheet—Soay,” November 2011. Cf. “Guidelines for Acceptance onto the Rare Breeds Survival Trust Watchlist,” n.d. Earlier estimates ranged only as high as between 650 and 700 in 1948. J. Morton Boyd, “Introduction,” in Jewell et al., *Island Survivors*, p. 2.

<sup>12</sup> J. C. Hindson, “Questions on Trust Policy,” *The Ark*, 1 (December 1974), p. 18.

<sup>13</sup> *Ibid.*

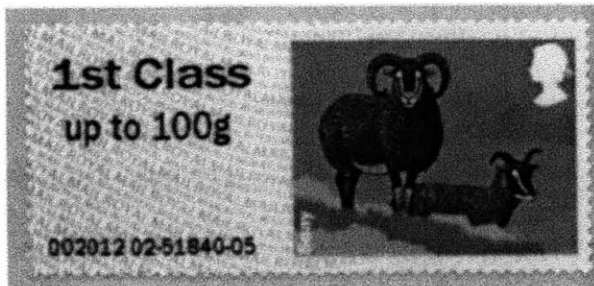


Figure 3. A postage stamp commemorating the Soay breed, released in 2012.

### *A breed in any other place*

This was not the first time someone had asked this question, nor would it be the last. Hindson’s query, though couched in the particulars of the Soay’s case, and underpinned by ecological understandings that marked that particular moment in breed conservation, had a long history and a bright future. It spoke to larger questions about what makes a breed a breed, and in particular, to the role of environment in shaping particular types of livestock. Domestic breeds are not solely the result of artificial selection or of human ingenuity. Rather, they can be understood as the outcome of a complex and dynamic triadic relationship in which the interplay of heredity—the pattern of transmission of characteristics across generations of organisms—human influence, and environmental conditions combine to produce particular physical expressions, or the phenotypes, of a group’s collectively-embodied genetic potential, or genome. Though not always expressed in such terms, understanding of this complexity has long influenced notions of what constitutes a breed. A mid-nineteenth-century authority on sheep breeding wrote that “the

body and fleece of [British sheep] are decidedly the result of culture, climate, and pasturage; the former shapes the frame, and the others the clothing of it.”<sup>14</sup>

And so whether a type of animal, transplanted from the environmental and cultural milieu that had helped to bring it into existence, would remain the same under a different set of circumstances, was a problem that had long plagued British breeders who, judging by the records they left, had a great penchant for moving stock from one place to another. This question was asked when Spanish merino sheep were imported into Britain in the 1810s, and again when British breeds were exported to colonial Australasia in the 1860s and 1870s. It was recapitulated once more in the 1980s and 1990s, when erstwhile colonial specimens of Hereford cattle were reimported from North America to Britain, threatening to swamp bloodlines that had never left the British Isles in a rising tide of “Canadian genetics.”<sup>15</sup> Sometimes, the answer to whether a breed remained the same in a new environmental context was yes, sometimes no, but it was never simple, for the stakes were always high, encompassing issues of nationality and imperialism, of economic and cultural value, and with comparisons to the human condition always implicit.

Whether or not Soay sheep would change, given enough time and a novel environment, then, was relevant not only to economically unimportant varieties of sheep existing in only the smallest numbers in the most remote reaches of the North Atlantic. Its implications extended far beyond the practice of breed conservation, resonating with major shifts in global production and environmental change since the nineteenth century. The dispersal and circulation of livestock was a hallmark of European colonialism, a critical

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<sup>14</sup> William Brown, *British Sheep Farming* (Edinburgh: Adam and Charles Black, 1870), p. 79.

<sup>15</sup> Oral history interviews conducted with breeders of “Traditional” Hereford cattle: Les Cook, Cambridgeshire, UK, interview 4 January 2010; Peter Talbot, Somersetshire, UK, interview 19 January 2010.

component of the idea of the “biological expansion of Europe,” which environmental historians since Alfred Crosby have used to account for the global dominance of Europe since circa 1500.<sup>16</sup> Continued diffusion of British breeds remained a crucial element of further imperial expansion into settler colonies in the nineteenth century: with British people and their breeds, the imperial center exported its system of livestock production, a sophisticated, highly stratified mode of production that enrolled vast swaths of the globe into the production of meat for export. Importantly, this shift hinged on the capacity to produce *British* meat for metropolitan consumers, an endeavor that, in turn, relied in no small part on the degree to which breeds native to the British Isles could maintain their character in novel colonial settings. These developments have had enormous environmental and economic consequences for the way in which meat is still produced in many parts of the globe today where, divested of its imperial trappings and disseminated still further, the same system brings meat to tables around the world. Above all, this question is important, for in tracing its answers, the material and cultural workings of colonialism and imperial expansion are revealed.

Understanding the roots of these realities means understanding how livestock and meat moved through the Empire, and understanding *this* means understanding what happens to local types of livestock when they were removed from familiar surroundings.

This is the central question of this dissertation, addressed at the level of Great Britain and

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<sup>16</sup> Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900-1900* (Cambridge: Cambridge University Press, 2004 [1986]); Elinor G. K. Melville, *A Plague of Sheep: Environmental Consequences of the Conquest of Mexico* (Cambridge: Cambridge University Press, 1994); Virginia DeJohn Anderson, *Creatures of Empire: How Domestic Animals Transformed Early America* (Oxford: Oxford University Press, 2004). See also Tom Brooking and Eric Pawson, *Seeds of Empire: The Environmental History of New Zealand* (London and New York: I.B. Tauris, 2011); William Beinart, *The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770-1950* (Oxford and New York: Oxford University Press, 2003).

at the imperial scale. It is the problem of the Soay sheep writ large. Where Soays moved from farthest Scotland to the South of England, British breeds moved from the United Kingdom to the farthest reaches of the “new worlds:” North and South America, Australia, New Zealand, South Africa.<sup>17</sup> Where Soays moved from a harsh and challenging environment to gentler, more luxurious surroundings, imperial breeds left the soft cradle of their home isles for an enormous range of conditions, some of them equal to or surpassing their native pastures in comfort, many of them not. Where breeder-conservationists feared the loss of Soays’ unique, island-bred characteristics, colonial breeders feared the loss of Britishness in their stock, a not insignificant worry for producers from whom the metropolitan market demanded British meat.

### *The art of breeding*

Today it is understood that as the sum of flocks or herds, themselves aggregates of individuals, a breed is by definition subject to constant change.<sup>18</sup> Animals are born, reproduce, and die. In the process, some traits or characteristics are transmitted across generations, but not all, making work for selective breeders, whether conservationist or

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<sup>17</sup> These fall into a category of lands that Crosby has called “neo-Europes” for their ecological homology with Europe. Crosby, *Ecological Imperialism*, p. 7, 133, *passim*. Belich understands domesticated animals as part of the proto-industrial “hardware” of “explosive” Anglo-expansion and colonialism in the eighteenth and nineteenth centuries. Belich, *Replenishing the Earth*, pp. 182-185.

<sup>18</sup> For definitions of “breed,” and for the challenge of defining breeds, see Harriet Ritvo, *The Platypus and the Mermaid and Other Figments of the Classifying Imagination* (Cambridge and London: Harvard University Press, 1997), esp. pp. 78-81. See also the work of Juliet Clutton-Brock, especially *A Natural History of Domesticated Mammals*, 2nd edition (Cambridge UK and New York: Cambridge University Press, 1999); Charles Darwin, *On the Origin of Species by means of Natural Selection, or, the Preservation of favored races in the struggle for life* (London: John Murray, 1859), chapter 1; Darwin, *The Variation of Animals and Plants under Domestication*, volume 1 (London: John Murray, 1868).



conventional in outlook. A breed is thus an inherently unstable thing, the word itself denoting a sense of transmission absent in synonymous terms such as kind, type, variety, strain, or race. It came into wide currency “among husbandmen” only in the early nineteenth century as a way to distinguish “varieties [of stock], possessed of peculiar characters” precisely because its relation to the verb, “to breed,” suggested the means by which “it is supposed their respective properties are in great measure communicable to their descendants.”<sup>19</sup> Never entirely containable by the methods of selective breeders, any breed’s genome contains enough variation that individual phenotypes will differ considerably.

Even in a “closed” breed, inbred for many generations to produce homogeneous genotypes in its composite individuals, and therefore a relatively stable phenotype, genetic drift sufficient to modify the overall characteristics and appearance of the breed is the norm. This meant that, whether or not a breed like the Soay remained in its native habitat, twenty-five generations were indeed likely to produce a group of individuals that looked different than their forebears—in the Soay’s case, to present a different ratio of buff-colored animals to dark brown ones, as well as variable rates of reproduction and longevity, themselves dependent on a combination of hereditary and environmental factors. For Hindson, whose concern was to preserve the character of the Soay breed, this indefiniteness was a weakness, but in another context, it could also be a strength. The gap between heritability and physical appearance, between genotype and phenotype, offered breeders, as it were, the space to experiment with selection, and has been of fundamental

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<sup>19</sup> Andrew Coventry, *Remarks on Live Stock and Relative Subjects* (Edinburgh and London: Archibald Constable and Co.; John Murray, 1806), p. 36; Ritvo, *Platypus and Mermaid*, p. 81.

importance to the development of livestock breeds since the eighteenth century. It offered a degree of malleability that breeders used to modify their preferred varieties towards a desired end or ends, whether it was the production of long or fine wool, rich or copious milk, fine hides or fatty meat, or some combination thereof.

For a breed like the Soay, where the conservation of the genetic profile of the type was the ultimate aim, though, the shifting and often uncertain nature of a breed, and particularly its susceptibility to outside influence, was a source of apprehension. Anxiety over the operation of genetic drift in the Soay population residing in England was informed by the population ecology of the mid-twentieth century. The field of ecology as it developed in the late nineteenth and early twentieth centuries posited a holistic understanding of speciation and evolution in response to environmental factors, intra-group dynamics, particularly sexual selection, and inter-species factors such as prey and predation, embracing the whole of these interactions in the notion of the ecosystem.<sup>20</sup> By the mid-twentieth century, population ecology had emerged as a sub-discipline engaged in quantifying, measuring and tracking genetic makeup and physical expression thereof at the level both of the individual and the population to which it belonged.<sup>21</sup> Most ecologists studied the population genetics of wild or feral animals, but as a result of conservationist

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<sup>20</sup> See Frank Benjamin Golley, *A History of the Ecosystem Concept in Ecology: More than the Sum of the Parts* (New Haven and London: Yale University Press, 1993).

<sup>21</sup> Understanding the dynamics of population had been a theme in ecology since the early twentieth century, but gained solid disciplinary identity in the 1950s and 1960s. See Sharon E. Kingsland, *The Evolution of American Ecology, 1890-2000* (Baltimore: Johns Hopkins University Press, 2005), especially p. 219. Frank Golley argues that the emphasis on population dynamics in British ecology put it at odds with the practice and theory of ecology elsewhere in the world. Golley, *Ecosystem Concept*, pp. 84-85, 177. For general background on the emergence of the field, see Leslie A. Real and James H. Brown (eds.), *Foundations of Ecology: Classic Papers with Commentaries* (Chicago and London: University of Chicago Press, 1991); and for the origins of British ecology within the field of natural history, see N. Jardine, J. A. Secord, and E. C. Spary, eds., *Cultures of Natural History* (Cambridge and New York: Cambridge University Press, 1996).

interest, semi-feral Soay sheep also became a model population of how domesticates behave and evolve in the absence of human influence.<sup>22</sup> Scientific interest in the breed was supported by the redefinition of St Kilda as a site of unusual natural resources. Because it is a breeding-ground for fulmars, gannets, and other species of seabirds, St Kilda was designated a National Nature Reserve of Britain in 1968, and a World Heritage Site in 1986.<sup>23</sup> In conjunction with these designations, it has operated as a field station for ornithologists observing and tracking winged populations, as well as for ecologists studying Soay sheep. These and other scientists concerned with the dynamic between genetic adaptation, environmental conditions, and animal behavior, produced increasingly fine-grained understandings of how populations evolved in relation to their surroundings.

With similar developments in the field of animal science, such knowledge has offered livestock breeders, conservationist or conventional, a formal way to understand the role of environment in artificial selection, and indeed, heritability more broadly: the theories and practices of nineteenth-century breeders now seem like very blunt tools. Yet, although they operated in the absence of a modern understanding of genetics, the historical record demonstrates sophisticated, if sometimes hotly debated, theoretical and practical understandings of the variable influences of human and environmental factors on domestic populations. The precise mechanism of heritability was unknown until the rediscovery of Mendelian genetics in the 1890s, but even so, the transmission of characteristics across

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<sup>22</sup> Study of this breed has resulted in the publication of two edited volumes, one in 1974 and the other in 2004, in addition to numerous scientific papers in the fields of ecology, zoology, evolutionary biology, genetics, and behavioral sciences, beginning with Michael Ryder's inaugural article on the breed in *Nature* in 1959. See Jewell et al., *Island Survivors*; and Clutton-Brock and Pemberton, *Soay Sheep*; M. L. Ryder, "Some Unusual Outgrowths from Secondary Follicles in Soay Sheep," *Nature* 183, 4678 (1959), pp. 1831-1832.

<sup>23</sup> T. H. Clutton-Brock et al., "The Sheep of St Kilda," p. 24.

generations was well-understood.<sup>24</sup> “Blood” served as a metaphor for the means and substance of heritability, though contemporaries were aware that it was “nothing more than an abstract term, expressive of certain external visible forms which, from experience, we infer to be inseparably connected with those excellencies which we most covet.”<sup>25</sup>

Because the operation of heritability remained a puzzle, its relation to the influence of environmental surroundings—climate, herbage, soil type, seasonal variation, and so forth—remained open to debate. The “influence of climature, on the constitution, or changeable part of the nature of animals” was “a matter of difficulty to be demonstrated,” as an early authority on rural economy realized.<sup>26</sup> Nevertheless, its effects at times seemed undeniable in the ways in which distinctive types seemed tied to their localities: “no man has yet been able to breed Arabian horses, in England,” this author continued, nor “English horses, in France or Germany; nor Yorkshire horses in any other District of England.”<sup>27</sup> So strong did this connection seem that no one “who has ever had an opportunity of considering the subject,” opined John Sinclair, a leading agriculturalist of the late eighteenth century, would “ever entertain the idea, that only one breed of sheep, ought to be propagated in these kingdoms.”<sup>28</sup> Indeed, although “all animals are subject to variety as

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<sup>24</sup> Staffan Müller-Wille and Hans-Jörg Rheinberger, “Heredity—The Formation of an Epistemic Space,” pp. 3-33 in *Heredity Produced: At the Crossroads of Biology, Politics, and Culture, 1500-1870*, edited by Staffan Müller-Wille and Hans-Jörg Rheinberger, (Cambridge MA and London: MIT Press, 2007); Roger J. Wood, “The Sheep Breeders’ View of Heredity Before and After 1800,” pp. 229-249 in *Heredity Produced*, edited by Müller-Wille and Rheinberger; Roger J. Wood and Viteslav Orel, *Genetic Prehistory in Selective Breeding: A Prelude to Mendel* (Oxford: Oxford University Press, 2001).

<sup>25</sup> Quoted in John Hunt, *Agricultural Memoirs; Or History of the Dishley System* (1812), p. 17. See also Wood, “Sheep Breeders’ View,” pp. 230-232.

<sup>26</sup> William Humphrey Marshall, *The Rural Economy of Yorkshire, Comprizing the Management of Landed Estates, and the Present Practice of Husbandry in the Agricultural Districts of that Country*, vol. 2, 2nd edition (London: 1796 [1788]), p. 154.

<sup>27</sup> *Ibid.*

<sup>28</sup> John Sinclair, *Observations on the Different Breeds of Sheep, and the State of Sheep Farming in some of the Principal Counties of England* (Edinburgh: W. Smellie, 1792), p. ii.

determined mainly by breed and climate,...no kind of animal varies so much as the *Ovis* in adapting itself to circumstances, or becoming acclimatised.”<sup>29</sup> As Sinclair put it, the “hardy and plastic nature of the animal itself,” seemed matched by the “variety of ground on which it may be safely pastured,” lending evidence, in his view, “that nature intended, that there should be a considerable diversity of breeds, even in the same individual country.”<sup>30</sup>

Such a realization was, according to William Brown, an authority on the subject, “the great starting-point in sheep-culture.”<sup>31</sup> Moreover, by 1870 when Brown published his “handy book [on] the science and practice of British sheep farming,” the idea that the different “habitats” boasted “prevalent breeds of sheep adapted to them” was common knowledge.<sup>32</sup> “Most people,” he wrote, “have an indefinite general knowledge on this question; they have often heard it spoken of in an incidental way, and they know...that a Down will not thrive on the Grampians,” even if the “particular reason” for this eluded comprehension.<sup>33</sup>

Before it was codified as genetics, or sanctified as a scientific field, knowledge of how characteristics were transmitted from generation to generation operated tacitly.<sup>34</sup> Observation and experimentation—what might be termed barnyard science—was the stuff of livestock breeding, but it was an applied knowledge, and therefore difficult to transmit in the absence of practical experience. There were limits to what could be transferred by

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<sup>29</sup> Brown, *Sheep Farming*, p. 80.

<sup>30</sup> Sinclair, *Observations*, p. ii.

<sup>31</sup> Brown, *Sheep Farming*, p. 78.

<sup>32</sup> *Ibid.*, p. 2, 1.

<sup>33</sup> *Ibid.*, p. 78.

<sup>34</sup> Importantly, the ascent of the gene in the twentieth century has not wholly erased the significance of tacit or embodied knowledge to selective breeding. See Christina Grasseni, *Skilled Visions: Between Apprenticeship and Standards* (New York: Berghahn Books, 2007); Bert Theunissen, “Breeding Without Mendelism: Theory and Practice of Bairy Cattle Breeding in the Netherlands, 1900-1950,” *Journal of the History of Biology* 41 (2008), pp. 637-676.

pen and ink: knowledge gained “by an accumulation of circumstances—ordinarily called experience”—was paramount.<sup>35</sup> William Brown believed that “any amount of reading without the long daily experience of the grazier is of little service to the young husbandman.”<sup>36</sup> Others concurred. In 1875, a columnist for the *Livestock Journal and Fancier’s Gazette*, a weekly publication devoted to the breeding and rearing of pedigreed livestock, poultry, and pets, expressed frustration over the incapacity of “fanciers and breeders...for *appropriating knowledge*” of practical breeding from the pages of the journal, given that such knowledge “cannot be taught in words.”<sup>37</sup> Rather than prompting a crisis of professional identity (for what good was a journal devoted to livestock breeding if such knowledge was intransmissible by ink and paper?), this lamentable observation spurred the writer to ruminate on the nature of the “art” of breeding: not an “instinctive” art, it was “simply the result of experience...constantly accumulated and gathered up to be applied throughout succeeding seasons.” For the “thinking breeder,” then, “even a broad hint is sufficient...and he is ever keeping his own eyes open to apply what he has learnt from others to his own experience.”<sup>38</sup> By these means—patience, observation, experience—was “*mastery* of [this]...particular branch” of knowledge assumed in the absence of what an historian recently called “a functional explanation of biological inheritance.”<sup>39</sup>

Early nineteenth-century opinion supported this view. In pursuit of “improvements in this branch of rural economy,” experts warned that “what the most estimable properties

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<sup>35</sup> Brown, *Sheep Breeding*, p. 120.

<sup>36</sup> Brown, *Sheep Farming*, p. 34.

<sup>37</sup> “Experience,” *Livestock Journal and Fancier’s Gazette* 63 (20 August 1875), p. 399.

<sup>38</sup> *Ibid.*, p. 400.

<sup>39</sup> *Ibid.*, p. 400; Wood, “Sheep Breeders’ View,” pp. 229.

are, can only be determined by patient observation and assiduous research.”<sup>40</sup> Such reliance on observation and the practical accumulation of knowledge shaped the terms of the debate over what heritability was and how it worked. It seemed that the nature of “blood” was in the eye of the beholder. Andrew Coventry, author of the well-reputed *Remarks on Live Stock and Relative Subjects* (1806), noted that some breeders, “having discovered that certain properties were less steady when circumstances were changed, have been disposed to conclude, that all are more or less mutable..according to the influence of the changing powers.” From another perspective, that of “a situation where circumstances were less varied, and where of course alterations on the form and character of animals were less frequent and striking,” breeders “collecting their observations” there were “led to draw an opposite conclusion,” the stability of the conditions of their observations suggesting that “the appropriate qualities were innate and immutable.”<sup>41</sup> The formal branches of the sciences, like physiology and anatomy, were of little use in sorting out these differences of opinion, according to those familiar with both the workings of scientific inquiry and the breeding of livestock. John Hunt, a physician who claimed the late Erasmus Darwin as his “learned friend” and a great livestock enthusiast (though not a practical breeder), wrote in 1812 that “the breeding and feeding of domestic animals [was] not to be explained” by the “parade of philosophy,” but rather by “a knowledge of nature.”<sup>42</sup> Seemingly, the gap between heritability and observable characteristics could only be filled by experience.

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<sup>40</sup> Andrew Coventry, *Remarks on Live Stok and Relative Subjects* (Edinburgh and London: Archibald Constable and John Murray, 1806), p. 5.

<sup>41</sup> *Ibid.*, p. 36-37.

<sup>42</sup> Hunt, *Memoirs*, p. 21.

Beginning in the late eighteenth century, this was increasingly the territory of enthusiastic agriculturalists working under the sway of an ethos of “improvement.” As a guiding philosophy, improvement was applied to many branches of rural economy—to agricultural technology and farming implements, grain yields, the study of soil content and quality, even to the structure of farm buildings and the dwellings of tenant farmers—with the overall goal of rationalizing, and thereby increasing the productivity of, the agricultural sector of Great Britain. It resulted in several major developments, not least among them the transition from common grazing to enclosed pasture and cropland, a sweeping change to the landscape of the British Isles, often with devastating social consequences.<sup>43</sup> More prosaically, but perhaps no less revolutionary in the long run, agricultural improvement also gave Britain the rutabaga, or “swede:” originally a humble Swedish vegetable, it dramatically transformed livestock feeding and fattening.<sup>44</sup> Improvement also resulted in the widespread adoption of the four-field system of crop rotation, in which “the cultivation of clover and rye-grass, joined to...turnip husbandry” and to the pasturing of livestock, resulted in “such luxuriant crops of grain...as could not be produced, by any other means.”<sup>45</sup> Improvers, most of whom hailed from the landed aristocracy, promoted efficiency at all scales, from the smallest holding to the greatest estate (although they

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<sup>43</sup> Hugh C. Prince, “The Changing Rural Landscape, 1750-1850,” in *Agrarian History of England and Wales*, vol. 6, 1750-1850, edited by G. E. Mingay (Cambridge: Cambridge University Press, 1989), pp. 44-46; Michael Turner, *Enclosure in Britain 1750-1830* (London: MacMillan Press, 1984), pp. 28-32, 64-67, 82; Trevor Wild, *Village England: A Social History of the Countryside* (London and New York: I.B. Tauris, 2004), pp. 22-44. What constituted “improvement” varied from region to region, including, for example, land drainage as well as enclosure in Lincolnshire. See G. E. Fussell, “Four Centuries of Lincolnshire Farming,” *Reports of the Papers of the Lincolnshire Art and Archaeological Society*, 4 (1952), p. 9-10.

<sup>44</sup> Raine Morgan, “Root Crops,” *Agrarian History of England and Wales*, edited by G. E. Mingay (Cambridge: Cambridge University Press, 1989), pp. 296-304, especially pp. 299-300.

<sup>45</sup> Sinclair, *Observations*, p. iv. See also Prince, “Changing Landscape,” pp. 30-41.



continually bemoaned the common farmer's resistance to such activity), efforts they undertook in the name of enhancing the prestige of Great Britain.

*Every soil has its stock*

Agricultural improvers turned their eye towards the nation's hordes of sheep and cattle, too. Regionally, even locally, distinguishable breeds predominated in England, Scotland, and Wales in the eighteenth century as products of the long histories of husbandry and human migration in the British Isles, and by the early nineteenth century, identifiable local varieties had begun to emerge as definable breeds resulting from the interplay of human directives and local conditions.<sup>46</sup> In fact, the modern notion of a "breed" as a replicable type itself gained currency around the same time in recognition of two concurrent foci in the shaping of livestock—the ability of a skillful breeder to impress human desiderata (size, color, form) on a group of animals, and increasing awareness of the variety and distinctiveness of type throughout the British Isles.<sup>47</sup> Acknowledgement of both arose in consequence of the spirit of improvement that marked agricultural pursuits at this time, the former from the practical application of this philosophy to livestock production, and the latter from the movement's attendant desire to promote useful agricultural knowledge. Enthusiasm for useful knowledge, which of course extended well beyond the agricultural

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<sup>46</sup> Robert Trow-Smith, *A History of British Livestock Husbandry*, vol. 2 1700-1900 (London: Routledge and Keegan Paul, 1959); Nicholas Russell, *Like Engend'ring Like: Heredity and Animal Breeding in Early Modern England* (Cambridge: Cambridge University Press, 1986).

<sup>47</sup> Harriet Ritvo explores the ability to formulate a "genetic template" in purebred livestock in the late-eighteenth-century livestock breeding in "Possessing Mother Nature: Genetic Capital in Eighteenth-Century Britain," in *Early Modern Conceptions of Property*, edited by John Brewer and Susan Staves, pp. 413-26 (London and New York: Routledge, 1995).

sector, and only increased over the course of the nineteenth century, spurred the growth of a genre of agricultural reportage describing rural affairs throughout the England, Wales, Scotland, and eventually Ireland, designed to encourage enlightened practice among the nation's landowning class.<sup>48</sup>

In addition to accounts of geological and climatological conditions, farming economy, statistical values relating to arable and pastoral production, and detailed descriptions of the gardens, houses, farm buildings and cottages of great estates, these "general views," as they were customarily titled, contained details of the particulars of a region's livestock. In aggregate, these accounts of rural economy and animal husbandry offer a picture of a system of livestock breeding at the commencement of the nineteenth century remarkable for its diversity. Each region contained its own, usually eponymous, type of cattle and of sheep. The cattle of Cambridgeshire, for example, were "mostly the horned breed of the county, and are called by its name," according to William Gooch,<sup>49</sup> while in the southwest of England, Devonshire cattle predominated, "and this breed, more or less pure, prevails throughout Cornwall," according to George B. Worgan, author of the *General View of the Agriculture of the County of Cornwall*.<sup>50</sup> Gradations in type were common, particularly so if the area in question was large, like the Southwest of England. Writing in 1807, Worgan carefully distinguished the fine differentiations within the

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<sup>48</sup> Arthur Young's 1769 *A Six Weeks' Tour through the Southern Counties of England and Wales* is generally held to be the first of this genre, and the inspiration for the series of "general views" of the various counties of the United Kingdom subsequently commissioned by the Board of Agriculture. See Arthur Young, *A Six Weeks' Tour through the Southern Counties of England and Wales* (London: W. Strahan and W. Nicoll, 1769).

<sup>49</sup> William Gooch, *General View of the Agriculture of the County of Cambridgeshire* (London: Richard Phillips, 1811), p. 266

<sup>50</sup> George B. Worgan, *General View of the Agriculture of the County of Cornwall* (London: B. McMillan, 1807), p. 137.

Devonshire type, North Devons (the preferred breed of “the more enlightened and spirited breeders”) being fine and somewhat delicate, while South Devons, “more of a brown, than of a blood-red colour” were “considered stronger and more hardy.”<sup>51</sup> Breed, or type, was understood as intimately connected to the nature of a place. In a region of variable geology and climate like Cornwall, where a “great diversity of soil prevails...as well as difference of situation in regard to shelter and exposure, it is not to be wondered at,” wrote Worgan, “that the cattle which are bred and fed thereon, should also vary much in size and other properties, occasioned by local circumstances.”<sup>52</sup> Indeed, that “every soil has its own stock” was the presiding understanding of the differentiation of breeds within Britain at the turn of the nineteenth century.<sup>53</sup>

But any simple one-to-one equation between place and breed was complicated by the intent and actions of breeders whose increasingly intense interventions in the processes of inheritance and spirited transposition of kinds from place to place within the British Isles, weakened the ties between place and breed at this time. This was most evident in sheep breeding, where types exhibited even more local variation than did cattle. In Gloucestershire, for instance, the predominant breed was “that of the Cotswolds, a type large and coarse in the wool,” but Leicesters, South Downs, Wiltshires, Somersetshires, and the Ryeland breed could all find their champions there.<sup>54</sup> In Cornwall, where “the climate and soil...is particularly favourable to the production of the finest fleeces,” but

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<sup>51</sup> Ibid.

<sup>52</sup> Ibid.

<sup>53</sup> William Pearce, *General View of the County of Berkshire* (London: W. Bulmer, 1794), p. 46. Cf. Wood, “Sheep Breeders’ View,” p. 230.

<sup>54</sup> Thomas Rudge, *General View of the Agriculture of the County of Gloucestershire* (London: Richard Phillips, 1807), p. 305, 307-309. The Cotswolds are a region in England that encompass portions of Worcestershire, Gloucestershire, Wiltshire, Oxfordshire, Warwickshire, and Somersentshire.

where wool-growing suffered from want of a local wool fair to stimulate the ingenuity of breeders, the local “true Cornish breed of sheep” had already by the close of the eighteenth century been mostly replaced by other breeds “introduced at different periods...of the Exmoor, Dartmoor, North and South Devon, Dorset, Gloucester, and Leicester sorts.”<sup>55</sup> As a consequence, the “pure Cornish sheep [was] now a rare animal,” according to Worgan, “nor, from its properties”—including “grey faces and legs, coarse short thick necks...narrow backs, flattish sides, a fleece of coarse wool” and “mutton seldom fat”—“need the total extinction be lamented.”<sup>56</sup>

### *The improved Leicester*

Enthusiasm for improvement had inspired the internal circulation of these breeds, which eclipsed local breeds like the Cornish sheep. Moreover, this ethos had turned, in the case of livestock production, to efforts to increase the yields of meat, milk, and wool. The example *par excellence* of an improved breed at the close of the eighteenth century was the New Leicester Longwool, the celebrated creation of Robert Bakewell.<sup>57</sup> Noted for both his skill in controlling the variability of his flocks, and his business acumen when it came to maintaining control over the reproductive potential of his improved breed, Bakewell “fixed” the characteristics of the New Leicester Longwool by rigorously selecting individuals displaying his desired type (animals not conforming to his ideal were sent to

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<sup>55</sup> Worgan, *Cornwall*, p.148.

<sup>56</sup> *Ibid.*

<sup>57</sup> Bakewell’s personality and approach to livestock breeding were both controversial. Ritvo, *Animal Estate*, pp. 66-69.

slaughter), and subsequently inbreeding close relations—mating parent to offspring, or sibling to sibling—in order, in modern terms, to hone the genotype and stabilize the phenotype of his breed. Improvement in the case of the New Leicester Longwool, or Dishley breed, as it was sometimes called after the farm at which Bakewell undertook their improvement, meant a round carcass, heavy hindquarters, light offal and bones, and animals quick to reach maturity.<sup>58</sup> The Dishley was hailed by its contemporaries as the pinnacle of perfection—“To such extreme perfection has the frame of this animal been carried,” enthused Lord Somerville, a leading improver of the age, “that one is lost in admiration at the skill and good fortune of those who worked out such an alteration. It should seem, as if they had chalked out, on a wall, the form, perfect in itself, and then had given it existence.”<sup>59</sup>—and memorialized by later generations as an entirely synthetic production: William Brown called it “purely of man’s modeling,” its “remarkable precocity” in particular a mark of its “being so much artificial.”<sup>60</sup>

The New Leicester Longwool was described as such in contradistinction to those breeds where the effects of nature seemed to prevail more so than “the hand of man.”<sup>61</sup> William Brown’s theoretical heirs A. H. Archer and James Sinclair opined at the close of the nineteenth century that, so much did the “physical characteristics of the country affect the constitution of the sheep, the quality of the meat, and the growth of the wool,” it was probably the case that “they have contributed in perhaps a greater degree than

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<sup>58</sup> Wood, “Sheep Breeders’ View”, pp. 232-236; Ritvo, “Possessing Mother Nature.”

<sup>59</sup> John Southey Somerville, *Facts and Observations Relative to Sheep, Wool, Ploughs and Oxen: In Which the Importance of Improving the Short-Wooled Breeds of Sheep, by a Mixture of the Merino Blood, Is Demonstrated from Actual Practice*, 3rd ed. (London: Printed for J. Harding, 1809), 3.

<sup>60</sup> Brown, *Sheep Farming*, p. 29, 27.

<sup>61</sup> *Ibid.*, p. 2.

methodological selection on the part of breeders to the production of many of our existing races.”<sup>62</sup> The Scottish Blackfaced—a breed hailed for its superior wool and hardy constitution, for instance, was the Leicester’s polar opposite in this regard. “There is as much difference betwixt these sheep,” wrote William Brown, “as there is between hothouse and hardy plants.”<sup>63</sup> If the Dishley breed was the ultimate in man’s ability to form and control nature, the other was almost wholly the product of nature itself. Together, they represented “the extremes of this country.”<sup>64</sup>

Once the New Leicester Longwool was fixed as an improved breed able to produce generation after generation in conformity with its type, the breed’s influence spread rapidly throughout Great Britain. Both Bakewell’s methods and his breed were adopted by “enlightened” breeders throughout the United Kingdom. Some followed his lead by inbreeding their own stock in order to “fix” desired characteristics, but most crossed their preferred breed with an already improved type, usually the Dishley.<sup>65</sup> The desirability of the New Leicester was such that Bakewell was able to exert a monopolistic influence on the market for improved sheep breeding. He charged dearly for the use of his stud stock and maintained tight control over their reproductive capacities: while at the height of his career, other breeders could pay the exorbitant price of £300-£400 to use his rams on their own ewes for a single season, provided they agreed to castrate all male offspring; ewes of his improved type were never available for widespread use.<sup>66</sup> Other eminent breeders who

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<sup>62</sup> A. H. Archer and James Sinclair, *Domestic Breeds and their Treatment* (London: Vinton and Co., 1896), p. 12.

<sup>63</sup> Brown, *Sheep Farming*, p. 29.

<sup>64</sup> *Ibid.*

<sup>65</sup> The other improved breed of sheep coming into influence at this time was the Southdown breed.

<sup>66</sup> Ritvo, “Possessing Mother Nature,” p. 416.

agreed to let their own stock upon similar terms (although not at such a high profit) were, for the hefty sum of £100, granted membership in the select brotherhood of the Dishley Society, and given unlimited access to Bakewell's studs. Together, these means directed the use of the Dishley's reproductive potential, and capitalized upon its "genetic template," a business development easily as revolutionary in the realm of livestock breeding as the reformulated breed itself.<sup>67</sup>

Notwithstanding the outrageous costs of access to the New Leicester Longwool, its influence of spread far and wide. By the first decades of the nineteenth century, few breeds remained in existence without some mixture of Leicester blood. Even in places where doubts "as to the merits" of the new breed prevailed, such as Sherborne in Gloucestershire, "even the advocates for the old native breed allow a cross from the latter, if not carried too deep, to be an improvement."<sup>68</sup> And the influence on British stock was profound: scarcely a breed, much less a region, remained untouched by the improved Leicester. Not only the Cornish type, but "the pure breed[s]" of Gloucestershire, Norfolk, and various other localities became increasingly rare.<sup>69</sup> Accordingly, at just the moment local breeds were gaining recognition and wider currency, their particular traits adapted for local conditions were beginning to be stamped out in favor of more generalized adaptations to a growing national market. Crossbreeding, it was well-recognized, served to sever the ties between type and locality. As Brown wrote, it was "quite possible to bring even the mountain breed"—that most different in form and habit from the Dishley—"to prefer the Leicester

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<sup>67</sup> Ibid., p. 418; also Wood, "Sheep Breeders' View," pp. 232-235.

<sup>68</sup> Rudge, *Gloucestershire*, p. 307.

<sup>69</sup> Ibid., p. 305; for the extinction of the Norfolk Horn breed of sheep in the mid-nineteenth century, see David Low, *The Breeds of the Domestic Animals of the British Islands* (London: Longman, Brown, Green & Longmans, 1842), p. 116.

lands, by simple though attentive crossing and recrossing.”<sup>70</sup> Through cross-breeding with the improved Leicester, a type formulated for the fast and effective production of meat, British breeds were increasingly homogenized as market standardization superseded the regional and even local specialization that had previously characterized British livestock.<sup>71</sup>

Concurrent with, and in part dependent upon, this standardization of local breeds, a national appetite for British (or sometimes for English) meat emerged in the nineteenth century. Population growth, supported by increased industrialization, higher agricultural yields and better nutrition supported, among other things, the emergence of a middle class in Britain beginning in the mid-eighteenth century.<sup>72</sup> A more comfortable income for more of the population in turn encouraged the growth of markets for staples and luxuries alike. Such appetites were underpinned discursively and furthered by the expansion and increasing specialization of the periodical press, which contributed to the formation of class-based and national tastes, both for cultural artifacts and pursuits, and, increasingly, for meat. Together, these developments placed a premium on the production of British meat: increased spending power meant that mutton, beef, and lamb composed a greater proportion of more people’s diets, while specialist and general readership presses increasingly emphasized this as a defining mark of Britishness.

Meat became central not only to the British diet, but to a sense of nationhood and identity, a connection that was forged in no small part through the patriotic rhetoric of

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<sup>70</sup> Brown, *Sheep Farming*, p. 28.

<sup>71</sup> Trow-Smith, *British Livestock Husbandry*

<sup>72</sup> Paul Langford, “The Eighteenth Century,” in *The Oxford History of Britain*, edited by Kenneth O. Morgan (Oxford and New York: Oxford University Press, 2010), pp. 440-47.



improvement.<sup>73</sup> The high consequence of livestock breeding in Britain was due, not only to its profitability, but to “John Bull’s respect for his own table.”<sup>74</sup> Those involved in this endeavor drew a direct connection between the efforts of stock breeders to perfect the meat-making capabilities of their stock and the well-being of the Great Britain. A healthy population was the mark of a healthy nation, and for Britain, whose population was burgeoning at this time, a supply of adequate and wholesome food was a primary concern.<sup>75</sup> John Hunt held strong views about the ways in which a love of country could be expressed through agricultural undertakings.<sup>76</sup> Although he was willing to concede that it was “more the business of the politician” than of a physiologist such as himself to determine “the degree of population which would be most consistent with the happiness of Great Britain,” it was manifest that “the increase of population and the improvements in agriculture must of necessity be connected with each other.” Thus he held that it was “the first duty of the agriculturist to make the most produce of the soil.”<sup>77</sup> Indeed, “if patriotism [was] not an empty name,” Hunt cried from the pages of a self-published pamphlet,

so long as the power, the dignity, and the prosperity of a country can be supposed to depend upon the health and happiness of a people, that the sacred character of the patriot will appear in no less splendour in the agriculturalist, who supplies the poor with wholesome food, than in the soldier who defends his country with the sword.<sup>78</sup>

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<sup>73</sup> For an example of a work that locates this at the center of British identity, see Ben Rogers, *Beef and Liberty* (London: Chatto & Windus, 2003). See also Ritvo, *Platypus and Mermaid*, p. 200.

<sup>74</sup> Brown, *Sheep Farming*, p. 31.

<sup>75</sup> James Vernon discusses the inverse of this—hunger as political critique—in *Hunger: A Modern History* (Cambridge and London: Belknap/Harvard University Press, 2007). For the impact of demography in world history, and particularly the effect of Europe’s population explosion in the early modern period, see Kenneth Pomeranz, *The Great Divergence: China, Europe, and the Making of the Modern World Economy* (Princeton and Oxford: Princeton University Press, 2000). See also Chris Otter, “Civilizing Slaughter: The Development of the British Public Abattoir, 1850-1910,” in *Meat, Modernity, and the Rise of the Slaughterhouse*, edited by Paula Young Lee, (Durham, NH: University of New Hampshire Press, 2008), pp. 89-106.

<sup>76</sup> See chapter 2 of this dissertation.

<sup>77</sup> Hunt, *Memoir*, p. 22-23.

<sup>78</sup> *Ibid.*

Though rarely stated in such effusive terms, similar views on the importance of agricultural production in general, and breed improvement in particular, were widely held. John Sinclair declared this “so great an operation” that “the public alone [was] equal” to its task.<sup>79</sup> Improvement served not merely to line the pockets of the likes of Robert Bakewell. Rather, individual profit was tied to national gain. When a breeder was convinced “that a change of breed will suit his pasture, and be more profitable than the one he is accustomed to,” everybody benefited. The grazier “derive[d] more advantage by purchasing that sort” for fattening, and the butcher from a “carcase...much in request with the customer he serves.” The consumer benefited from a supply of superior meat “in point of taste and flavour,” the currier from a “pelt or skin [that]...answer[ed] his purpose better,” and the manufacturer, for whom “the wool of the breed recommended can be worked up into better cloth, for which there must always be a greater demand, and a better price at the market.”<sup>80</sup> Such a dense web of connection between production, industry, and consumption enabled improvers to argue forcefully for the broad social and political weight of their undertakings.

For some engaged in the work of improvement, providing food for Britain’s growing population was of the utmost importance. Thomas Rudge held that “profit to the breeder, and produce to the consumer” were “the two grand objects” of improvement, and in the case of sheep, never should the improvement of wool come at the expense of “the increase of mutton.” It mattered little to the farmer, he argued, whether his profits came from coarse or fine wool, or “whether his stock consists of large or small carcasses,” so

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<sup>79</sup> Sinclair, *Observations*, p. xviii.

<sup>80</sup> *Ibid.*

long as they could be made “equally ready for the market.”<sup>81</sup> But it was “of material consequence, both to him and the public, that the greatest possible quantity of meat, with a reasonable proportion of fat, should be fed on a given quantity of land.” Any other consideration, Rudge argued, “should yield to the supply of that produce which affects the support of life.”<sup>82</sup>

The strength of these claims was such that, over time, Britishness became instantiated in the flesh and forms of these breeds themselves. Increasingly, it was what differentiated the British from other peoples. By the mid-nineteenth century, a writer for *Chambers's Journal* attributed Britons' greater stature, strength, and “physical superiority” over the French to their “better supply of Butcher-meat,”<sup>83</sup> and by the close of the nineteenth century, even their foreign rivals recognized the British national talent for producing (and consuming) meat, and more than this, their ingenious ability to instantiate these traits in the very form of their domestic animals. According to one French agriculturalist, the English fondness for “roast meat” showed in the “prominent loins...[and] small flaccid rump” of English breeds, while the “prominent and spacious” rear of the typical French breed spoke to the appetite in France for “pot-au-feu.”<sup>84</sup> Consuming meat made Britons British. Without a steady supply of quality meat, boosters argued, “‘John Bull’ would soon become as watery as a turnip, and as sodden-headed as a diseased potato.”<sup>85</sup>

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<sup>81</sup> Rudge, *Gloucestershire*, pp.305-306.

<sup>82</sup> *Ibid.*

<sup>83</sup> “Our Meat-Supply,” *Chambers's Journal of Popular Literature, Science and Arts* 257 (28 November 1868), p. 760.

<sup>84</sup> Quoted in “Typical Differences in English and French Beef Cattle,” *New Zealand Farmer* 21(10) October 1901, p. 444.

<sup>85</sup> “Imported Cattle and Disease,” *Livestock Journal and Fancier's Gazette*, 2 (27 August 1875), p. 424.

*The limits of improvement*

The formation of a national taste for meat supported, and was supported by, the homogenization of breeds, itself achieved through the dissemination of improved varieties. By 1870, William Brown could write that, “so much have pure breeds”—referring to the old, regional or local varieties that predominated at the turn of the nineteenth century—“become now intermixed, not only with each other, but with each other’s crosses” that an entire volume “on the subject” was warranted.”<sup>86</sup> However, improvement had its limits, and very often the success of an introduced breed was constrained by regional climatic and environmental factors. As Brown wrote, “All improvements invariably radiate from a centre, but they do not flow equally in all directions—the soil, altitude, rainfall, and temperature, in the case of agriculture, together with man’s prejudices, tending individually and in combination to turn aside or altogether dam up the regular flow.”<sup>87</sup> The distribution of breeds, no less than other agricultural improvements, “has also been regulated by these influences.”<sup>88</sup>

These limits held for both improved and unimproved varieties, and became increasingly evident as the influence of the New Leicester Longwool spread beyond its home county. Even when a breed had “been made for the country, and not the country for it,” certain circumstances prevented it from prospering.<sup>89</sup> Some “respectable farmers” in

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<sup>86</sup> Brown, *Sheep Farming*, p. 24.

<sup>87</sup> *Ibid.*, p. 115.

<sup>88</sup> *Ibid.*

<sup>89</sup> *Ibid.*, p. 28.

Cornwall, for example, “still doubted...whether sufficient advantages have been derived by their introduction,” despite the relatively long use of the Dishley breed in that region. They reported that “the stock produced by the cross” did not thrive—they were “deficient in wool, particularly under the belly,” they “lamb[ed] with difficulty, and [were] bad nurses,” all classic signs of what contemporaries called degeneration. Moreover, they were “too tender for the wetness of the climate” and “also liable to the foot-rot,” a common complaint among breeders occupying fens, marshes, and wetlands who introduced exogenous breeds to their humid pastures.<sup>90</sup> As Brown put it, “[e]ven with good food, sheep cannot lay on mutton when their bed is wet and cold.”<sup>91</sup> At the other climatic extreme, Improved Leicesters were found eminently unsuited for higher elevations. Though it boasted the greatest geographical range of improved breeds, its “distribution is the one with least limit of elevation”—the “alluvial plains and sandstones...claim the whole of the Leicesters of England,” their “altitude limited by 700 feet.”<sup>92</sup> Indeed, “nothing can be more absurd, or preposterous,” declared John Sinclair in allusion to the Dishley breed, “than to suppose that a fat animal, incumbered with a great quantity of wool, can ever be calculated for a hilly, and far less for a mountainous district.”<sup>93</sup>

The effect of climate was such that, even for an improved breed like Southdown sheep, local origins held fast to type. These were a class adapted to the “peculiar habitat” of the chalky hills of the South of England improved in the early nineteenth century.<sup>94</sup> Despite the best efforts of their improvers, they retained “the tinge of their origin, which

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<sup>90</sup> Worgan, *Cornwall*, p. 149.

<sup>91</sup> Brown, *Sheep Farming*, p. 99.

<sup>92</sup> *Ibid.*, p. 116.

<sup>93</sup> Sinclair, *Observations*, p. v-vi. Original spelling preserved.

<sup>94</sup> Brown, *Sheep Farming*, p. 38.

still adheres to them, [and] gives them a hardiness that would otherwise be remarkable.”<sup>95</sup> Indeed, “So much do these sheep keep to the lime, that it may be safely said, were there more arable surface on the Down hills, or a much greater depth of other soil not of a chalky nature, the breed of sheep would have to be changed—probably to the Leicester.”<sup>96</sup> So close was the relationship between the Southdown’s character and its native soil that the son of its foremost improver, T. Ellman, claimed that, were the breed removed to Leicestershire, “the fine flavour of Southdown mutton may be changed in time to the coarse, tallowy meat of the Leicester or other long-woolled sheep. Nor will the flesh alone be interfered with, but the wool and every other feature will become assimilated to those of the natives of the different localities.”<sup>97</sup> On the flip side of this, farmers in the neighborhood of Hillinton, Norfolk, found the improved Southdown unsatisfactory: they were “too tender for this country, the land here being too open for them,” as F. Boys reported in the *Annals of Agriculture*. Such objections, Boys protested, were “ridiculous!” given that Ellman’s own flock of 500 ewes, grazed on the Southdowns, produced 620 lambs in one season on land “as much exposed, and as open, as any lands can possibly be.”<sup>98</sup>

The importance of compatibility between locality and type was further evident in the tendency of local breeds to languish outside of their native circumstances. Gooch saw this at work in the fens of Cambridgeshire when cattle from the neighboring county of

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<sup>95</sup> Ibid, p. 29.

<sup>96</sup> Ibid, p. 116.

<sup>97</sup> Quoted in Archer and Sinclair, *Domestic Breeds and their Treatment*, p. 13.

<sup>98</sup> F. Boys, “Agricultural Minutes, Taken during a Ride through the Counties of Kent, Essex, Suffolk, Norfolk, Cambridge, Rutland, Leicester, Northampton, Buckingham, Bedford, Hertford, Middlesex, Berks, and Surry, in 1792” *Annals of Agriculture* 19 (1793), p. 120.

Suffolk were tried. “An opinion prevails at Islesham that the Suffolk cow will not thrive in the fens,” he wrote, though the two locales were separated by less than thirty miles as the crow flies. A local farmer had “proof of it, by having purchased some from Suffolk, and having kept them with his other cows two years, during which they gradually declined.” The insalubrious effect of the fens on this type was confirmed when the farmer “sold them [back] to the person of whom he bought them, and they were soon restored to their original health.”<sup>99</sup>

This Cambridgeshire farmer’s experience was a lesson that colonial breeders would learn again and again in the second half of the nineteenth century as they worked to adapt livestock bred for the various conditions of the British Isles to the dry heat of Australia, the long winters of western Canada, or the steep hillsides of New Zealand.<sup>100</sup> Breeds produced for one set of circumstances were not always suited to another: “the physical character of a country”—its soil, temperature, rainfall, and vegetation—had “marked influences” on the variety of kinds of livestock, “not only on those introduced from different habitats, but even on those whose constitutions have been long inured to the particular ranges where any change of climate may be brought about.”<sup>101</sup> The natural aptitude of domesticated populations to alter in response to external conditions—be they “natural forces,” deliberate selective influences, or some combination thereof<sup>102</sup>—was the very mutability that improvers used to reformulate their breeds for higher output in the late eighteenth century,

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<sup>99</sup> Gooch, *Cambridgeshire*, p. 266.

<sup>100</sup> The extreme pitch of the topography in some parts of New Zealand necessitated breeding for “well-sprung” hocks—the joints of the hind legs—in cattle. Oral history interview with Philip Bamett, Akitoa, New Zealand, 24 June 2010. See also Robert Peden, “Pastoralism and the Transformation of the Open Grasslands,” in *Seeds of Empire*, edited by Pawson and Brooking, pp. 73-93.

<sup>101</sup> Brown, *Sheep Farming*, p. 79.

<sup>102</sup> Lawrence Alderson, “Conserving the Cattle of Britain,” *The Ark*, 4 (May 1977), p. 157.

inducing their stock to reach maturity more quickly, and to achieve greater extremes of woolliness or fleshiness. But in the colonies, adaptation to novel environments would be interpreted as a loss of control over the character of their breeds, and perhaps most worrisome, as a threat to their Britishness.

For the Soay, a different sort of value was at stake in the tendency for a breed's natural mutability to respond to its environment, and thereby to produce overall change in its character. Soays seemed especially deeply conditioned by their environment. Extreme isolation, restricted exposure to the climate of a single tiny island, centuries of human neglect—these amounted to an unusually strong force of environmental, rather than human, influences. Conservationists' view that the breed's genome was dependent on "its correct environment" was thus all the more compelling. Hindson's colleagues in the Rare Breeds Survival Trust advocated that "the true location of a breed" be respected in its conservation, and that of other breeds, "for only in this way is it likely that the typical genotype [of a breed] can be preserved."<sup>103</sup>

As in the livestock breeding of the eighteenth century, the question of whether Soay sheep depended on their surroundings for their unique identity as a breed remained largely unanswered in the last quarter of the twentieth century. Enthusiasts who kept the sheep on the mainland tried to "run" their Soays "as far as possible under natural conditions."<sup>104</sup> They reported with delighted frustration the difficulties that persisted in herding them, evidence of their continuing wild nature: on one large farm park, "only a cine camera could do justice to the ensuing chase" when the flock's owners attempted a

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<sup>103</sup> Ibid, p. 158.

<sup>104</sup> Lawrence Alderson, "News from the Technical Consultant: Soay Sheep," *Ark* 5 (February 1978), p. 39.



quarterly “catch-up” of their free range Soays.<sup>105</sup> On the other hand, the color distribution in the coats of those on the mainland soon seemed to “vary dramatically” from that observed in the “feral flock” still residing on Hirta, suggesting pressures other than those exerted on the sheep in their native habitat were at work, or the absence of natural selective forces that eliminated other colorations on St Kilda. The difficulty of sorting out the influence of artificial selection at the hands of their human keepers from the “natural” effects of environmental pressures ensured that the question of whether a Soay sheep, transposed to the South of England, was still a Soay, remained unanswered. That people attempted to solve it at all is strong evidence of its importance.

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<sup>105</sup> “The Knebworth Flock,” *The Ark*, 2 (May 1975), p. 117.



## Chapter 2

**Much Ado About Mutton**

Merino sheep are not said to be native to Britain, but to Spain, where for centuries they were herded to and from mountainous pastures each summer.<sup>1</sup> They are relatively small, thrifty sheep, with long legs and lean bodies, and at the turn of the nineteenth century, they became a source of great fascination to British breeders. Ovine perfection of the British sort was typically embodied in rotund, Bakewellian proportions. By contrast, the merino's "awkward appearance" was a "source of objection" among British breeders. Their shapes "differ[ed] very widely" from those which in Britain were "considered as models of symmetry and good form."<sup>2</sup> They were leggy, rangy, with long necks and horns so "prodigious" as to give the rams "an unsightly appearance in the eyes of those who have

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<sup>1</sup> Sheep were first domesticated in western Asia, either by "the herding and controlling of wild flocks," or by "the taming and rearing of young animals that were imprinted on humans as their leaders." Reliable data indicate that sheep (and goats) were domesticated circa 6000-7000 BCE "within the region of western Asia and that early pastoralists spread rather rapidly westwards into Europe and probably north and east into Asia and the Far East." Juliet Clutton-Brock, *A Natural History of Domesticated Mammals* (Cambridge: Cambridge University Press, 1999 [1987]), p. 74.

<sup>2</sup> George Tolle, "Merino Sheep," *Annals of Agriculture* 44, no. 256 (1806), p. 9.

been accustomed to hornless sheep,” as most native British breeds were.<sup>3</sup> Their “outlandish forms” and “throatiness”—the wattles and folds of skin accumulated under the animals’ chins—seemed to display an utter want of attention on the part of Spanish breeders. As one prominent promoter of the breed in Britain remarked, “in general they have come to us in a very neglected state”—at least with regard to their meat-making properties.<sup>4</sup> When it came to the question of their wool, which was universally acknowledged to be superior, it was harder to find fault with merinos.

Nevertheless, in the first decade of the nineteenth century, a series of debates over the merino’s recent introduction to Great Britain broke out in the pages of the *Agricultural Magazine, or, Farmers’ Monthly Journal of Husbandry and Rural Affairs*. On one hand, proponents of the breed, most of whom hailed from the landowning classes, advocated its widespread adoption on account of its wool. Merinos produced wool so fine and in such volume that no single British breed was capable of matching it in either quality or quantity. On the other hand, a less well-connected but no less outspoken few, for the most part claiming to represent the interests of “practical farmers,” opposed the foreign breed on account of its mutton, or more precisely, on account of the perceived superiority of the flesh of native British breeds. These adversaries rallied around the New Leicester Longwool, upholding Robert Bakewell’s breed as the “zenith of perfection” when it came to symmetry and the ability to produce enormous quantities of fat flesh.<sup>5</sup> In their views, the New Leicester Longwool was Britain’s best ally, albeit necessarily a sacrificial one, in the

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<sup>3</sup> Ibid, p. 10.

<sup>4</sup> Ibid, p. 10, 9.

<sup>5</sup> John Hunt, “On the Perfections and Superiority of the Leicestershire Breed of Sheep,” *Agricultural Magazine, or, Farmers’ Monthly Journal of Husbandry and Rural Affairs* 3, no. 14 (August 1808), p. 88.

all important occupation of feeding Britain's masses. By a number of calculations, some economic and some climatic, fans of the Dishley breed challenged the claims of merino enthusiasts, questioning both the profitability and quality of merino wool grown in Britain, while arguing that the loss of meat that would necessarily result from a widespread adoption of the relatively small, skinny breed was too great a cost. The merino's champions countered with attempts to convince their audience of the superiority of both merino wool and mutton as grown by agriculturalists in Britain, and by arguing that establishing a domestic source of fine merino wool was of the utmost national significance.

These debates were protracted, the first clash erupting in 1802, and the last battle over the merino—in the pages of the agricultural press at least—only subsiding in 1812. Though the early debates began amicably enough, both sides soon shed any pretense of politeness. As early as 1802, a proponent of the Dishley breed writing under the name “Practicus” asked, “Can a farmer ever hope to pay his rent with a flock of deformed, unthrifty, diminutive sheep, and a few tods of bastard wool?”<sup>6</sup> Caleb Hillier Parry, the author of a well-reputed treatise on sheep breeding and anatomy declared these claims “gross misrepresentations and illogical conclusions,” and called his interlocutor “flippant, declamatory, dogmatical, and expressive of the most profound ignorance.”<sup>7</sup> When it came to defending his chosen breed, though, Parry had more trouble refuting Practicus's allegations. The highest praise he could muster with respect to the merino's form and flesh

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<sup>6</sup> Practicus, “Remarks on the Duke of Bedford's Discontinuing His Premiums to the New Leicester and Southdown Breed of Sheep, and on Lord Somerville's and Dr. Parry's Encouragement of the Spanish Breed,” *Agricultural Magazine* 6, no.35 (June 1802), p. 434.

<sup>7</sup> C. H. Parry, “Dr. Parry, In Answer to Practicus, on the Breed of Sheep,” *Agricultural Magazine* 7, no. 36 (July 1802), p. 8, 9. Cf. Caleb Hillier Parry, *Facts and Observations Tending to Shew the Practicability and Advantage, to the Individual and the Nation, of Producing in the British Isles Clothing Wool, Equal to That of Spain: Together with Some Hints Towards the Management of Fine-Woolled Sheep* (London: Cadell and Davies, 1800).

was that his lambs were “in point even of fashionable make, . . . not despicable,” and that, having selected solely on the basis of wool over the course of a decade, when he eventually turned to “a proper selection and management” of the carcass, he would doubtless “attain considerable excellence as to the symmetry of the carcass.”<sup>8</sup> Later salvos in the ongoing battle were even more hostile. When John Hunt of Loughborough sparked another round of poison pen letters to the *Agricultural Magazine*’s in August 1808 by calling the merino “high shouldered” and “hollow backed,” the “blind zealots of the Merino cause” retaliated, insulting Hunt’s views as “insipid and pointless inanities,” his favored breed as “living Dishley oil barrels,” and he himself in unflattering terms as “the doughty defender of Dishley blubber.”<sup>9</sup>

While controversy in this particular publication was common during the decade in which the merino debate raged, no other topic seemed to generate quite so much vituperation. The unusual duration of the quarrel, and the extreme vilification of men and sheep alike that it produced, suggest that the debate cut to the quick of the issues concerning British livestock breeding. It raised the same questions about type and locality as did the Soay breed of sheep examined in Chapter 1, but intensified the stakes. The problem the merino posed was not merely a matter of which British breed to put where, but rather that native British types themselves seemed under attack from a foreign interloper.

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<sup>8</sup> Ibid, p. 10.

<sup>9</sup> John Hunt, “Perfections and Superiority of the Leicestershire Breed,” p. 90; Hunt, “On the Imperfections and Inferiority of the Merino Sheep; and the Impropriety of Introducing them into this Country, in Answer to Mr. Thompson,” *Agricultural Magazine* 4, no. 19 (January 1809), p. 57; Cultivator Middlesexensis, “On the New Leicester and the Merino Sheep, in Answer to Mr. Hunt,” *Agricultural Magazine* 3, no. 15 (September 1808), p. 188; Benjamin Thompson, “Refutation of Mr. Hunt’s Absurdities,” *Agricultural Magazine* 3, no. 18 (December 1808), p. 360; Benjamin Thompson, “The Merino Cause—Description of His Majesty’s Spanish Sheep—and Final Reply to the Dishley Quack,” *Agricultural Magazine* 4, no. 21 (March 1809), p. 160.

Moreover, because of the political and economic context in which this episode played out, debate over climate, heredity, and breeding merino sheep in Britain took on added urgency. The aggressive expansionism of Napoleonic France threatened to cut off Britain's continental supply of merino wool, making efforts to establish a domestic source of merino wool even more pressing. The very specter of prolonged war, however, only affirmed for the breed's opponents the paramount importance of British food security, which, they claimed, rested on propagating New Leicester Longwools—not merinos—as the most efficient converters of feed into fat mutton. Thus, debate over attempts to establish the merino in Britain ultimately came down to the question of whether to breed for British meat or Spanish wool, inherently irreconcilable aims because they demanded that the breed conform to the cultural and economic conditions of British breeding in the first place, and yet resist the effects of environment and climate on its wool in the second.

Each side of the debate professed to have the interests of the nation at heart, but what these were, and how they were best to be defended, were open to interpretation. Elite agriculturalists—the landed gentry who dabbled (or more than dabbled) in agricultural improvement—promoted domestic fine wool production and the consequent profits of industry as the key to national stability, while on the other side, professed “practical farmers” argued that securing the sustenance of its population with domestic mutton production was of paramount importance. The Spanish breed became a fulcrum for ideas about class and nationality, and about the utility of patriotism as a way to debate Great Britain's place within a wider European context during a time of crisis, and later the Empire. In their efforts to encourage the breed, merino enthusiasts tried to have it all,

taking advantage of fluid understandings of heritability and environmental influence to suggest that the combined influence of selective breeding and the climate of the British Isles could improve both the merino's form and flesh, without deteriorating its wool. But these were ambitious claims, and perhaps too sanguine, at once overestimating the skill of British breeders, and underestimating the degree and significance of the creolization that attended the merino's naturalization.

### *War and fleece*

That this controversy peaked in the decade 1802-1812 was no accident. The Napoleonic Wars—some twenty years of conflict lasting until the Battle of Waterloo in 1815, during which Britain was at war with France, and France at war with the rest of Europe, punctuated by spells of uneasy peace in 1802-3, and 1805-9—defined the debate over the merino's place in Britain. Though sheep breeding seems an activity far removed from warfare, endemic conflict unsettled economic as well as diplomatic relationships, and this had important consequences for the sheep and wool industries in Britain. In the first place, hostility in Europe actually stimulated domestic manufacture, both materially as Britain's factories accelerated production to clothe its own armies, and less directly, as a means to reduce reliance on centers of production in Northern Europe, especially the Low Countries (Belgium and the Netherlands) that might, at any moment, be incapacitated by strife or fall into the hands of Britain's foes.<sup>10</sup> The effect of this was to increase demand for the raw

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<sup>10</sup> James Bischoff, *A Comprehensive History of the Woollen and Worsted Manufactures, and of the Natural and Commercial History of Sheep, from the Earliest Records to the Present Period*, 1 (London: Smith, Elder



wool used in production at just the moment that Britain's access to it was most precarious. When it came to the long and relatively coarse fibers used in worsted manufacture, which produced heavy blanketing and carpets, British supply remained secure: these were the staples produced in excellence and abundance by longwooled breeds, including the New Leicester Longwool championed by the likes of Practicus and John Hunt. For the manufacture of finer woolens, though, conflict in Europe, and hostility between Britain and its continental trading partners, put the industry's access to the fine wool of the merino in jeopardy. Foremost among the reasoning behind the merino's introduction to Britain, then, was the argument that a domestic supply of fine wool would release British industry from reliance on foreign trade.

Why Great Britain should need to import and establish an entirely new breed for this purpose, given the sense that the British Isles were uniquely suited to the growth of sheep and wool (Chapter 1), and the prevailing certainty that the ovine products of Great Britain were "the best in the universe," seemed puzzling to some contemporaries.<sup>11</sup> Ironically, it was tied at least in part to the same enthusiasm for breed improvement that had produced the merino's ovine rival, the New Leicester Longwool. Although by the early nineteenth century Spain had already been known for several hundred years as the source of the finest, whitest wool in Europe, the emphasis on specialized breeding that marked British agricultural practice after about 1750 only widened the gap between Spanish merinos and fine woolled British breeds like the Ryeland. More and more, as meat production took

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and Co., 1842), ch. 4; Bischoff, *The Wool Question Considered, Being an Examination of the Report from the Select Committee of the House of Lords, Appointed to take into Consideration the State of the British Wool Trade, and an Answer to Earl Stanhope's Letter to the Owners and Occupiers of Sheep Farms* (London: J. Richardson, 1828), p. 27.

<sup>11</sup> Practicus, "Remarks," p. 434.

precedence over wool, attention to the carcass—its shape, its symmetry, and the rate at which sheep reached maturity—increasingly came at the expense of the quality of the wool.

As Bakewell and his acolytes solidified the ability of native British breeds to produce succulent fatty joints, mutton superseded wool in significance for perhaps the first time in the history of British sheep breeding. The need to produce wool of various types for domestic manufacturing was the driving force that led to the establishment of two broad types of sheep in the British Isles prior to the eighteenth century: shortwooled ones subsisting largely on hillsides, heaths, and mountainous terrain; and longwooled ones dwelling in lowlands, downs, and marsh lands. Within these categories, fine distinctions according to locality and breed proliferated (Chapter 1). At the same time, with mechanized production rising in the eighteenth century, changing markets and technologies increasingly demanded extremely fine fibers that could be woven into soft, luxurious cloth.<sup>12</sup>

Without doubt, the best breed of sheep for producing such fine wool was the merino, whose origins lay in the ancient pastoral economy of Spain, and whose fine wool was the envy of northern European manufacturing centers. Both the wool and the sheep that grew it were coveted, particularly by northern European manufacturing centers, France, Britain, Saxony and the Netherlands not least among them. Until the third quarter of the eighteenth century, the sheep that produced Spain's famous wool were virtually unknown outside

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<sup>12</sup> Bischoff, *The Wool Question*, p. 28. Thomas Rudge noted that the mechanization of wool manufacture in Great Britain "tend[ed] to increase the consumption, and of course to raise the value of fine wool in proportion." Thomas Rudge, *General View of the Agriculture of the County of Gloucester* (London: Richard Phillips, 1807), p. 313.

Iberia, despite the wide availability of their wool throughout Europe from the middle ages on.<sup>13</sup> As a form of live capital, sheep (like other species of livestock) have the inherent ability to reproduce themselves, imparting their characteristics, whether the capacity to produce fat mutton or fine wool, to their offspring.<sup>14</sup> The Spanish crown rightly recognized that its stake in the international wool market rested on maintaining a firm monopoly on the production of fine merino wool by exerting strict control over the reproductive capacities of the breed. Its monopoly, therefore, depended on the ability to contain this generative capacity of the sheep—the same “spirit of monopoly which prevail[ed]” in Bakewell’s restrictive terms of letting.<sup>15</sup> In practical terms for Spain, this meant tight control over the export of live animals, which was governed by the strict laws of the Mesta, an arcane and secretive corporate body that oversaw all aspects of the production of sheep and wool in Spain.<sup>16</sup>

However, by the eighteenth century, Spain’s monopoly on both the wool and the animals that grew it began to crumble. As Spain’s political might waned, both in Europe and in its American colonies, the persistent efforts of agricultural emissaries, spies, and diplomats began to pierce the veil of mystery that had shrouded the sheep and their

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<sup>13</sup> H. B. Carter, *His Majesty's Spanish Flock; Sir Joseph Banks and the Merinos of George III of England* (Sydney: Angus & Robertson, 1964), p. 3, 44.

<sup>14</sup> The term “livestock,” itself signifies the intimate connection between capital and domesticated animals. Harriet Ritvo explores the particular forms of property inherent in improved livestock at the turn of the eighteenth century in “Possessing Mother Nature: Genetic Capital in Eighteenth-Century Britain,” in *Early Modern Conceptions of Property*, edited by John Brewer and Susan Staves (London and New York: Routledge, 1995), pp. 413-26. Sarah Franklin takes a more catholic approach to the changing formulations of ovine capital in *Dolly Mixtures: The Remaking of Genealogy* (Durham, N.C.: Duke University Press, 2007). More generally, Nicole Shukin explores the signification of “the animal” in contemporary post-industrial capitalism in *Animal Capital: Rendering Life in Biopolitical Times* (Minneapolis: University of Minnesota Press, 2009).

<sup>15</sup> Rudge, *General View Gloucester*, p. 312; Ritvo, *Possessing Mother Nature*, pp. 416-418. See also Chapter 1.

<sup>16</sup> Carter, *His Majesty's Spanish Flock*, p. 6-8

management. The first merinos outside of Spain were acquired by Sweden in 1723, “with the view of improving the wretched Swedish breeds,”<sup>17</sup> but after this early start virtually no live sheep left the Iberian Peninsula until the 1760s. Spanish merinos constituted valuable diplomatic capital for the Spanish crown, and were a much-desired object of political exchange. The generous gift of 100 rams and 200 ewes bestowed on the Prince of Saxony founded the largest and most esteemed flock of merinos outside of Spain, and in 1786 Louis XVI of France acquired a sizable seed stock to establish a flock at Rambouillet outside of Paris that soon attained considerable celebrity as exceptionally fine studs.

Britain, too, was eager to receive its share of Spanish sheep, but was “one of the last powers who turned their attention towards this national concern,” because confidence in the “vast superiority” of its own British woolens had made acquiring the foreign breed seem unnecessary.<sup>18</sup> Once Sweden and Saxony had demonstrated the utility of home-grown merino sheep, Britain chose not to await the magnanimity of the Spanish monarch, instead acquiring a small population from the Estremadura region by way of Portugal in 1787.<sup>19</sup> This extraction—at best of dubious legality, and at worst an act of outright smuggling—was followed only a few years later in 1791 by a royally sanctioned gift of thirty-five ewes and five rams of the Marchioness Del Campo Di Alange’s Negretti flock, “the reputation of which, for purity of blood and fineness of wool, is as high as any in

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<sup>17</sup> George Culley, *Observations on Live Stock; Containing Hints for Choosing and Improving the Best Breeds of the Most Useful Kinds of Domestic Animals* (London: G. Wilkie, 1807), p. 237.

<sup>18</sup> *Ibid.*

<sup>19</sup> Joseph Banks, *Some Circumstances Relative to Merino Sheep: Chiefly Collected Form the Spanish Shepherds, Who Attended Those of the Flock Paular...and Also Respecting the Sheep of the Flock of Negrete* (London: W. Blumer & Co., 1809), p. 7.

Spain.”<sup>20</sup> This “treasure” (“for such,” the famed naturalist Joseph Banks assured the Board of Agriculture in 1809, “it has since proved itself to be”)<sup>21</sup> became the foundation of George III’s royal flock at Kew.

### *Royal sheep*

The king’s royal flock—a small collection of animals by any measure—became the primary stud stock for the propagation of the merino breed in Britain. Under Banks’s supervision, “Farmer George’s” flock was carefully “guarded against all danger of the admission of impure blood.”<sup>22</sup> During the early years of the flock’s existence, the monarch magnanimously bestowed animals on those agricultural worthies willing to undertake the experiment of their cultivation for the nominal charge of only a few guineas. Over time, as “the carcasses of the sheep...evidently improved” and their wool “rather gained than lost in value,” as Banks claimed in an 1802 report on the royal flock, the fixed price of these animals was raised to six guineas for rams, and two for ewes.<sup>23</sup> Beginning in 1804, in admission of their increasing value, and as a “means of placing the animals in the hands of those persons who set the highest value upon them, and [were] consequently the most

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<sup>20</sup> Joseph Banks, *A Project for Extending the Breed of Fine-Wooled Spanish Sheep, Now in the Possession of His Majesty, into All Parts of Great Britain, Where the Growth of Fine Clothing Wools Is Found to Be Profitable* (London: W. Blumer & Co., 1804), p. 1. In return, George III sent “eight fine English coach horses” to the Marchioness. *Ibid.*

<sup>21</sup> Banks, *Some Circumstances Relative to Merino Sheep*, p. 8.

<sup>22</sup> *Ibid.*, p. 10.

<sup>23</sup> Joseph Banks, “A Report of the State of His Majesty’s Flock of Fine-Wooled Spanish Sheep, During the Years 1800 and 1801; With Some Account of the Progress that has been made towards the Introduction of that Valuable Breed into those Parts of the United Kingdom where Fine Cloathing Wools are Grown with Advantage.” *Annals of Agriculture* 40, no. 233 (1803), p. 357.

likely to take proper care of them,” the royal merinos were sold by auction.<sup>24</sup> In July of that year, in spite of “heavy and almost incessant rain,” and rather alarming defects among the sheep for sale, the first royal auction of merino sheep, held at Kew, was well attended, and the commerce brisk and profitable.<sup>25</sup> Bidding was opened by John Macarthur, a pioneer of Australian settlement who attended the auction to procure stock for the recently-claimed colony of New South Wales.<sup>26</sup> In the first transaction of the day, he expended more than £6 on a single ram, despite the fact that it was, in the polite terms of the *Agricultural Magazine*, “labouring under a temporary privation of sight.”<sup>27</sup>

Healthier rams fetched as much as 38 guineas. High prices and willingness to overlook the stock’s defects were signs of enthusiasm for the breed—one sheep described as “at present blind” still fetched more than twenty guineas, while another suffering from foot rot made £12.<sup>28</sup> Such popularity was reinforced by the haste of newly-minted merino owners to spirit home their purchases. As a writer for the *Agricultural Magazine* reported in the following month’s issue, “such was the eagerness of the buyers to bear off their lots” that one gentleman, having failed to arrange prior conveyance appropriate for an ovine cargo, rode off with his newly purchased sheep as a passenger in his chaise.<sup>29</sup>

Improbable as it was, this scene repeated itself at the following year’s sale where, once more despite the apparent shortcomings of the breed in general (even its fiercest promoters in Britain acknowledged that merino sheep were “very far from handsome in

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<sup>24</sup> Banks, *Some Circumstances Relative to Merino Sheep*, p. 8.

<sup>25</sup> “Sale of Part of his Majesty’s Flock of Spanish Sheep,” *Agricultural Magazine, or, Farmer’s Monthly Journal of Husbandry and Rural Affairs* 11, no. 61 (August 1804), p. 145.

<sup>26</sup> The colony of New South Wales was established in 1788.

<sup>27</sup> *Ibid.*, p. 146.

<sup>28</sup> *Ibid.*, p. 145.

<sup>29</sup> *Ibid.*, p. 147.

their shape”),<sup>30</sup> and the king’s flock in particular (high mortality from disease among the stock sold in 1804 “had been hinted at” by that year’s purchasers),<sup>31</sup> commerce in 1805 only increased. In the opening sale of the day, a shearling ram “of the worst appearance of the whole” sold for more than £22. Handsomer animals followed, reaching prices as high as 64 guineas in one case.<sup>32</sup> As new owners loaded their purchases into carts “with an enthusiasm of the most laudable kind,” one especially eager buyer was seen “helping a ram into a carriage!”, and as he was “a man of fashion,” the “scene of business presented a picture of the greatest hilarity.”<sup>33</sup>

As entertaining as these instances must have been, they are more than a mere source of amusement. Not only do they speak to the growing passion for merino sheep in Britain in the early years of the nineteenth century, they reveal the degree to which this enthusiasm was a freak of the upper classes.<sup>34</sup> The merino’s proponents hailed from the highest orders. Even its humbler champions were landed farmers influential in important breed societies of the day. Benjamin Thompson, Caleb Hilliar Parry, George Tollet, and Nehemiah Bartley, for example, all had close ties to the exclusive Bath and West of England Society. Among the breed’s more lofty enthusiasts, John Southey Somerville (the fifteenth Lord Somerville) possessed, in addition to his title, the means to undertake his own merino-buying expedition to Iberia. Following “the example of his Sovereign,” Somerville sailed to Portugal in 1798 “for the sole purpose of selecting by his own judgment, from the best

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<sup>30</sup> Ibid, p. 144.

<sup>31</sup> “The King’s Annual Sale of Sheep,” *Agricultural Magazine* 13, no. 73 (August 1805), p. 132.

<sup>32</sup> Ibid.

<sup>33</sup> Ibid, p. 134.

<sup>34</sup> At subsequent auctions, prices realized only continued to rise, peaking at £74 for a ram in 1808. Banks, *Some Circumstances Relative to Merino Sheep*, p. 9.

flocks in Spain, such sheep as joined in the greatest degree the merit of a good carcase, to the superiority in wool.”<sup>35</sup> This costly undertaking resulted in “a flock of the first quality” and the approbation of his peers.<sup>36</sup> Joseph Banks applauded Somerville’s initiative as an act worthy of “the highest commendation.”<sup>37</sup> Indeed, any who undertook to experiment with merino sheep—“all,” as Banks put it, “who honour the Fleece”—were, in the eyes of the breed’s supporters, patriots of the highest order.<sup>38</sup>

### *Patriots of the new-fangled kind*

Patriotism was a key element in the debate over the merino in Great Britain, and each side mustered claims to national sentiment in support of its preferred breed. Proponents of merino sheep couched their arguments in terms that linked the domestic production of fine wool to the patriotic defense of British industry, and independence from foreign trade. Worry over economic dependence on foreign supplies had been growing toward the end of the eighteenth century: modern estimates suggest that British demand for Spanish wool had grown by a factor of sixteen over the course of the eighteenth century.<sup>39</sup> By the turn of the nineteenth century, of the 8 million pounds of wool imported to Britain, 5 . million came from Spain,<sup>40</sup> but the volume of Spanish supply was fluctuating wildly with the continental wars. Spanish imports sank to a mere 2.5 million pounds in the late 1790s, but

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<sup>35</sup> Banks, “Report (1800-1801),” p. 356.

<sup>36</sup> *Ibid.*

<sup>37</sup> *Ibid.*, p. 354.

<sup>38</sup> *Ibid.*, p. 355.

<sup>39</sup> Carter, *His Majesty’s Spanish Flock*, p. 426.

<sup>40</sup> E. Lipson, *A Short History of Wool and its Manufacture, Mainly in England* (Melbourne and London: William Heinemann, Ltd., 1953), p. 31.



rallied in the range of 4.5 to almost 7 million between 1800 and 1806. In 1807, Britain managed to import an astonishing 10.3 million pounds of Spanish wool before that figure plummeted in the wake of Napoleon's invasion to only 1.9 in 1808. 1809-10 were relatively good years, averaging about 5 million, but 1811 and 1812 were low years again, in the range of only 2 million pounds imported.<sup>41</sup>

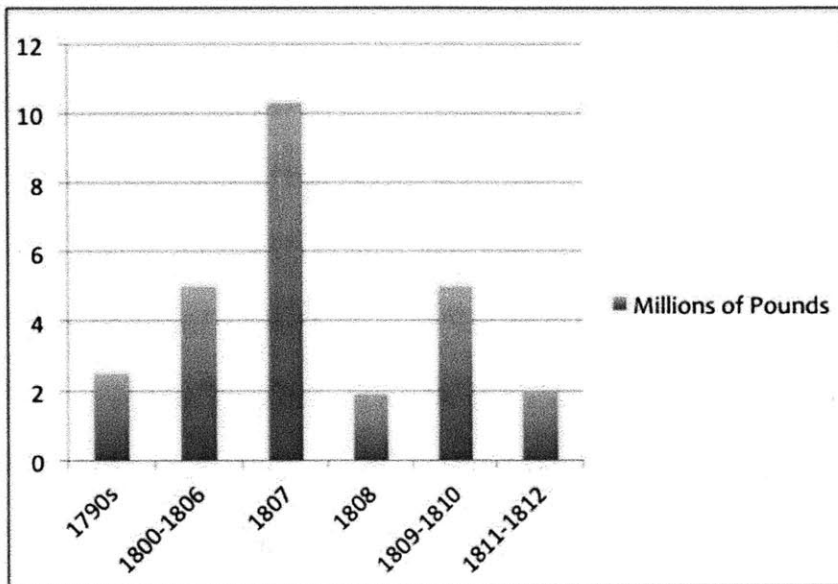


Figure 1. Merino wool imported from Spain, 1790s-1812. Based on Archibald Hamilton, "On Wool Supply," *Journal of the Statistical Society of London* 33, no. 4 (December 1870), p. 503.

These erratic swings were a cause for major concern. Somerville gave voice to this growing unease when he warned the Board of Agriculture as early as 1799 that "the political situation of Spain may be such, as to shut out, or at least materially increase the present difficulty of importing her wool into this country; in which case, it is a matter of the utmost national importance, that the fine woollen trade of Great Britain should suffer

<sup>41</sup> Archibald Hamilton, "On Wool Supply," *Journal of the Statistical Society of London* 33, no. 4 (December 1870), p. 503.

nothing in reputation.”<sup>42</sup> Such concerns seemed all the more pressing after Napoleon’s forces invaded Spain in 1807. To hear the breed’s proponents, it seemed that Napoleonic France’s sole aim in over-running Europe was to gain a monopoly over the trade in fine wool at the expense of Great Britain. Thomas George Bucke, secretary of the Merino Society (est. 1811) from 1812 to 1813, believed France’s nefarious maneuverings were undertaken with the “object to make that country the emporium of superfine wools” at the expense of British industry, while Banks urged his compatriots to “resist the baneful machinations of our persevering and implacable foe” by actively encouraging the merino in Britain.<sup>43</sup> One of the first acts of the Merino Society after Banks convened it in 1811 was to translate a report on the propagation of the merino from the Minister of the Interior to Emperor Napoleon. The contents of this report, originally published in *Le Moniteur*, detailing plans for the establishment of ram depots and a breeding schedule to bring the population of merinos in France up to eighteen million, seemed to confirm such fears of Britain’s “subtle and inveterate enemy.”<sup>44</sup>

While the acquisition of merino sheep was not the foremost object in the belligerence of France, its military machinations and expanding power did have a perceptible and important impact on how, and particularly on *where*, merino sheep were raised. Most significantly, it eroded the longstanding embargo on the export of live sheep from Iberia. By 1812, it seemed Somerville’s dire prediction had come to pass: France—Britain’s

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<sup>42</sup> John Southey Somerville, *Lord Somerville's Address to the Board of Agriculture: On the Subject of Sheep and Wool, on the 14th of May 1799* (Sussex: John Lord Sheffield for the Board of Agriculture, 1799), p. 3.

<sup>43</sup> Thomas George Bucke, “Report,” in *The Third Report of the Merino Society* (London: Evans & Ruffy, 1813), p. 17; Joseph Banks, “Address to the Members,” *The Second Report of the Merino Society* (London: Evans & Ruffy, 1812) p. 6.

<sup>44</sup> Montalivet, “Report of the Minister of the Interior,” translated from *Le Moniteur* (15 March 1811), in *The First Report of the Merino Society* (London: Evans & Ruffy, 1811), p. 48; Benjamin Thompson, “Preface to First Report,” *ibid.* p. iii.

“implacable foe”—controlled the lion’s share of European merinos, and prominent agriculturalists and economists feared that Britain’s dependence on the importation of Spanish merino wool would reduce the nation to a “tributary to France for a supply of that article.”<sup>45</sup>

The plight of the Spanish merino was indeed severe; with Iberia a major theatre in the on-going conflict between France and Britain, “contending armies...traversed the ancient walks of these animals, marking as their prey, and destroying for their food, every flock which they found upon their march.”<sup>46</sup> By 1812, Spanish flocks had been decimated: an estimated three-fourths were “already destroyed, and the remainder daily diminishing by rapine and neglect.”<sup>47</sup> Not all Spanish merinos in the path of the French army were devoured or destroyed, though. Considerable numbers were rather spared “the rapacity of the French,” and French occupiers found themselves free to disperse the remnants of Spain’s massive merino flocks as they saw fit. The agents of French, German, and American interests fell over this ovine war booty, while Britain, as the sworn enemy of the French, suffered exclusion from the buying frenzy. Not only was Britain’s own wool supply threatened, but, it seemed, her enemies were siphoning off all the valuable merinos from the Peninsula. As Benjamin Thompson lamented, “a considerable portion have found their way into the vast tract of European territory under the controul of our inveterate enemy,” while “a further number have been conveyed across the ocean to America, and

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<sup>45</sup> Bucke, “Report,” *Third Report of the Merino Society*, p. 18.

<sup>46</sup> Benjamin Thompson, “Appendix: Letter from B. Thompson, Esq., to Sir Joseph Banks,” in *Second Report of the Merino Society*, p. 138-39.

<sup>47</sup> George Webb Hall, “Observations on the Growth and Management of Merino Wool,” in *Second Report of the Merino Society*, p. 45.

other distant regions.”<sup>48</sup> Despite a recent royal “gift” from the Spanish crown in 1809 of 2000 sheep from among the famed Paular flock, and the fact that Great Britain had managed to spirit away as many as 10,000 merinos by way of Portugal during the frenzy, the lack of reliability in what Britain could expect to import continued to weigh heavily.<sup>49</sup>

Members of the Merino Society thus viewed the task of establishing the merino in Great Britain with the utmost gravity and a sense of national consequence. The Society brought together noblemen and other agricultural worthies on explicitly nationalistic terms, as “a body of Britons combined in association for a patriotic purpose.”<sup>50</sup> For these zealous improvers, patriotism began at home. Somerville took the lead in 1800 when he vowed “as an individual, bound in a particular manner to support the agricultural produce of my own country...never again to wear superfine cloth, or kerseymere, any part of which shall be of foreign growth.”<sup>51</sup> Lest critics accuse the Society’s well-heeled dignitaries of supporting the production of a mere luxury item for their own comfort at the expense of the availability of “animal food,” which “an increasing population imperiously calls for,” Banks and the other members, “the rank and number...[of whom were] commensurate with the great importance of the object,” continually stressed the “great national as well as individual advantage” that would derive from their activity.<sup>52</sup>

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<sup>48</sup> Ibid., p. 138.

<sup>49</sup> Hall, “Observations,” p. 42; Banks, *Circumstances Relative to Merino Sheep*, p. 5.

<sup>50</sup> Thompson, “Letter from B. Thompson, Esq., to Sir Joseph Banks,” p. 159.

<sup>51</sup> John Southey Somerville, *Address to the Board of Agriculture: On the Subject of Sheep and Wool, on the 14th of May 1799*, (Sussex: John Lord Sheffield for the Board of Agriculture, 1799), p. 3.

<sup>52</sup> Rudge, *General View of Gloucester*, p. 313; Joseph Banks, “Address to the Members,” p. 5; Bucke, “Report,” p. 20.

*Patriots of the old-fashioned kind*

Not all patriotic Britons agreed with this proposition, and in fact, similar claims of patriotic duty and disinterestedness were marshaled to counter it. For John Hunt, the “Leviathan of Loughborough,” patriotism meant breeding British and eating British, as well as wearing British.<sup>53</sup> As a patriot of the “old-fashioned kind,” Hunt held that the “Leicestershire breed of sheep [was] a subject of national importance,” and moreover that “truly patriotic views” meant a dedication first and foremost to feeding Britain’s growing population.<sup>54</sup> No breed was better suited to this task than the New Leicester Longwool, its advocates asserted. A correspondent to the *Agricultural Magazine* writing under the name “Pastorius” led the charge against the merino between 1804 and 1806. He argued that the value of the Dishley breed was its ability to produce “a *much* greater quantity of mutton...on proportionably *less* food” than any other breed.<sup>55</sup> Moreover, Dishley mutton was of such extreme fatness that the laborers who constituted its “principal consumers” obtained “a much greater quantity of food from a pound of Leicester than from an equal weight of small mutton” in the form of broths and drippings as well as flesh.<sup>56</sup>

In addition, Great Britain’s population was growing, and as John Hunt argued, “[i]t is on our increasing population that we must depend for our national protection and support, and without a proper supply of animal food it would be impossible that our present state of

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<sup>53</sup> Benjamin Thompson, “The Merino Cause—Description of His Majesty’s Spanish Sheep—and Final Reply to the Dishley Quack,” *Agricultural Magazine* 4, no. 21 (March 1809), p. 157.

<sup>54</sup> John Hunt, “Perfections and Superiority of the Leicestershire Breed,” p. 91; John Hunt, “Commercial Philosophy, or an Address to Mr. Robert Bakewell of Wakefield in Answer to his Observations on the Influence of Soil and Climate upon Wool,” *Agricultural Magazine* 3, no. 15 (September 1808), p. 185.

<sup>55</sup> Pastorius, “On Spanish Sheep,” *Agricultural Magazine* 11, no. 63 (October 1804), p. 240. Italics original.

<sup>56</sup> Ibid.

population should be maintained.”<sup>57</sup> Because the “pitmen, keelmen, and coal-heavers at Newcastle, Shields, and Sunderland, consume[d],” according to Pastorius, “a much greater quantity of mutton, individually, than any other men in the world,” it was of the utmost consequence that the “extremely handsome, fat, and profitable sheep, the New Leicester,” be granted “a peaceable existence.”<sup>58</sup> Merino supporters were quick to assure that their favorite breed posed no threat to the working class food chain. In response to Hunt’s proclamation, the equally indefatigable Thompson was ready with his reply:

Let the Leicestershire still supply the labouring classes with the lard, of which so little goes a long way; while the naturalized Spaniard furnishes meat, of far superior quality for the tables of the more wealthy, and wool of far superior quality for our superfine fabrics.<sup>59</sup>

### *True Spanish wool*

The real success of the Society’s proposition rested on the breed’s transformative ability. The success or failure of the merino in Britain depended on dual premises: whether or not the quality of the merino’s wool would deteriorate in Britain’s unfamiliar climate; and whether or not the animals themselves would shed their Spanish character and take on the qualities of the English. And herein lay the paradox of naturalization: the merino’s foreignness represented both the appeal of the breed—for it ensured the value of its wool—and the grounds for objection. While its wool might be superior to that of British

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<sup>57</sup> John Hunt, “On the Merino Question. The Critic Unmasked, or Truth Without Disguise, in Answer to Cultivator Middlesexensis,” *Agricultural Magazine* 3, no. 17 (November 1808), p. 313.

<sup>58</sup> Pastorius, “Spanish Sheep,” p. 242-43.

<sup>59</sup> Benjamin Thompson, “On Merino, New Leicester Sheep, &c. In Answer to Mr. Hunt,” *Agricultural Magazine* 3, no. 16 (October 1808), p. 223.

breeds, its form was markedly inferior. For opponents of the breed, the merino threatened to pollute British stock—in improving domestic wool by crossing British breeds with Spanish sheep, they feared, merino enthusiasts risked diminishing the superiority of British flesh and form. Merino supporters, on the other hand, believed they could have the best of both worlds by pursuing a careful program of crossbreeding designed to combine the excellence of the British frame with the superiority of Spanish wool, while at the same time practicing careful selective breeding of pure merino flocks designed to maximize the latent potential of this relatively “unimproved” breed.

Opponents were sure that the merino would fail on both counts, not least because of the likelihood that it would degenerate in the foreign environment of the British Isles. Agriculturalists and breeders outside the society, some prominent among the ranks of early-nineteenth-century improvers, doubted the breed’s ability to withstand the harsher climate of England without sacrificing the quality of its wool. Climatic concerns and environmental unsuitability, in fact, were among the irrepressible John Hunt’s primary objections to merinos. If transposed to Leicestershire, for instance, he claimed that “in a few years the nature of their offspring would become subservient to local circumstances, even if no crossing had taken place.” This meant, in effect, the loss of the merino’s character: “the carcase would improve, and the wool become coarser”; thus negating the very justification for importing merinos, namely the superior quality of their wool.<sup>60</sup> “If fine wool be the object,” Hunt claimed, “it will not be sufficient that we go to Spain for Merino sheep; for if the character is to be preserved, it will also be necessary to bring the

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<sup>60</sup> John Hunt, “On the Perfections and Superiority of the Leicestershire Breed of Sheep,” p. 84.

climate, soil, and pasturage with them.”<sup>61</sup> Hunt was a strong proponent of the view that “animals will best preserve their character on their native soil.”<sup>62</sup>

Hunt’s opponents asserted that the weight of experience and observation disproved such views: “it has been ascertained,” wrote John Sebright, “that neither the sheep nor the wool sustain any injury from the change of climate or pasture; and the absurd prejudice, that Merino wool could be grown only in Spain, is fortunately eradicated.”<sup>63</sup> Merino enthusiasts asserted that this kind of environmental determinism was simply erroneous, and they could cite from a range of successful naturalizations (the potato being one of the most obvious examples) the abilities of foreign plants and animals to withstand English conditions. But environmental determinism was not so easily put to bed: the constant refutation of the influence of climate and environment suggests the degree to which objections on these grounds continued to plague enthusiasts. The kind of metamorphosis Hunt feared, they argued, was impossible in the absence of cross-breeding, deliberate or otherwise: heredity, and the ability of human directives to control it, trumped the influence of climate and environment. “As to foreign animals assimilating with the breed of the country into which they may chance to be introduced, without intercopulation or crossing,” Cultivator Middlesexensis proclaimed, “it is a gross deception, and has been repeatedly so proved by a long chain of facts.”<sup>64</sup>

Moreover, Hunt’s interlocutors countered that rather than their wool deteriorating on a diet of English herbage, merinos were likely to thrive. Raised on the right type of soil,

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<sup>61</sup> Ibid, p. 86-87.

<sup>62</sup> Ibid, p. 92.

<sup>63</sup> John Saunders Sebright, *The Art of Improving the Breeds of Domestic Animals: In a Letter Addressed to the Right Hon. Sir Joseph Banks, K.B* (London: Printed for J. Harding, 1809), p. 20.

<sup>64</sup> Cultivator Middlesexensis, “On the New Leicester and Merino Sheep,” p. 189.



they would prosper, and they would do so without threat or challenge to the Dishley breed. Far from restocking the rich pastures of Leicestershire, one breeder proposed improving the yield of the local “forester” breed of Nottinghamshire by cross-breeding them with merinos. The very character of the merino, in fact, made them suitable to this region: “they seem extremely well calculated for our cold hilly situation: they are enclosed in a thick almost impervious coat, muffled round the eyes, and nearly to the end of the nose, and their legs down to the feet covered with fine wool of the valuable quality.”<sup>65</sup> Few proponents of the Spanish breed, in fact, felt it necessary or even advisable to cross with a long-wooled, heavily-built breed like the Leicester, or to stock two such different breeds on the same pasture.

In reply to Hunt, Thompson contended that as a breed “adapted only to luxurious pasturage,” he would “let [Leicesters] there revel.” The merino, on the other hand, could profitably improve marginal pastures at the expense only of the hardy hillside breeds—smaller, hardier short-wooled sheep—not the Dishley. He advocated “the banishment of those unprofitable short-wooled animals now occupying our wolds and forests, in favour of Merino, yielding as much as good mutton, with twice as much wool, ten times as valuable.”<sup>66</sup> Little outcry in defense of these “race(s) of horned mountaineers” met suggestions such as these, presumably because their breeders were less wealthy and well-

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<sup>65</sup> F.H. Clay, “State of the Merino Improvement in Sherwood Forest Notts.,” *Agricultural Magazine* 3, no. 18 (December 1808), p. 357.

<sup>66</sup> Thompson, “The Merino Cause,” p. 155.

connected than the elite merino advocates, or because they simply were not paying attention.<sup>67</sup>

By the 1810s, however, despite John Hunt's continued objections, Bucke could claim that the "absurd prejudice, that Merino wool could be grown only in Spain," was "fortunately eradicated," and objections to the merino based on climatic arguments had been "practically and completely set at rest for ever."<sup>68</sup> According to Benjamin Thompson, the first Secretary of the Society, experience "having so clearly established the practicability of growing, in this kingdom, Wools equal to the article which we have been in the habit of procuring from Spain and other countries...it would be a waste of words to dwell on it."<sup>69</sup> As his successor, Bucke agreed. "English grown Merino wool," he asserted, "is proved equal to the superfine manufacture of broad cloth." Perhaps the best evidence that "Merinos stand our climate equally well with our native sheep" rested in the opinion of the lower orders, known to elite agriculturalists primarily for their conservatism and rude ignorance. According to Bucke, "Even the common farmer, those lumps of prejudice and antipathy, seem hankering after the Merino sheep. They cannot stand against doubling quantity and price of wool in a single cross."<sup>70</sup> Wealthy gentlemen were known to be open to agricultural experimentation; that many among the landed classes had embraced the

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<sup>67</sup> Somerville, *Facts and Observations Relative to Sheep, Wool, Ploughs and Oxen: In Which the Importance of Improving the Short-Wooled Breeds of Sheep, by a Mixture of the Merino Blood, is Demonstrated from Actual Practice* (London: J. Harding, 1809), p. 15.

<sup>68</sup> Sebright, *Art of Improving*, p. 20; Bucke, "Report," p. 8.

<sup>69</sup> Thompson, "Letter from B. Thompson, Esq., to Sir Joseph Banks," p. 119.

<sup>70</sup> Bucke, "Report," p. 9.

merino was heartening, but that it was able to win over even “the most illiterate of farmers” was proof indeed of its capacity to thrive in England’s foreign climate.<sup>71</sup>

The dampness and cold winters of the United Kingdom’s “changeable” climate, so different from the warm, dry climate of much of Spain, served as the truest test of the merino’s ability to thrive in Great Britain. The most compelling evidence on this point came from Scotland and Ireland, among the most geographically and meteorologically extreme parts of the United Kingdom, where the yolk—the natural oil secreted by sheep, which on the merino saturated the fleece up to an eighth of an inch—offered what seemed to be a natural defense against the cold, wet climate. “[T]he yolkiness of the Merino fleece,” suggested one subscriber to the Society residing in Ireland, “and the compactness of its surface, act like an oil-cloth for its defence against rain, and fits the animal the better to endure our wet climate.”<sup>72</sup> Indeed, this gentleman was unable to “conceive any breed of sheep better adapted to the climate and soil of the counties of Cork and Kerry, than the Merino breed...” Though of similar stature to “those [sheep held] in common amongst the country people,” their “carcasses” were “so much more round and compact, and their wool so much more capable of paying for their keep [that] add to this their thriftiness and docility of disposition,” and he would “recommend them in preference to larger coarse woolled sheep.”<sup>73</sup> A Scottish correspondent concurred: “the situation on my farm,” he

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<sup>71</sup> John Wright, “On Merino and New Leicester Sheep, In Answer to Mr. Hunt,” *Agricultural Magazine* 5, no. 25 (July 1809), p. 13

<sup>72</sup> Newnham, quoted in Bucke, “Report,” p. 73.

<sup>73</sup> *Ibid.*, p. 72.

held—despite the harsh conditions of this northerly locale—“seem[ed] to agree with the Spaniards exceedingly well.”<sup>74</sup>

But the mere act of transplantation was not enough to render these “Spaniards” English, as those who would sell their “English grown Merino wool” discovered.<sup>75</sup> Compared to the high price of merino sheep in Britain, their wool offered a very poor return on investment. The inability to command what merino growers deemed a fair price—one on par with imported Spanish merino wool—plagued the Society during its brief existence, and its cause provoked much speculation. One correspondent with the *Agricultural Magazine* noted, for example, that the prices in 1809 of Spanish merino wool from the region of Seville ranged from 10 to 15 shillings per pound, while the price of English merino wool sat, in the same year, closer to 8 shillings, 4 pence.<sup>76</sup> The price of half-bred Ango-merinos were even lower, despite almost unanimous testimony that even one cross improved the quality of English short-woolled fleeces. “Surely, then,” this correspondent wrote, “more might be obtained for wool of the first cross than 4s to 4s 6d per lb.”<sup>77</sup> The perceived prejudice among English wool staplers against merino wool produced in Britain constituted one of the most serious obstacles faced by merino enthusiasts, for if they could not convince wool buyers that merino wool grown in Britain was as valuable as merino wool from Spain, they would not be able to convince British breeders to discard their Southdowns and Ryelands in favor of the foreign breed.

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<sup>74</sup> Unattributed, quoted in *ibid.*, p. 64

<sup>75</sup> *Ibid.*, p. 9.

<sup>76</sup> Agricola Northumbriensis, “On Merino Sheep, With Miscellaneous Observations,” *Agricultural Magazine* 5, no. 28 (October 1809), p. 243; Bucke, “Report,” p. 71.

<sup>77</sup> Northumbriensis, “On Merino Sheep,” p. 243.

Ultimately, the struggle over pricing merino wool grown in Britain was about the degree to which location and environment inhered in the notion of a breed in the early nineteenth century. Once again, the foreignness of their champion breed incited what merino enthusiasts claimed was prejudicial refusal to recognize their worth, and suspicion that the quality of its wool would succumb to the English climate. Another reading of this claim, of course, might support the views of the wool buyers, suggesting the possibility that English climate did indeed have a negative impact on Spanish wool. With the distance of time, however, evaluating the accuracy of this claim is difficult, although the ultimate failure of the merino to really prosper in Britain, and its wild success in Australia later in the nineteenth century, where climate and environment are similar to Spain, suggests that there may have been some justification for the staplers' refusal to give full price for British-grown merino wool.

Whether or not merino wool did degenerate in Britain, breeders faced the belief that even if the wool were as fine as that grown in Spain, it was somehow intrinsically different, and therefore worth less on the market than "true" Spanish wool. While merino breeders held that the wool they sold really was "Spanish wool...though grown in England," this conflict over pricing suggests, in fact, it really wasn't. Despite the impassioned claim of George Webb Hall of the Society's Somersetshire committee that "*fine wool will ever be as fine gold, so long as luxury shall exist, no matter where grown, so [long as] it be fine wool, and brought to market in merchantable condition,*" market prices continually proved him (and Banks) wrong.<sup>78</sup> As Hall lamented, "Is there a single grower of Merino Wool in this extensive Society, or in the United Kingdom, who can

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<sup>78</sup> Hall, "Observations," p. 49.

report to it, that having produced fine wool, he has been able to dispose of it at a price that bears any relation to the price of Spanish wool?" Among his acquaintance, there was not.<sup>79</sup> The superior value attached to Spanish wool suggests that its exoticism rated higher than wool produced in England even though merino wool, wherever grown, usually remained finer than the finest of native English wool. It appeared that for wool to be Spanish, it must have been grown in Spain. In removing the "Spanish breed" from its native pastures, British merino breeders lost the connection to location so crucial to its value on the market. The stamp of England's environment, vital to the merino's acceptance among discerning British agriculturalists in the first place, worked against the sale of its wool on English markets.

In a way, then, John Hunt had been right when he wrote that for breeders to grow Spanish wool in Britain, they would have to bring the soil, climate, and pasturage along with the sheep, although for different reasons from those he supposed: it appeared to be a question of marketing rather than strictly one of physiology. But the question of locality in a breed—its native-ness—was more complicated than either Hunt or the merino advocates anticipated. The central question in the anglicization of merino wool—that is, whether despite being grown in England, the wool of English-raised merinos remained Spanish, became English, or was transformed into something else entirely—remained open in the early nineteenth century.

*A touch of class*

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<sup>79</sup> *Ibid.*, p. 46.

And while this dynamic worked against the merino with respect to its wool, it offered perhaps the only possibility of the breeds' overall success in Britain. The merino's perceived ability to literally become more English over time from the inside out was a major factor in its acceptance in England, despite how this process initially worked against it on the wool market. The power of English breeders to reform the merino after their own native breeds, and the inherent malleability of the breed, was ultimately crucial to the merino's acceptance and flourishing, limited though it was, in the United Kingdom. Cross-breeding—pairing choice merino rams with choice native ewes—was how this was to be accomplished: successive rounds of crossing pure merino rams with native ewes, enthusiasts proposed, would eventually “grade up” native breeds and produce a new hybrid, the Anglo-merino. This “art of breeding” held out the possibility that given time and “careful and judicious selection,” these “Spaniards” could become more English.<sup>80</sup> The goals of British breeders were thus coterminous with the process of naturalization; they were to produce “a new race of sheep of their own making,” one “with Spanish fleeces and English constitutions.”<sup>81</sup>

Improvement first of all entailed overcoming the prejudice of English breeders, which was dogged, and pertained not only to points of wool and climate, but to the issue of form. “Their shape,” acknowledged Charles Henry Hunt, author of *A Practical Treatise on the Merino and Anglo-Merino Breeds of Sheep* (1809), “though what the greatest painters have chosen as models, is certainly not such as the English sheep-fanciers of the present day can admire.” In contrast to the famous barrel shape of the Leicester

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<sup>80</sup> Sebright, *Art of Improving*, p. 3.

<sup>81</sup> Newnham, quoted in Bucke, “Report,” p. 73; Thompson, “Letter from B. Thompson, Esq., to Sir Joseph Banks,” p. 146.

Longwools, merinos were “in general rather high on their legs, flat sided, and narrow across the loins, and consequently defective in the hinder quarter.”<sup>82</sup> John Hunt was, not surprisingly, considerably less generous. “If we proceed from the neck,” he wrote to the *Agricultural Magazine*, “we shall find the Merino ram high shouldered, hollow backed, very deficient on the rump, long legs, carcass small in proportion to the height, with a weight of bone in all parts, sufficient to obliterate every appearance of perfection.”<sup>83</sup> Other skeptics noted its narrow chest, a black mark against any animal “destined to be the food of man,” because “no animal whose chest was narrow could easily be made fat,” and the merino was “in general contracted in this part.”<sup>84</sup> As Banks carefully put it, the “carcasses” of the merinos “were extremely different in shape, from that mould which the fashion of the present day teaches us to prefer,” which was largely set by “living Dishley oil barrels.”<sup>85</sup> For Somerville’s part, if the merino failed to conform to this desired shape, the value of its wool, and, importantly, the flavor of its mutton was such that the eye of the breeder rather than the form of the animal ought to be improved:

Supposing...that no great improvement in the shape should be obtained, it becomes to any man simply a question between his eye and his pocket; if he must have beauty, and that, too, of an unwieldy description, let him have it; but if he prefers profit...he knows where it may be found.<sup>86</sup>

Most agriculturalists were confident, however, that things would not come to such a pass.

Banks believed that “in due time, with judicious management, carcasses covered with

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<sup>82</sup> Charles Henry Hunt, *A Practical Treatise on the Merino and Anglo-Merino Breeds of Sheep: In Which the Advantages to the Farmer and Grazier, Peculiar to These Breeds, Are Clearly Demonstrated* (London: Printed for W.P. Piercy, 1809), p. 15.

<sup>83</sup> John Hunt, “On the Perfections and Superiority of the Leicestershire Breed of Sheep,” p. 90.

<sup>84</sup> Sebright, *Art of Improving*, p. 22.

<sup>85</sup> *Project for Extending the Breed of Fine-Wooled Spanish Sheep*, p. 2; Thompson, “The Merino Cause,” p. 160.

<sup>86</sup> Somerville, *Facts and Observations*, p. 40-41.



superfine Spanish wool, may be brought into any shape, whatever it may be, to which the interest of the butcher, or the caprice of the breeder, may chuse to affix a particular value.”<sup>87</sup>

One way in which promoters tried to defuse fear of a degenerative effect of merino on native form was to deny any skill or deliberation to the tradition of stockbreeding in Spain. By this reasoning, the merino represented, in effect, pure potential, an unformed type awaiting only for the application of British skill. When John Hunt accused the merino of existing “in a state of uncultivated nature,” he meant it as criticism, but Banks, Somerville, and the Merino Society turned it to their advantage.<sup>88</sup> As an “unimproved breed,” an uncultivated form, the merino needed only the application of the skilled British eye and hand to bring it to that “extreme of perfection” as only British stockbreeders could achieve.<sup>89</sup> Spaniards, “if they may be supposed to know what we call beauty, have never attempted to produce it” in the form of their sheep.<sup>90</sup> Moreover, they lacked a taste for mutton, and this could be blamed for many of the breed’s perceived defects, according to British standards. “Mutton in Spain,” explained Sir Joseph Banks, “is not a favourite food; in truth, it is not in that country prepared for the palate as it is in this.” English mutton he compared to works of art; “our lamb-fairs, our hog-fairs, our shearling-fairs, our fairs for culls, and our markets for fat sheep,” were “calculated to subdivide the education of each animal, by making it pass through many hands, as works of art do in a manufacturing concern,” ultimately producing an object of such high quality, that if “offered for sale, and

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<sup>87</sup> *Project for Extending the Breed of Fine-Wooled Spanish Sheep*, p. 6.

<sup>88</sup> John Hunt, “On the Perfections and Superiority of the Leicestershire Breed of Sheep,” p. 88.

<sup>89</sup> Somerville, *Facts and Observations*, p. 3.

<sup>90</sup> Parry, *Facts and Observations Tending*, p. 42.

if fat and good, it seldom fails to command a price by the pound...dearer than that of beef.” High praise indeed from a nation of self-described beef-eaters, whereas “In Spain,” Banks explained, “they have no such sheep-fairs.”<sup>91</sup>

In fact, much came down to a difference in national taste for mutton. The whole system of sheep husbandry in Spain was calibrated towards producing wool firstly, and meat only secondarily: it was eminently not designed to produce the kind of fat mutton so tempting to the British palate. From a British perspective the laws of the Mesta, which governed the transhumantes, and the long migrations themselves, were thus detrimental to the improvement of the breed. Somerville remarked that “it must be evident to every judge of stock, that a journey from the mountains of the north to the plains of the south of Spain, cannot be otherwise than productive of more injury to the frame and constitution of the animal, than of benefit to the fleece.”<sup>92</sup> The Mesta only impeded “the Spaniards of attempting improvements, even if they had the disposition.” Since “improvement in Spain seems out of the question,” argued Charles Hunt, “we must therefore look to the enterprising spirit of this country for such amelioration, either of wool or carcase, as the Merino sheep are susceptible of.” There could be no doubt that “the knowledge and attention of English breeders cannot fail to effect great improvements in both these points.”<sup>93</sup>

The speediest and most effective route to this improvement was to attempt to upgrade like breeds by crossing them with the merino. John Hunt was not the only

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<sup>91</sup> Harriet Ritvo, *The Platypus and the Mermaid and Other Figments of the Classifying Imagination* (Cambridge, Mass: Harvard University Press, 1997), p. 196-97; Banks, *Some Circumstances Relative to Merino Sheep*, p. 4.

<sup>92</sup> Somerville, *Facts and Observations*, p. 19.

<sup>93</sup> C. H. Hunt, *Merino and Anglo-Merino Breeds of Sheep*, p. 72.

observer who feared the outcome of an injudicious cross between the merino and the Leicester. John Saunders Sebright, a correspondent of Banks, counseled strongly against such a match. He held that even “[i]f it were possible, by a cross between the new Leicestershire and Merino breeds of sheep, to produce an animal uniting the excellencies of both, that is, the carcase of the one and with the fleece of the other,” an animal “so produced would be of little value to the breeder” since “a race of the same description could not be perpetuated.” That is, a cross between two such different types would never breed true, and therefore “no dependance [sic] could be placed upon the produce of such animals; they would be mongrels, some like the new Leicestershire, some like the Merino, and most of them with the faults of both.”<sup>94</sup>

Though later efforts to establish a “native” colonial breed in New Zealand along these lines would eventually prove Sebright wrong (Chapter 4), few merino enthusiasts advocated such a cross. On the contrary, avoiding such “mountebank doctrines of crossing dissimilar breeds, whom nature in its infinite wisdom had set a sunder” was of paramount importance.<sup>95</sup> Selectively breeding merino rams with native ewes of the smaller breeds of mountain sheep provided the best opportunity for improvement: “The effect of a Spanish ram,” pronounced Somerville, “on the fleeces of a horned flock, such as the Dorset, the Welsh (a sheep of neat frame), on the Wiltshire, the Norfolks, the Dartmoor, [or] the Scotch...will be neither more or less than a very great increase of profit on the fleece, with very little, if any, injury whatever to the form of the animal.”<sup>96</sup> If not a cross with “those breeds of heath-croppy,” then the next most suitable cross was with another shortwool

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<sup>94</sup> Sebright, *Art of Improving*, p. 18.

<sup>95</sup> Somerville, *Facts and Observations*, p. 15.

<sup>96</sup> *Ibid.*, p. 15-16.

breed.<sup>97</sup> Parry, a physician, esteemed member of the Bath Agricultural Society, and early merino enthusiast, preferred the Ryeland breed of Herefordshire for this work. His own experience, he claimed, “proved from actual facts the practicability of producing in England, from a cross of Ryeland ewes with Spanish rams, and without the intervention of a single Spanish ewe, wool *equal* to the finest which is imported from Spain.”<sup>98</sup>

Whatever the chosen breed for crossing with the merino, the purposes of such efforts were twofold. In the first place, they were meant to improve the quality of English shortwool breeds, leaving the longwools in their preexisting state of perfection, and thereby increase the breeder’s profit while at the same time securing the nation’s supply of wool. Of no less cultural significance, Anglo-merino crosses were also to improve the carcass of the unfortunately-shaped merino. Of course, Anglo-merino sheep, as the product of crossing between merinos and British breeds, were not strictly foreign, and thus the issues they posed for British breed culture were of a different nature. Whereas the pure merino threatened to displace native British breeds in an already well-stocked and highly stratified system of wool production, cross-breeds—even of a high grade—posed a danger to the purity of “native” stock. Through careful selective breeding, in which only the most rotund specimens of merino were bred, and judicious crossing, merinos in Britain came to more nearly approach “the present fashionable ideas of beauty,” themselves the product of “many years of attentive study.”<sup>99</sup> In this instance, improving the form or the carcass of the merino tended entirely towards the production of mutton, although never at the expense of its wool, and was dictated largely by the success of Bakewell’s New Leicester Longwool

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<sup>97</sup> Cultivator Middlesexiensis, “On the New Leicester and Merino Sheep,” p. 192.

<sup>98</sup> Parry, *Facts and Observations*, p. 36.

<sup>99</sup> *Ibid.*, p. 42.

and its comrades in fat mutton, the Lincoln Longwool and the improved Southdown. The widespread popularity of these breeds, and the strong sense of sheep as mutton-makers as well as wool-growers in Britain, led to an emphasis on the quantity and quality of the merino's own mutton in the controversy over its naturalization.

### *Accounting for taste*

Mutton, and the ability of the merino to produce it, thus served as a key point in debates over the naturalization of the Spanish Merino in Britain. Criticism on these points seemed to hit merino enthusiasts especially hard, if their efforts to counter them are any indication. Debate surrounding the effect of the environment on the merino wool could be put to rest on the basis of experience, at least. But mutton was a matter of taste, and much ink was expended in professing the superiority of the merino on this front. Bucke claimed that “[t]here is an excellence peculiar to Merino sheep and their crosses, which has hitherto been little noticed. Their hind quarters are heavier than their fore quarters, consequently the greater weight of mutton is in the more profitable joints.”<sup>100</sup> This natural, if “peculiar,” excellence meant that if the carcass was found wanting, it could be blamed on poor management and human error. If “the too great anxiety to propagate the race with the greatest celerity” by “men of no experience” led breeders to produce lambs “from hoggets or tegs of a small size,” and this “same injudicious treatment” was repeated over multiple generations, “a race of lilliputians was the consequence, as weak in constitution as it was

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<sup>100</sup> Thomas George Bucke, “Observations on the Quality of the Mutton,” in *The Second Report of the Merino Society* (London: Evans & Ruffy, 1812), p. 13.

diminutive in size.”<sup>101</sup> That is, there was nothing inherently lacking in the quality or the quantity of the merino’s flesh, and any perceived shortcomings could be attributed to errors in husbandry.

According to this logic, the breed was to be anglicized from the inside out, and the proof was in the mutton: “I cannot suppose,” stated Somerville, “that the flesh of sheep of the Spanish breed, the grain of which is as fine as any we are acquainted with, properly fed from the birth, and on English pasture, will not prove excellent meat.”<sup>102</sup> The work of the Society served as proof positive of success in this endeavor. At Somerville’s show in 1812, Thomas George Bucke’s flock “made a conspicuous figure, not only for a fine fleece, but the promise of great size, and nearly an English form.” As one report noted, “The Merinos, indeed, appear to be improving annually in size, and assimilating more to the English shape.”<sup>103</sup>

On this point, as on so many others, John Hunt could be depended upon to have his say. “[I]f we are to resign our fat mutton,” he feared “our own fat must go into the bargain, and all for the sake of covering our lean sides with a fine coat made of Spanish wool.”<sup>104</sup> Always quick to respond, his vociferous opponents countered that the “Spanish breed has proved itself superior in point of size and fattening quality” and Spanish mutton was “the most solid, savoury, and nutritious, of any to be found in this country.”<sup>105</sup> One clever respondent asserted that

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<sup>101</sup> J. Tharp, Esq., quoted in Bucke, “Report,” p. 58.

<sup>102</sup> Lord Sheffield, quoted in *ibid.*, p. 16.

<sup>103</sup> “Extract from a report on Lord Somerville’s show,” quoted in *ibid.*, p. 8.

<sup>104</sup> John Hunt, “On the Perfections and Superiority of the Leicestershire Breed of Sheep,” p. 88.

<sup>105</sup> Cultivator Middlesexiensis, “On the New Leicester and Merino Sheep,” p. 192, 193.

“[f]rom the aptitude of the Spanish race to fatten, in an equal degree with any of our native breeds, the admirers of fat men and fat mutton may console themselves, that they may procure as large, as fat, and...as well-flavoured meat, from the descendants of this breed, as the fine Leicestershire herbage has yet produced from any breed whatever.”<sup>106</sup>

Anecdotal evidence and personal testimony was put to the defense of merino mutton.

Benjamin Thompson recounted dining on “the saddle of a Merino-Dishley wether” with “two gentlemen, who, from their elevated rank in life, must constantly have excellent mutton on their tables, and who united in their praise of this joint,” and proclaimed elsewhere of a Ryeland-merino cross that “better mutton was never put upon a table.”<sup>107</sup>

On the other hand, John Wright, one of Hunt’s less illustrious and more restrained combatants, reported from personal experience that though “I profess myself no epicure, I dined off a saddle of [merino] mutton...and as far as my poor judgment went, thought it most delicious.”<sup>108</sup>

While Thompson and his cronies defended their mutton against the egregious insults of the likes of Hunt, general doubts about the ability of the merino to put on fat came from more elevated corners of the agricultural world. The famous Thomas William Coke of Holkham, esteemed agriculturalist and breeder and “a person inferior to none in respectability, real patriotism, and liberal attention to the rural economy of the British Empire,” also “declared himself unfavourable to the Spanish breed.” His objections, confined “entirely to the carcase; for the superiority of the wool over the English fine wool cannot be doubted,” were enough to temporarily shake “the good opinion” of Lord

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<sup>106</sup> Quoted in C. H. Hunt, *Merino and Anglo-Merino Breeds of Sheep*, p. 117-118.

<sup>107</sup> Thompson, “Refutation of Mr. Hunt’s Absurdities,” p. 360; Benjamin Thompson, “Successful Experiment of a Merino-Shetland Cross-Sheep-Sheering,” *Agricultural Magazine* 4, no. 24 (June 1809), p. 359.

<sup>108</sup> John Wright, “A Comparative View of the New Leicester and Half-Bred Merino Sheep,” *Agricultural Magazine* 3, no. 18 (December 1808), p. 364.

Sheffield, a vice president of the Merino Society, “had formed of the breed.”<sup>109</sup> Coke, a well-known proponent of Southdowns, had “stirred up a competition between the Merinos and the South Downs,” but despite having “exhibited the flower of his flock...large, and well laden with fat,” at Somerville’s annual agricultural show, the merinos took the day:

The superiority of Merino wool being out of the question, size and susceptibility of external fat were the only criteria required, and Mr. Tharp’s [a member of the Society’s Committee of Superintendence], and his tenant Mr. Causton’s, Merinos, were pushed to the utmost point of obesity; and giving the most decisive proofs of possessing the faculty of taking on fat, and their mutton being equal, at least in point of goodness, *the palm of victory appears due to them...* The superior size of the Down sheep proves merely that they are bigger, not better than Merinos<sup>110</sup>

Fortunately for his own piece of mind, Sheffield reconciled his respect for Coke and esteem of the merino with the “hope that the well known liberality of Mr. Coke will induce him to revoke a sentence, which his impartial judgment cannot sanction.”<sup>111</sup>

Not surprisingly, the Society and its supporters staunchly defended the thus maligned merino against the criticism of Coke and the skepticism of Sebright, professing that “Merino mutton is equal to the best, whether pure or in its crosses.”<sup>112</sup> Apparent shortcomings of the breed were at every opportunity laid at the door of the Spanish, who “at best,” were known to be “great slovens in all their agricultural operations.”<sup>113</sup> The “defective form of the animals originally imported” accounted for much initial criticism of the breed, while culinary differences explained the ill form of the merino carcass.<sup>114</sup> The “code of laws” governing the Merino flocks of Spain, it was well known, encouraged

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<sup>109</sup> Thompson, “Letter from B. Thompson, Esq., to Sir Joseph Banks,” p. 121.

<sup>110</sup> “Extract from a report on Lord Somerville’s show,” quoted in Bucke, “Report,” p. 7.

<sup>111</sup> Thompson, “Letter from B. Thompson, Esq., to Sir Joseph Banks,” p. 121.

<sup>112</sup> Bucke, “Report,” p. 9.

<sup>113</sup> Hall, “Observations,” p. 52.

<sup>114</sup> Thompson, “Letter from B. Thompson, Esq., to Sir Joseph Banks,” p. 119.



circumstances “by which the animals were constituted [as] mere growers of this article, and [were] never placed in any situation to render a system of fattening practicable.”<sup>115</sup>

### *English sheep in Spanish clothing*

It appeared, then, that by the 1810s, the merino in Britain was approaching the aim of its breeders—an English sheep in Spanish clothing. Its ability to assume this form—the powerful transformative potential of the breed—accounts for much of its acceptance, however limited, in Great Britain. Not only did these “Spaniards” seem able to adapt themselves to the English environment with little injury to the quality of their coats, merinos proved themselves amenable to reformation after the English model. If economic profitability provided the practical impetus for their adoption, the ability of the merino to take on the trappings of British mutton, of the Spaniard to become English, was the ground upon which the controversy over its introduction was fought. In this, the merino came head to head with Bakewell’s Dishley sheep, whose cultural significance as a point of national pride was such that its defenders were able to turn the focus of the merino’s future in Britain away from the obvious advantages of its wool and towards its shortcomings as mutton. The cultural eminence of this “native” breed was the biggest stumbling block in the merino’s naturalization.

And yet, the merino never occupied the position Banks, Somerville and the Merino Society had envisioned for it—British-raised merino flocks never even approached the amount of wool that would have been needed to supply the woolen industry. Part of this,

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<sup>115</sup> Ibid, p. 122.

no doubt, had to do with the rate at which this industry was expanding in the early nineteenth century and the limitations to pasturage in such a “tight little island,”<sup>116</sup> but part likely also had to do with that thorny question of whether or not the British climate had a negative influence on merino wool. That the merino soon became so well established in Australia suggests perhaps it did. But whether or not Australia provided a solution for the physiological problem of the merino in Britain, along with New Zealand it almost certainly provided a solution to the cultural and symbolic aspects of this controversy. In colonial Australia, Britain found it could grow the vast amounts of “Spanish” wool it needed, without the impediment of hostile enemies like the French, and without threat to the sanctity and integrity of its “native” breeds, while in New Zealand, colonists amalgamated the characteristics of British mutton breeds and the fine-wooled merino with more success than proponents of the Anglo-Merino in Britain. For its own part, the merino, its crosses, and its traits mostly faded into the existing landscape of established British breeds.

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<sup>116</sup> “Scraps: The Leinthall Sale,” *Livestock Journal and Fancier’s Gazette* 21 (2 April 1885), p. 329.

## Chapter 3

### Measuring Purity

Herefordshire is situated on the border of Wales, with Shropshire to the north, Gloucestershire to the south, and the midland counties to the east. William Marshall, the author of the *Rural Economy of Gloucestershire* (1789), described it as “a sweetly-broken country,” through which the river Wye and all its “various branchlets” wend, flanked by fertile valleys and “meadow banks...steep enough to give beauty to the surface, and genialness to the soil; yet not too steep for the purposes of cultivation.”<sup>1</sup> This scenic and fertile region, “rank[ing] among the smaller counties” of England, was known for its agricultural produce.<sup>2</sup> Orchards of various description dotted its hillsides, and rye was grown in abundance among the valley meadows. It was also home to superior livestock: Ryeland sheep, reputed for their fine, thick wool (second only to that of the merino); and

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<sup>1</sup> William Marshall, *The Rural Economy of Gloucestershire: Including its Dairy: Together with the Dairy Management of North Wiltshire; and the Management of Orchards and Fruit Liquor, in Herefordshire*, 2nd edition, vol. 2 (London: G. Nicol, 1796 [1789]), p. 187, 188.

<sup>2</sup> *Ibid.*, p. 187. See also John Duncumb, *General View of the Agriculture of the County of Hereford: Drawn up for the Consideration of the Board of Agriculture and Internal Improvement* (Bulmer and Co.: London, 1805).

Hereford cattle. Celebrated for both their labor and their flesh, Marshall described their frames as “altogether *athletic*,”<sup>3</sup> and their form, “as beasts of draught, [was] nearly complete.”<sup>4</sup> Herefords were known as the “rent-payers” of the district, habitually pulling plows for five or six years before being turned over to the graziers of Buckinghamshire and other regions adjacent to London who “finished” them for the metropolitan market.<sup>5</sup> Besides this, they were “kindly feeders,” becoming “as fat as mud” on shorter shrift than many other breeds.<sup>6</sup> Though their coats originally varied in color from reddish-brown to dove grey, yellow, brindled, or mottled, by the early decades of the nineteenth century, they were “principally distinguished by their white faces,” which were paired with “cherry sides” and coats of “soft glossy hair.”<sup>7</sup> All in all, Marshall enthused, they were “the first breed of cattle in the island.”<sup>8</sup>

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<sup>3</sup> Marshall, *Rural Economy of Gloucestershire*, p. 192.

<sup>4</sup> *Ibid.*, p. 193.

<sup>5</sup> T. Duckham, “A Lecture on the Breeding and Management of Hereford Cattle” (Hereford: The “Times”, 1869) p. 4. Reprinted in T. Duckham, *Eyton’s Herd Book of Hereford Cattle*, vol. 7 (Hereford and London: Longman and Co., 1869). Paper originally given at the Breconshire Chamber of Agriculture, 2 January 1869.

<sup>6</sup> William Youatt, *Cattle: Their Breeds, Management, and Diseases* (London: Baldwin and Cradock, 1834), p. 32; Marshall, *Rural Economy of Gloucestershire*, p. 193.

<sup>7</sup> Youatt, *Cattle*, p. 31; Quoted from the *Hereford Times* in “Hereford Cattle,” *The Maitland Mercury & Hunter River General Advertiser* (New South Wales), 3 October 1885, supplement, p. 21.; Duckham, “Breeding and Management,” p. 5.

<sup>8</sup> Marshall, *Rural Economy of Gloucestershire*, p. 192. Juliet Clutton-Brock and Steven Hall call the Hereford “probably the most famous county breed of cattle.” Juliet Clutton-Brock and Steven G. J. Hall, *Two Hundred Years of British Farm Livestock* (London: Natural History Museum, 1995), p. 76.

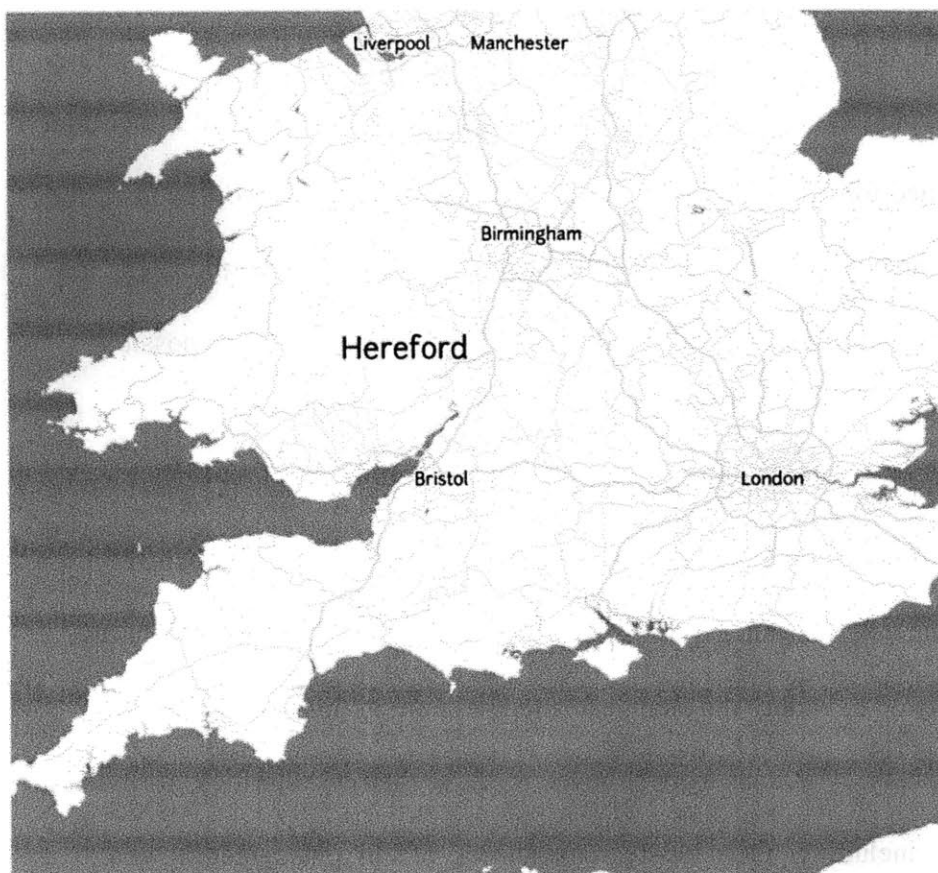


Figure 1. Location of Herefordshire.<sup>9</sup>

In the early nineteenth century, it was customary to describe breeds of cattle as “native” to their home districts. Cornwall, Devonshire, Sussex, Norfolk, Lincolnshire—each had its own distinctive type formed by climate, environment, regional economies, and by “the power of local prejudice” as well.<sup>10</sup> “A person who has travelled through the different breeding counties,” wrote George Culley in the preface to *Observations on Livestock* (1786), “cannot but remark [upon] the great diversity of opinion in the characteristic distinctions of excellence in domestic animals.”<sup>11</sup> Breeds of cattle varied not

<sup>9</sup> Map tiles Stamen Design and Jeff Warren (CC-BY). Data by OpenStreetMap (CC-BY-SA).

<sup>10</sup> William Youatt, *The Complete Grazier; Or, Farmer’s and Cattle Breeder’s and Dealer’s Assistant* (London: Baldwin and Cradock, 1833), p. 12. See also Chapter 1.

<sup>11</sup> George Culley, *Observations on Livestock, Containing Hints for Choosing and Improving the Best Breeds of the Most Useful Kinds of Domestic Animals* (London: G. G. J. & J. Robinson, 1786), p. v.

only according to “the soil of different districts,” but to “the fancies of the breeders” as well.<sup>12</sup> At a time at which mobility was powered by muscle (human or animal) rather than by steam, the combined force of regional variation and “local prejudice” worked to preserve the various breeds “in a state of greatest purity” at their localized epicenters: the greater the distance from this point of origin, the more “intermingled in every possible way” local types became.<sup>13</sup>

The connection between locality and type thus forged was intimate (Chapter 1). In the case of the “native breed of Cornwall,” as William Youatt, the widely published agricultural expert and veterinarian, explained, for example, the cattle were “very hardy,” and appeared “calculated to endure the changeable temperature of this peninsular and unevenly-surfaced county.”<sup>14</sup> Breeds were believed to “have their peculiarities, attributable to different causes”—including “mere local circumstances, of soil, place, feeding and breeding tactics,” but also “the strong and marked impress transmitted from remote times in some original type”<sup>15</sup>—and without their native conditions, it was expected that regional types would lose their “character.”<sup>16</sup> Thus the “West Highlander”—the shaggy, Scottish breed celebrated in London markets for its fine flesh—“must have his native hills,”<sup>17</sup> and the North Devon, too, its “native country”—a small, rich patch of Devonshire extending

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<sup>12</sup> Youatt, *Cattle*, p. 9.

<sup>13</sup> Youatt, *Cattle*, p. 11, 9.

<sup>14</sup> *Ibid.*, p. 24.

<sup>15</sup> “Hereford Cattle,” *Livestock Journal* (12 November 1875), p. 688.

<sup>16</sup> “Cattle of the Various Breeds as Beef Producers,” *Farmer’s Magazine* 55 (February 1879), p. 99.

<sup>17</sup> *Ibid.*

from “the river Taw westward, skirting along the Bristol Channel” before the breed became “more mixed, and at length comparatively lost” at the banks of the river Parrett.<sup>18</sup>

Herefords, no less than Devons or West Highland cattle, were understood to be “the native cattle of the county,” produced and defined by their connection to Herefordshire.<sup>19</sup>

Even in the seventeenth century, the local climate seemed uniquely calculated to the production of “corne and cattle,” being in the words of one author, “most healthful and the soyle so fertile...that no place in England yieldeth more or better conditioned.”<sup>20</sup>

Expressing the connection between place and type with elegance, George Garrard wrote that “the excellence of an animal,” depended “in a great measure...upon the soil where it has been bred and the land upon which it was fattened. Without doubt, therefore, we are much indebted to the rich pasture by the Wye and the Lugside for that perfection which so eminently distinguishes the Herefordshire cattle.”<sup>21</sup> Or, as one of the breed’s foremost genealogists, Thomas Duckham more comprehensively put it, the Herefordshire breed was “an acknowledged aboriginal race of cattle indigenous to the soil of the county from whence they take their name.”<sup>22</sup>

That Herefords were a distinctive type with their origins in this part of England seemed clear enough to most observers. Thirty years before Duckham made his remarks,

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<sup>18</sup> Youatt Cattle p. 11. Bridgewater, at the mouth of the river Taw, is a mere forty miles west of where the river Parrett meets the Bristol Channel.

<sup>19</sup> “Among the Herefords: Mr. Boughton-Knight’s Herd at Leinthall,” *Livestock Journal* (2 April 1885), p. 327.

<sup>20</sup> John Speed, *England, Wales, and Scotland Described* (London, 1627). Quoted in James MacDonald and James Sinclair, *History of Hereford Cattle* (London: Vinton, 1909 [1886]), p. 1.

<sup>21</sup> George Garrard, *A Description of the Different Oxen Common in the British Isles* (1800). Quoted in *ibid.*, p. 7.

<sup>22</sup> T. Duckham, “A Lecture on the History, Progress, and Comparative Merits of the Hereford Breed of Cattle” (London: Rogerson & Tuxford, 1863. Reprinted in T. Duckham, *Eyton’s Herd Book of Hereford Cattle*, vol. 6 (Hereford and London: Longman and Co., 1868), p. 32. Paper originally given at the Royal Agricultural College at Cirencester, 4 December 1863.

William Youatt, too, had described them as “evidently an aboriginal breed.”<sup>23</sup> Yet declarations like these were more than mere statements of geographical fact. Rather, they were claims to a particular kind of status made necessary by the conditions of “improved” livestock production, and in particular, by the competition between the Hereford and Shorthorn breeds of cattle. The “case of Herefords v. Shorthorns” was perhaps the most intense bovine rivalry of the nineteenth century.<sup>24</sup> As purebred cattle redefined the standards of livestock breeding, the “improved” Shorthorn—replete with well-positioned, wealthy proponents, and recorded pedigrees—became the benchmark by which Herefords and other less refined breeds were judged.

In the absence of the official pedigrees that guaranteed the Shorthorn’s breeding, it was crucial for breeders of Hereford cattle to find equally convincing, alternative measures of purity. Through their rhetorical association with great antiquity, claims to aboriginality, nativeness, or indigeneity fulfilled this requirement at the turn of the nineteenth century, as did interpretations of the breed’s color and markings at mid-century. These were in fact conflicting metrics: the white face of the breed becoming its signature only through obvious manipulation of the breed’s genotype, thereby giving lie to earlier claims to an unchanged character and great antiquity. The institution of an official herd book for Hereford cattle in 1846 might have put the issue to rest, were it not for the fundamentally illusory nature of purity. That the desideratum of nineteenth-century pure-breeding was itself a construct meant that such contradictions between its metrics were less worrisome

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<sup>23</sup> Youatt, *Cattle*, p. 32.

<sup>24</sup> “The Hereford Cattle Outlook,” *Launceston Examiner* (6 April 1881), Supplement, p. 2.



than they might have been, but also that the construction, establishment, and defense purity remained a matter of concern and debate throughout the century, and beyond.

### *The butcher's breed*

In the early nineteenth century the Hereford—“that beautiful, hardy and flesh-forming race of cattle”<sup>25</sup>—was the outcome not only of the climate, environment, and productive regime of its home county, but also of the way in which it was integrated into the London meat market. Herefordshire was known as “rather a rearing than a feeding county,” its “soil...being neither applicable for dairy or feeding purposes.”<sup>26</sup> Its specialized livestock economy—Hereford agriculturalists having “made it their study to breed steers and oxen,” according to Duckham, “which should by their superior quality and aptitude to fatten command the attention of the distant grazier”<sup>27</sup>—and its position within the productive economy that served Britain’s largest metropolis, reflected this aspect of the county. Already by the nineteenth century, that system of production had a long and sophisticated history. As early as the seventeenth century, London’s hinterland stretched as far as Scotland, cattle and sheep being driven from the farthest reaches of Great Britain to satisfy the city’s demand for beef and mutton.<sup>28</sup> Towards the turn of the nineteenth century,

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<sup>25</sup> Duckham, “History, Progress, and Comparative Merits,” p. 4.

<sup>26</sup> Thomas Andrew Knight, “Account of the Herefordshire Breeds of Sheep, Cattle, Horses, and Hogs,” *Commercial and Agricultural Magazine* 7 (40) (November 1802), p. 334; Duckham, “History, Progress, and Comparative Merits,” p. 8.

<sup>27</sup> Duckham, “History, Progress, and Comparative Merits,” p. 8.

<sup>28</sup> William Cronon explores the relationship of production, consumption, and extraction between a metropolis and its hinterlands in the American context, James Belich in the global context. William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W. W. Norton, 1991); Belich, *Replenishing the Earth: The Settler Revolution and the Rise of the Anglo-World, 1783-1939* (Oxford and New York: Oxford

demand for meat (and other luxuries) intensified as greater prosperity, urbanization, and the rise of a middle class attended eighteenth-century industrial development. As the consuming public grew, and as the middle class sought outlets for their new-found affluence, meat consumption—always a rhetorically important element of the British diet—became increasingly important in actuality as well, and producing fat stock the stated aim and cherished goal of improved breeding in the early nineteenth century.<sup>29</sup>

Eating meat was at the core of national identity in Great Britain. According to William Youatt, it was one of the most ancient of national traits. “The fondness for this kind of food,” he wrote in *Cattle: Their Breeds, Management, and Diseases* (1834), “on account of which foreigners sometimes attempt to ridicule the Englishman, is inherited from ancestors of the remotest date.”<sup>30</sup> Whether or not a penchant for meat was a heritable trait, Britons were indeed enthusiastically carnivorous. The antiquarian John Kersley Fowler, author of *Records of Old Times: Historical, Social, Political, Sporting and Agricultural* (1898), recorded for posterity a particularly impressive menu he had enjoyed as the guest of a prosperous tenant farmer:

Clear soup, salmon and lobster sauce, two entrées, a saddle of four-year-old wedder mutton of his own breeding and feeding, two braces of partridges, sweets made by the ladies of the household, together with Amontillado sherry and Moët’s champagne; whilst after dinner... a splendid dessert, with grapes and peaches from his own garden, with the choicest old port and Château Lafitte claret.<sup>31</sup>

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University Press, 2009). For a discussion of how livestock reached London in the nineteenth century, see Robyn S. Metcalfe, *Meat, Commerce and the City: The London Food Market, 1800-1855* (London: Pickering and Chatto, 2012), pp. 17-21; Robert Trow-Smith, *A History of British Livestock Husbandry*, vol. 2 (London: Routledge and K. Paul, 1957), pp. 3-10; 172-3; 226-8.

<sup>29</sup> Trow-Smith, *British Livestock Husbandry*, pp. 45-6. See also Harriet Ritvo, *The Animal Estate: The English and Other Creatures in the Victorian Age* (Cambridge: Harvard University Press, 1987), p. 47.

<sup>30</sup> Youatt, *Cattle*, p. 4.

<sup>31</sup> J. Kersley Fowler, *Records of Old Times: Historical, Social, Political, Sporting and Agricultural* (London: Chatto & Windus, 1898), p. 92.

In its combination of refinements—both domestic and foreign—the menu was calculated to impress.<sup>32</sup>

Those who had the means to enjoy such vast quantities and varieties of “animal food,” but not the advantage of dining upon meat of their own breeding, stimulated demand for fat stock. Aided by new systems of management, the use of artificial feed—including turnips, oil-cake, and grain—and the improved techniques of selection pioneered by Bakewell and his ilk, breeders and graziers at the turn of the nineteenth century brought cattle to the peak of obesity.<sup>33</sup> Joseph Westcar, one of the most prominent Buckinghamshire grazier and a proponent of the Hereford breed at the turn of the nineteenth century, was famous for producing astonishingly fat oxen: one of his most enormous and most memorable triumphs tipped the scales of Smithfield market at “nearly 300 stone” in 1799.<sup>34</sup> (Westcar evidently valued bulk in his person as well as his animals.” Being himself a portly man, he was a fixture at fat stock shows—and their ceremonial dinners—“arrayed in all his glory of size, and shape, and fat!”).<sup>35</sup> Indeed, the improvements wrought on breeds of cattle were measured mainly in terms of a type’s propensity for, and quickness in, getting fat.<sup>36</sup> Breeders and graziers debated the relative merits of size—some preferred large animals, others small, but as Culley noted, whether or not “the object of extraordinary *large size* [was]...the pursuit of the enlightened

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<sup>32</sup> See Sarah Freeman, *Mutton and Oysters: the Victorians and their Food* (London: V. Gollancz, 1989), pp. 178-210, on changes to menus and dining habits in the nineteenth century.

<sup>33</sup> Ritvo, *Animal Estate*, ch. 1, esp. 56.

<sup>34</sup> “Extracts from the Minutes of the Smithfield Club from 1798 to 1900,” in E. J. Powell, *History of the Smithfield Club, from 1798 to 1900* (London: Smithfield Club, 1900), p. 27; Duckham, “History, Progress, and Comparative Merits,” p. 7.

<sup>35</sup> “On the Late Cattle Show, With Remarks,” *Agricultural Magazine* 1, n.s. (January 1813), p. 31.

<sup>36</sup> A number of agricultural worthies (including Westcar) together formed the Smithfield Club for the purpose, according to Powell, of “bringing out...the principle of early maturity.” Powell, *History of the Smithfield Club*, p. 1.

breeders...the more valuable property of getting *fat* at an *early age*” was increasingly the measure of success.<sup>37</sup>

As working oxen, Herefords initially lagged behind the more precocious Shorthorn in reaching great weight at an early age, but when it came to attaining massive size and quantities of fat flesh in the autumn of their days, they had no difficulties. Unlike such large breeds as the Sussex, which were of a “gaunt, flat, leggy and huge boned sort...always suggest[ing] the idea of being vast consumers,”<sup>38</sup> Herefords were “kindly feeders” and were “by many good judges considered to approach the nearest to that perfect state of any of the large breeds.”<sup>39</sup> John Duncumb, author of the *General View of the Agriculture of the County of Hereford* (1805), described the “true sort” of Herefords as possessing a “large size, an athletic form, and unusual neatness.”<sup>40</sup> More important even than their “fit[ness] for labour,” they excelled “as fattening stock,”<sup>41</sup> making them, as Juliet Clutton-Brock and Steven J. G. Hall put it, “ideally suited for the new trade in store cattle for fattening near London.”<sup>42</sup>

The Hereford breed was widely admired, numbering among the ranks of “the most picturesque cattle in England.”<sup>43</sup> Possessed of many requisite marks of bovine beauty, the male of the breed (whether an ox or a bull) was large in size and boasted “a mellow hide, well covered with soft glossy hair,” and “a moderate short head and wide forehead, from

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<sup>37</sup> George Culley, *Observations on Livestock, Containing Hints for Choosing and Improving the Best Breeds of the Most Useful Kinds of Domestic Animals*, 4th ed., (London: G. Wilkie & J. Robinson, 1807), p. 46.

<sup>38</sup> “On the Late Cattle Show, with Remarks,” *Agricultural Magazine* 1 (new series) (January 1813), p. 32.

<sup>39</sup> William Youatt, *The Complete Grazier: Or, Farmer’s and Cattle Breeder’s and Dealer’s Assistant*, 6th ed. (London: Baldwin and Craddock, 1833), p.9.

<sup>40</sup> Duncumb, *General View Hereford*, p.116.

<sup>41</sup> Youatt, *Complete Grazier*, p. 9.

<sup>42</sup> Clutton-Brock and Hall, *British Farm Livestock*, p. 76.

<sup>43</sup> “Hereford Cattle,” *Livestock Journal and Fancier’s Gazette* 18 (14 June 1882). Reprinted in *The Maitland Mercury and Hunter River General Advertiser* (New South Wales) (26 May 1883), p. 6.

which the horns...spring in a straight line."<sup>44</sup> The female, in comparison, was relatively small, "extremely delicate, and very feminine in its character,"<sup>45</sup> superlative specimens exhibiting a "pleasant and cheerful countenance."<sup>46</sup> Sexual dimorphism in Hereford cattle was of "a more extraordinary disproportion...than is to be found in any other of the superior breeds," but the small size of the female was no obstacle to the production of large oxen: Youatt reported that Hereford cows were "not unfrequently [sic] the mothers of oxen nearly three times their own weight."<sup>47</sup> Critics held the cow's small stature as a mark against the Hereford breed, but proponents argued that it was essential to the breed's superiority. "Experience seem[ed] to have fully proved," wrote Duncumb, that small cows produced the best oxen: "when the cow is large and masculine in its character, and heavily loaded with flesh the ox will be coarse and brawny, and consequently unkind and tedious in the process of fattening."<sup>48</sup>

Single-minded focus on Hereford oxen meant that "little attention [had] been paid to the cow." As long as she "possess[ed] the qualifications that long experience has proved to be necessary to ensure success with her progeny," breeders paid little selective heed to the females of the breed.<sup>49</sup> But even the diminutive and neglected Hereford cow was "capable of extending herself universally in a short space of time, when fattening."<sup>50</sup> So remarkable was the Hereford's "extraordinary merit as a beef-making breed" that it sent one anonymous enthusiast into raptures:

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<sup>44</sup> Duckham, "Breeding and Management," p.5.

<sup>45</sup> Duncumb, *General View Hereford*, p. 118.

<sup>46</sup> "Imported Hereford Cattle," *The Maitland Mercury and Hunter River General Advertiser* (22 March 1879), p. 6.

<sup>47</sup> Youatt, *Complete Grazier*, p. 9.

<sup>48</sup> Duncumb, *General View Hereford*, p. 119.

<sup>49</sup> Thomas Duckham, quoted in "The Hereford Breed of Cattle," *The Mercury* (3 May 1872), p. 3.

<sup>50</sup> Duncumb, *General View Hereford*, p.119.

Look at its frame! The frame is that of the butcher, great in width and depth of the fore-quarters. Look, also at its flesh, by hereditary disposition laid thickly upon those parts where cattle of the dairy breeds are thin and wedgy.<sup>51</sup>

Those parts—especially the hips, loins, and back, which for beef breeds, should be well-padded with flesh—were also among the most valuable cuts of meat, and the ability to concentrate fat and flesh upon them was one of the signature achievements of livestock improvers.<sup>52</sup>

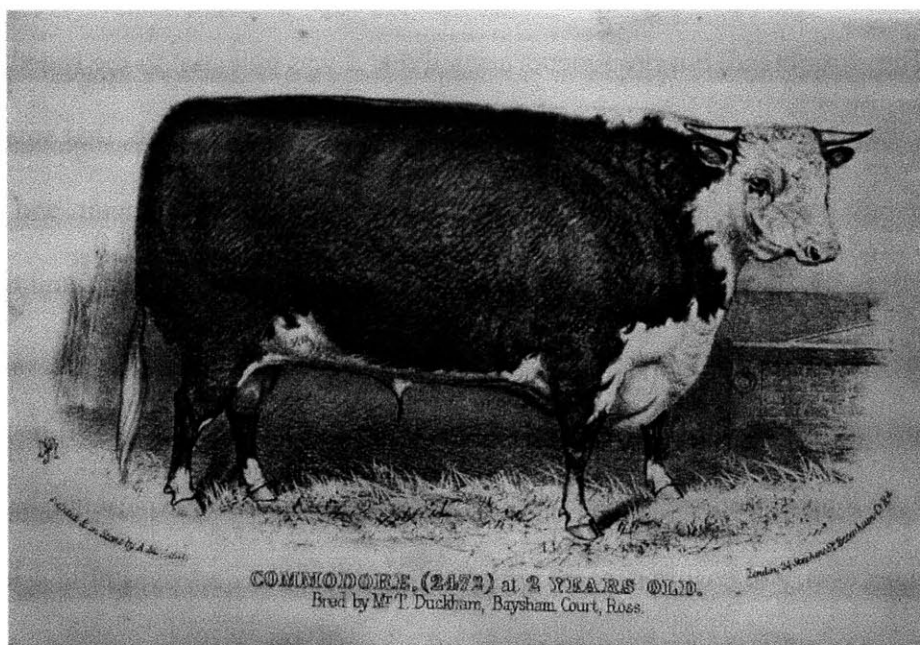


Figure 2. The bull Commodore, bred by Thomas Duckham. From T. Duckham, *Eyton's Herd Book of Hereford Cattle*, volume 6 (1865).

Temperament, too, played a role in the fattening abilities of a breed. Though with the passage of time, the capacity of a breed for producing beasts of labor was less often a measure of value for high end cattle, and the Hereford's "high degree of manifold utility"

<sup>51</sup> "Hereford Cattle," *Maitland Mercury* (1885), p. 21.

<sup>52</sup> Ritvo, Harriet. "Possessing Mother Nature: Genetic Capital in Eighteenth-Century Britain." In *Early Modern Conceptions of Property*, edited by John Brewer and Susan Staves, 413–26. London and New York: Routledge, 1995.

was subordinated to its fattening capacity in this regard,<sup>53</sup> the Hereford's roots as a working breed operated in its favor. Tenant farmers, it was asserted again and again, had selected (probably only semi-consciously) for an animal that would submit with docility to the plow. This had made them "tractable, teachable, and not given to nervousness"—all of which eased the handling of large beasts in any context, but were special assets when it came to fattening.<sup>54</sup> Herefords, in fact, seemed to strike the perfect balance between activity and quietude. They were not in the habit of "making long ranges" like some other types (notably hill breeds like the Scottish Highland or Kyles breed of cattle, which "could scarcely be restrained by any fence" and was known for its ability to thrive "on the coarsest of pastures"),<sup>55</sup> nor were they restless or "constantly in motion, but feed kindly and flesh as rapidly as feed and rest will enable them to do."<sup>56</sup> Neither did they fall to the other extreme—that of the pampered Shorthorn which, like the improved New Leicester Longwool depended upon supplemental feed to produce great quantities of flesh, milk and tallow, and which, according to a "pithy, but true" Australian maxim, "want[ed] to lie down and eat all round it."<sup>57</sup>

Specialization for beef production came at a cost, and that was the breed's milking tendencies. As a breed "most eminent for work and fattening,"<sup>58</sup> and with the emphasis placed on producing fat oxen for the London market, "little attention has been paid to the

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<sup>53</sup> T. Weston, "General Remarks on the Shew of Fat Cattle in Smithfield," *Commercial and Agricultural Magazine* 5, 29 (December 1801), p. 383.

<sup>54</sup> "Hereford Cattle," *South Australian Register* (14 December 1877), p. 9. Reprinted from the *Pacific Rural Press*.

<sup>55</sup> Youatt, *Cattle*, p. 68, 67.

<sup>56</sup> "Hereford Cattle," *S. Australian Register* (1877), p. 9.

<sup>57</sup> "Hereford Cattle," *Brisbane Courier* (13 December 1882), p. 3.

<sup>58</sup> Knight, "Herefordshire Breeds," p. 332.

cow.”<sup>59</sup> A possible explanation for the small size of Hereford cows relative both to males of the breed, and females of other varieties, a want of selective regard also meant that “she [had] obtained the character of being a bad milker.”<sup>60</sup> Among the wondrous improvement wrought on the Shorthorn breed, on the other hand, was the ability to produce copious quantities of milk—hence the preference of “the London cow-keepers” for the breed.<sup>61</sup> Cattle breeding in nineteenth-century Britain being a partisan occupation,<sup>62</sup> die-hard proponents of Herefords absolutely refused to cede ground to Shorthorns (or any other breed, for that matter) on any point. Enthusiasts argued that Hereford cows might produce less milk, but they made more milk *fat*,<sup>63</sup> but even Thomas Duckham conceded that with “the production of steers to meet the demand of the graziers being the chief aim of the breeders,” the “milking properties” of the cow “[had] been neglected.”<sup>64</sup> In general, to nineteenth-century stockbreeders, selecting for “beef and milk appear[ed] to be as antagonistic as mutton and wool.”<sup>65</sup> As Youatt put it in *The Complete Grazier*, “A breed of cattle equally adapted to the shambles, the dairy, and the plough, is indeed not to be met

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<sup>59</sup> “The Hereford Breed of Cattle,” *Mercury* (Hobart, Tasmania) (3 May 1872), p. 3.

<sup>60</sup> *Ibid.*

<sup>61</sup> “Remarks and Observations on Different Kinds of Cattle, Continued from our Last,” *Agricultural Magazine* 7 (December 1810), p.390. Richard Parkinson remarked that he did not believe there was “a single cow to be found in the possession of any cow-keeper in London of the Hereford breed.” Richard Parkinson, *Treatise on the Breeding and Management of Live Stock, in which the Principles and Proceedings of the New School of Breeders are Fully and Experimentally Discussed*, vol. 1 (London: Cadell and Davics, 1810), p. 111.

<sup>62</sup> As William Youatt remarked in the preface to *Cattle: Their Breeds and Management* (1834), so strong did feelings of partiality run among breeders that “although there is some excellence peculiar to each breed, there is none exempt from defect, and the honest statement of this defect will not satisfy the partisan of any one breed.” Youatt, *Cattle*, p. iii.

<sup>63</sup> “Important to Dairymen: Herefords and Short-horns,” *Farmer’s Magazine* 9 (May 1844), p. 555.

<sup>64</sup> Quoted from *The Field* in “The Hereford Breed of Cattle,” *Mercury* (Hobart, Tasmania) (3 May 1872), p. 3.

<sup>65</sup> “Cattle as Beef Producers,” p. 100.



with, and experience teaches that these properties are inconsistent with each other.”<sup>66</sup>

Improvement-minded breeders nevertheless continued to seek milk and meat as “a combination of excellencies,” but neither time nor “practice” produced proof that both milk and meat could be “combined in one breed to anything approaching perfection.”<sup>67</sup>

Simply producing meat for the new demands of the London market in the nineteenth century—never mind producing milk as well—was fraught with challenges. In one sense, consumer preference seemed to be driven by the notoriously “fastidious taste of the epicure,”<sup>68</sup> but there were the needs of the lower orders to consider and provide for, and in terms of sheer volume, this latter requirement would always outweigh the former. Despite their proportional irrelevancy, the higher orders and their freakish preferences exercised a defining authority over market production, and many blamed the epicure for the blubbery trend in beef production. When it came to mutton, the lean, gamey variety was deemed the most appropriate fare of the upper echelons (Chapter 2), and fatty mutton that of the working classes, but fat beef was a more variously appropriate, though more finicky, article of food.

Much like their contemporaries debating the relative merits of merino and Dishley sheep (Chapter 2), combatants exercised their views in the pages of the agricultural press. According to a satirical letter submitted to the *Agricultural Magazine* whose author claimed to represent the views of “Frugally Disposed Housekeepers,” the “folly-feeding

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<sup>66</sup> Youatt, *Complete Grazier*, p. 9.

<sup>67</sup> “Cattle as Beef Producers,” p. 100.

<sup>68</sup> Duckham, “Breeding and Management,” p. 7.

system”<sup>69</sup> (that is, the use of supplemental and artificial foods) produced “overfed cattle” and “grossly deteriorat[ed] the quality of our beef.”<sup>70</sup> At least one-third of the carcass of a well-fed beast was fat, which “no christian can eat, *or knows how to eat*,” complained the critic.<sup>71</sup> Instead “of it being the food of man,” the greasy flesh of such animals was fit only for use as industrial products: “the food of coachwheels and other machinery; or, handed to Mr. *Glimmer-light* and moulded into a dapper-looking fellow—a tender hearted, *melting* soul.”<sup>72</sup> Speaking for the agricultural interest, and as an advocate for improved cattle rearing, T. Weston defended fat cattle and their producers against “such short sighted and ungrateful alarmists.”<sup>73</sup> Weston assured his interlocutor that, in producing enormous specimens of fat cattle, it was “not quantity, merely, and a consequent reduction of price” that motivated breeders and graziers, but also a desire to raise the “quality of the beef.” Exhibitors of fat cattle paid “due regard to the pleasure, as well as to the profit, of your unthankful petitioners,”<sup>74</sup> Weston retorted, and any aspersions to the contrary were “founded only on misconception, and tend only to towards evil.”<sup>75</sup>

Producing fat cattle approached an art form in the early nineteenth century, in which type and method both needed careful calibration. According to Weston, the “anxious wish” of improvement-minded breeders and graziers was two-fold: to ascertain “what particular breed of cattle has the strongest propensity to fatten;” and “to give every

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<sup>69</sup> “The Humble Petition of 500,000 Frugally Disposed Housekeepers, Resident in the United Kingdoms of England, Scotland, and Ireland,” *Commercial and Agricultural Magazine* 3, 17 (December 1800), p. 404

<sup>70</sup> *Ibid*; T. Weston, “Answer to the Petition of 500,000 Housekeepers,” *Commercial and Agricultural Magazine*, vol. 4, no. 18 (January 1801), p. 6.

<sup>71</sup> “Humble Petition,” p.404. Italics original.

<sup>72</sup> *Ibid*. Italics original.

<sup>73</sup> Weston, “Answer to the Petition,” p. 6.

<sup>74</sup> *Ibid*, p. 7.

<sup>75</sup> Weston, “Answer to the Petition,” p. 6.

encouragement to that species of cattle which shews the strongest inclination to accumulate fat on those particular parts that are in peculiar estimation in the London market.”<sup>76</sup> The artful produce of this endeavor—“the aforesaid extraordinary fat beef”—was as finely tuned as the animal that produced it, and required special care on the part of the consumer. As a product intended for the discerning palate of the epicure, those among the newly-affluent middle orders who aspired to its consumption, it seemed, needed instruction on the appropriate mode of preparation. “They are not to devour it in their usual way,” cautioned Weston, “but to take quality for quantity,” enjoying it “not...by the pound, but by the ounce,” and ought “always to take it fasting, for this beef of high quality disdains to intermix peaceably with common food.”<sup>77</sup>

The public was apt to underestimate the skill required to produce this fine product. In 1801, the writer of a particularly venomous letter to the *Times*, signing himself “Agricola,” chided the Smithfield Club for its willingness to reward extreme fatness of the kind Weston encouraged. “If we may judge by the decisions which have been made instead upon the like occasions at Smithfield,” he wrote, “the *fattest* animals are considered the *best*”<sup>78</sup>—a common refrain among critics of fat cattle.<sup>79</sup> Responding in the *Commercial and Agricultural Magazine*, Weston again defended producers against the complaints of the consuming public, claiming that the allocation of prizes was always made upon a more complex calculation: “that peculiar form in the animal which indicates a disposition to

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<sup>76</sup> Ibid.

<sup>77</sup> Ibid, p. 8.

<sup>78</sup> Quoted in T. Weston, “General Remarks on the Shew of Fat Cattle in Smithfield,” *Commercial and Agricultural Magazine* (December 1801), p. 383. Italics original.

<sup>79</sup> Ritvo, *Animal Estate*, p. 72-74.

fatten, and at the same time a delicacy in the meat which it produces, the smallness of its bones...and likewise the size of the beast.”<sup>80</sup>

Just what combination of size, delicacy, and fineness of bone would “yield the greatest quantity of animal food for man, from the produce of a given quantity of land,” was difficult to ascertain.<sup>81</sup> While Weston promoted selecting for fine frames, others believed this to be a practice “founded on a very bad principle...for the diminution of the bone occasions a diminution of other useful qualities.”<sup>82</sup> A writer for the *Agricultural Magazine* addressed the issue in more moderate terms, but was nonetheless “thoroughly convinced that very small bones and sinews, which generally go together, indicated small quantities of flesh, causing light weights and bad butcher’s cattle.”<sup>83</sup> Detractors of fine frames, though, were in the minority, and the combination of delicate bones and fat flesh was a mark of nearly every “improved” breed at the turn of the century.<sup>84</sup>

Partisans of the Hereford proclaimed that their preferred breed epitomized these aims: according to the its early chroniclers, “many who viewed this animal alive” in the early days of the breed “never saw so much beef under a hide of the size, and upon so small a proportion of bone.”<sup>85</sup> Whether Shorthorn, Hereford, or another breed altogether, the stakes of breeding for beef were high. When it came to selection and improvement, the potential cost of any error in judgment was “a loss to all parties concerned,” but

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<sup>80</sup> As proof, Weston cited a recent decision to give preference to one of Westcar’s oxen—of a larger size but less fat—over a fatter animal. Weston, “Shew of Fat Cattle,” p.383.

<sup>81</sup> “Proceedings of Agricultural Societies: Smithfield Club,” *Agricultural Magazine* 13, 77 (December 1805), p. 431.

<sup>82</sup> “Remarks and Observations (cont.),” p. 395.

<sup>83</sup> *Ibid.*, p. 396.

<sup>84</sup> See Chapter 2 for a discussion of this in reference to sheep, especially the Dishley breed. See also Ritvo, *Animal Estate*, p. 17.

<sup>85</sup> MacDonald and Sinclair, *Hereford Cattle*, p. 6.

“eventually [fell] heaviest on the consumer,” who, for lack of better options, was forced to purchase an inferior product.<sup>86</sup> At a time of population growth, “increas[ing] the food supply [of] the nation” became an object of “vital importance.”<sup>87</sup> In particular, “in a country where markets demand[ed] so large a portion of animal food,” wrote John Duncumb, “the improvement of those animals which supply it, becomes an object of general and great importance.”<sup>88</sup> Much like their contemporaries in wool production (Chapter 2), breeders and graziers thus perceived that their actions pertained to issues of national significance. “With spirited and wise selection,” “Herefordshire farmers,” no less than breeders of other types, had raised their object of study so high that, at the outset of the nineteenth century, “the Public [was] now on the eve of receiving great and incalculable benefits.”<sup>89</sup> The outcome of livestock husbandry—the production of nourishment for the British populace—was never far from the minds of those who bred or raised beef cattle, nor from those who debated their relative merits.

### *Native purity*

Producing such fat cattle relied not only on new methods of management and husbandry, but on the manipulation of the animals’ hereditary profile on a hitherto unprecedented scale. Honing the genotype of a given population was most often achieved (as discussed in Chapter 1) by intensive inbreeding, and the result was a growing regard for purity of

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<sup>86</sup> “Remarks and Observations (cont.),” p. 396.

<sup>87</sup> Powell, *Smithfield Club*, p. 2, 1.

<sup>88</sup> Duncumb, *General View Hereford*, p. 177.

<sup>89</sup> Weston, “Shew of Fat Cattle,” p.383.

descent. As purebred types came to the fore, purity became the overriding principle of British livestock breeding. It was no longer sufficient to simply produce handsome cattle. The ability of an animal to consistently replicate its desired traits in its offspring—to “breed true to type”—was now the most important measure of the value of an animal.<sup>90</sup> As time wore on, pedigrees that recorded the genealogical history of individual animals increasingly served as a guarantee of this for “improved” pure breeds like Shorthorns, but in the absence of such officially sanctioned purity—the *Herd Book of Hereford Cattle* was not commenced until 1846—less refined types like the Hereford or the Devonshire breed had to rely on alternative measures.<sup>91</sup> One of the first such alternative metrics was the label “native,” which took on new valences beyond simply the geographical around the turn of the nineteenth century. Through its corollary, the idea of antiquity, designating a breed as “native” to a particular place increasingly operated as a proxy for the kind of synthetic purity produced by improved methods.

In 1885, a commentator for the *Livestock Journal* noted that “of late years[,] many old beliefs respecting the origins of different breeds of cattle have become rudely disturbed.”<sup>92</sup> In fact, such notions had always been subject to controversy. Despite the certainty with which Duckham declared the Hereford an “aboriginal race of cattle indigenous to the soil” of Herefordshire,<sup>93</sup> whether Hereford cattle were, in fact, a true breed was a matter of debate stretching back at least to the 1780s. Observers were divided

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<sup>90</sup> Ritvo, “Possessing Mother Nature.”

<sup>91</sup> George Coates, *The General Short-Horned Herd-Book: Containing the Pedigrees of Short-horned Bulls, Cows, et. of the Improved Durham Breed, from the Earliest Account to the Year 1822* (Otley: W. Walker, 1822); T. C. Eyton, *The Herd Book of Hereford Cattle*, 1 (London: Longman and Co., 1846).

<sup>92</sup> “Hereford Cattle,” *Illustrated Sydney News* (19 March 1881), p. 15.

<sup>93</sup> Duckham, “History, Progress, and Comparative Merits,” p. 32.

as to whether it was an artificial type, amalgamated out of longer-standing “true” breeds (for example, the Devonshire breed crossed with Welsh mountain cattle), or whether the Hereford was itself a breed whose origins could be traced to an original type of British cattle.

That a seemingly coherent breed like the Hereford might be nothing more than a mix of types was of serious concern to enthusiasts in the late eighteenth and early nineteenth centuries. In his first edition of *Observations on Livestock*, George Culley wrote, “as to the Herefordshire brown cattle they are, I am pretty clear, neither more nor less than a mixture between the Welch [sic] and a bastard race of long horns, that are every-where to be met with in Cheshire, Shropshire, &c.”<sup>94</sup> Such aspersions were a threat “to the cause of the Herefords, as a *breed*,” according to J. H. Campbell, who complained angrily to Arthur Young, editor of the *Annals of Agriculture*, that Culley made the Hereford “a strange hodge-podge of Welsh and some illegitimates, that he represents wandering about some two or three counties.”<sup>95</sup> More than this, he was concerned that Young’s notice of Culley’s volume, which he “ushered in with such flattering marks of approbation, and so many very high compliments,” was more than the work merited, and, Campbell wrote, “must certainly add much more weight to *his*”—that is, to Culley’s—“evidence with the jury, than (with submission) it seems to me to deserve.”<sup>96</sup>

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<sup>94</sup> Culley, *Observations on Livestock* (1786), p.21. Also quoted in Campbell, “Breeds of Cattle and Sheep,” p. 227.

<sup>95</sup> J. H. Campbell, “On the Breeds of Cattle and Sheep,” *Annals of Agriculture* 16 (1790), p. 226. Italics original.

<sup>96</sup> Campbell, “Breeds of Cattle,” p. 226. For his part, upon further consideration, Culley replied to Campbell that he willing to revise his position and “to suppose they may be an original breed,” and he promised to correct his mistake in future editions. See George Culley, “On Cattle,” *Annals of Agriculture* 16 (1790), p. 181. Culley made good on that promise, eliminating the offending remarks entirely from his description of the “Herefordshire Cattle.” Culley, *Observations on Livestock* (1807), p.52-3.

In part, these doubts reflect the confused state of “improvement” in the early nineteenth century. Even very localized types circulated, and the alacrity with which would-be improvers crossed different breeds remained a point of concern for proponents of the pure-breeding method. “Q.”—a frequent contributor to the *Agricultural Magazine*—worried that the idea that “perpetually crossing varieties” was “essential to improvement...generally end[ed] in confusion worse confounded,” and—at least as important—explained why breeders, “having a cross in their own pates,” found themselves forever without any “valuable stock.”<sup>97</sup> Doubt as to the origins of the Hereford breed also reflected a simpler confusion that arose from the practice of calling a breed after its native county. To so name a type after “the county in which they chance to have been bred” was a custom “liable to inconvenience and misconception,” Q. continued, and was too widely pursued “without the smallest notice or advertence to the crosses of blood which may be in them.”<sup>98</sup> As a result, one was apt to encounter animals “called a Hereford, but no more like a true bred Hereford, than an Alderney or a Devon.”<sup>99</sup>

Confusion over county monikers certainly could detract from the coherence of a breed, but the issue went deeper than mere semantics, and Culley was not alone in casting doubt on the origins, and by implication the purity, of Hereford cattle. As strictures governing the purity of improved breeds like the Shorthorn were strengthened after the 1780s, mere localization seemed an increasingly insufficient guarantee of purity. As Youatt remarked, “each county has its own mongrel breed, often difficult to be described

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<sup>97</sup> Q., “Remarks on the Late Cattle Show,” *Agricultural Magazine* 8 (January 1811), p.15.

<sup>98</sup> *Ibid.*

<sup>99</sup> *Ibid.*, p. 14.



and not to be traced.”<sup>100</sup> For a regional breed like the Hereford, whose breeders aspired to national prominence—Weston declared in 1801, more in hope than in fact, that “this breed [was] spreading very fast, and will, in a few years, exhibit their white faces in almost every pasture in this Island”<sup>101</sup>—this connection between county and breed could be damaging. An unnamed essayist for the *Agricultural Magazine* declared in 1810 that the Hereford “had every appearance of being a mixed breed,”<sup>102</sup> and even a self-confessed fan of the type admitted that “their origin has not been well ascertained,” supposed by some to have been nothing more than “a cross between the South Wales runt, and the Holderness breed of cattle.”<sup>103</sup>

Thus it was not merely a question of *whether* Herefords were produced in Herefordshire, but *when*, and indeed, *how*—and more than just locality was at stake in the meaning of “native” in the early decades of the nineteenth century. Antiquity, too, was a significant component of the debated meanings of the descriptor as it applied to breeds of cattle. Much of this revolved around notions of where and how British types had developed, a question that puzzled specialists in the nineteenth century. While the perception that to be a regional type was to be “unimproved,” unrefined, or even “mongrel bred,” was a most damaging association of locality and type, Britons were at the same time proud of the diversity of bovine types (much like Great Britain’s ovine diversity), reflecting as it did both the unusually varied topography of the British Isles, and the

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<sup>100</sup> Youatt, *Cattle*, p. 9.

<sup>101</sup> Weston, “Shew of Fat Cattle,” p. 383.

<sup>102</sup> “Remarks and Observations on Different Sorts of Cattle,” *Agricultural Magazine* 7 (November 1810), p. 326.

<sup>103</sup> T. S., “On the Choice and Management of Dairy Stock, with a few Observations on the Best Methods of Rearing Calves,” *Agricultural Magazine* 3 (July 1808), p. 7.

ingenuity of British breeders. “There is as great a variety in our breeds of cattle as [of] sheep,” a contributor to the *Livestock Journal* wrote proudly in 1875, “length of horn, colour, bulk of frame, shape, and other characteristics distinguish them.”<sup>104</sup>

Such diversity was indeed remarkable. “The breeds of cattle, as they are now found in Great Britain,” proclaimed Youatt, “are almost as various as the soil of the different districts, or the fancies of the breeders.”<sup>105</sup> Some had long horns—of a “disproportionate and frequently unbecoming length,” projecting “nearly horizontally on either side,” or “curved so as to threaten to meet before the muzzle”—while others were polled.<sup>106</sup> Some, like the Kyoeloe breed, had long, shaggy coats; others, like the Alderney or Shorthorn, thin, nearly hairless hides.<sup>107</sup> Some were all black, reddish-brown, or pure white; others were mottled, brindled, spotted, or “*sheeted*”—the head, shoulders, and hindquarters “appear[ing] as if they were uncovered, while there is a sheet [of a different color] fairly and perfect thrown over the barrel.”<sup>108</sup>

Which, out of this wonderful array, was *the* original British breed was the source of “much dispute,” although no one doubted the existence of such a thing, or their ability to identify it.<sup>109</sup> To some, a multiplicity of origins seemed a reasonable supposition given the environmental and biological diversity of Great Britain.<sup>110</sup> In his *Observations on Livestock*, Culley “venture[d] a conjecture” on the subject, supposing it probable that

<sup>104</sup> “Hereford Cattle,” (1875), p. 688.

<sup>105</sup> Youatt, *Cattle*, p. 9.

<sup>106</sup> That is, without horns. Youatt, *Cattle*, p. 188.

<sup>107</sup> Youatt, *Complete Grazier*, p. 11.

<sup>108</sup> Breeds displaying markings of this sort are today called “belted” cattle. The “barrel” is the torso of an animal. Youatt, *Cattle*, p. 28.

<sup>109</sup> *Ibid.*, p. 9.

<sup>110</sup> The great diversity of domesticates, bovine or otherwise, has at one time or another suggested to observers multiple moments of domestication for a given species. Current theory holds, and is supported by genetic evidence, that each species was domesticated only once.

Longhorn cattle had been the “original...inhabitants of the open plain country; whilst the Wild breed, or perhaps the Welch [sic] and Scotch, possessed the woody, wild, and mountainous parts of the island.”<sup>111</sup> Such a position had the advantage of both paying homage to Robert Bakewell’s “improved” Longhorn breed—the less successful bovine companion to his celebrated Dishley sheep—and occupying the middle ground of a battle “stoutly fought,” as Youatt noted, between the advocates of the long-horned variety and those of the middle-horned type.<sup>112</sup> Culley’s contemporary, William Marshall, evidently of a disposition less given to flattery, saw it otherwise. The Norfolk, Devonshire, and Hereford breeds—varieties of the “middle horn” type (British breeds having “been very conveniently classed according to the comparative size of the horns”)<sup>113</sup>—had all “sprung from the same stock.”<sup>114</sup> They appeared to Marshall to be “varieties, arising from soils and management, of the native breed of this island.”<sup>115</sup> Like Marshall, Youatt found himself “very much disposed to adjudge the honour to the ‘middle horns.’” Not “derived from a mixture” of the long- and short-horned types, Youatt was quick to note, the middle-horned variety, represented by Devons, Herefords, and Sussex cattle, were “a distinct and valuable and beautiful breed.”<sup>116</sup> These types alone, rather than the more exalted improved

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<sup>111</sup> Culley, *Observations on Livestock* (1807), p. 55.

<sup>112</sup> Youatt, *Cattle*, p. 9. Though Bakewell is credited with “improving” the Longhorn type native to Lancashire in the late eighteenth century, his methods were less effective upon cattle than sheep, and the Improved Longhorn was never as widely adopted, or as loudly applauded, as its contemporary, the Improved Shorthorn. Ritvo, “Possessing Mother Nature;” Trow-Smith, *British Livestock Husbandry*, p. 83-89. In the mid-1980s, the Longhorn Cattle Society of England continued to tout the English Longhorn as “Britain’s oldest Beef Breed.” Quoted in Donald E. Worcester, *The Texas Longhorn, Relic of the Past, Asset for the Future* (College Station: Texas A & M University Press, 1987), p. 14.

<sup>113</sup> Youatt, *Cattle*, p. 9.

<sup>114</sup> William Humphrey Marshall, *The Rural Economy of the West of England: Including Minutes of Practice, in that Department*, 2nd ed., vol. 1 (London: G. & W. Nicol, 1805), p. 236.

<sup>115</sup> Ibid.

<sup>116</sup> Youatt, *Cattle*, p. 9.

Shorthorns or Longhorns, were, so Youatt supposed, heirs to the original breed domesticated by the ancient Britons.<sup>117</sup>

Whether Herefords descended from the original British breed, then—and if so, in what proximity—was of consequence to its value among livestock breeders and fanciers. Though seemingly a well-established and even ancient type, Herefords could hardly be *the* original British breed of cattle—this honor was usually reserved for the “wild white cattle” found at Chillingham, Chartley, and a few other aristocratic estates.<sup>118</sup> These wild cattle were, in Marshall’s estimation, the parent stock of the Hereford and its allied types, and were “a race of animals, which, it is highly probable, once ranged...in a state of nature,” much as the bison still did in the nineteenth century in “the wild regions of North America.”<sup>119</sup> This type seemed especially disposed to give rise to flights of fancy among nineteenth-century observers,<sup>120</sup> and in a particularly imaginative interpretation, Youatt theorized that during successive waves of invasions, the ancient inhabitants of great Britain had retreated before “ferocious invaders” to “the fortresses of North Devon and Cornwall, or the more mountainous regions of Wales.”<sup>121</sup> Once there, they undertook “the strict preservation of that which principally reminded them of their native country before it had

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<sup>117</sup> Longhorns, according to Youatt, were “evidently of Irish extraction,” and Shorthorns of even more “foreign” extraction. Youatt, *Cattle*, p. 9.

<sup>118</sup> Harriet Ritvo, “Race, Breed, and Myths of Origin: Chillingham Cattle as Ancient Britons,” in *Noble Cows and Hybrid Zebras*, p. 140-141. Ritvo notes that nineteenth-century antiquarians erroneously connected these so-called wild park cattle to a pre-Roman type found in the south of England and the midlands. Ritvo, *Animal Estate*, p. 46, 300 n. 4. Bovines were originally domesticated in western Asia and southeast Europe, and in northern Europe, they “probably resembled quite closely the modern Dexter breed.” Juliet Clutton-Brock, *A Natural History of Domesticated Mammals* (London and Cambridge: Cambridge University Press, 1987), p. 68.

<sup>119</sup> Marshall, *West of England*, p. 236.

<sup>120</sup> Ritvo, “Race, Breed, and Myths of Origin,” pp.132-156, esp. p.148.

<sup>121</sup> Youatt, *Cattle*, p. 9, 10.

yielded to a foreign yoke”—that is, their cattle.<sup>122</sup> Far fetched as this may seem as both a rationale for the preservation of type, and as an explanation of the diffusion—and diversity—of British breeds, it suggested that by comparing breeds from diverse regions, and deducing from linguistic and archeological evidence where and how different waves of migrants had moved through the British Isles, the antiquarian with an interest in livestock types could determine which of the county breeds were the most ancient.

For Youatt, the manifest tendency of ancient Britons to retreat to the mountains, woods, and “fortresses” of Devon, Sussex, Wales and Scotland meant that, by extension, the cattle of these few choice regions were, thanks to the accident of history and geography, closer to this supposedly original type. “Everyone who has had the opportunities of comparing the Devon cattle with the wild breed of the Chatelherault Park, or Chillingham Castle,” he proclaimed, “has been struck with the great resemblance in many points, notwithstanding the difference of colour, while they bear no likeness at all to the cattle of the neighbouring county.”<sup>123</sup> In these regional strongholds, he believed, the breed of cattle had been “the same from time immemorial,” while elsewhere “through every district of Britain,” it had “degenerated” through intermixture, ancient and modern.<sup>124</sup> The Devonshire breed took the palm for primacy in Youatt’s view, but Herefords, he declared, were also “evidently an aboriginal breed, and descended from the same stock as the Devons”—and, therefore, positioned upon a closely-related branch of the

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<sup>122</sup> Youatt, *Cattle*, p. 10.

<sup>123</sup> Youatt, *Cattle*, p. 10. In this, he followed Marshall, who wrote that “their color apart, they nearly resemble the wild cattle which are still preserved in Chillingham Park, in Northumberland.” Marshall, *West of England*, p. 236.

<sup>124</sup> Youatt, *Cattle*, p. 10.

family tree of British cattle.<sup>125</sup> Thus through their connection to their native region, and their presumed antiquity, Hereford cattle could begin to assume some of the purity requisite, in Campbell's phrasing, "to their cause as a *breed*."<sup>126</sup>

#### *A token of trueness*

If the association between purity and nativeness was complicated by notions of antiquity and primacy, phenotypic diversity added another layer of complexity to the meaning, signification, and consequences of the connection between the two categories. If anything, Herefords had historically exhibited a wider a range of markings and colorations than other breeds—grey, speckled, all red, yellow, mottle-faced, and so on. And each of these types-within-a-type had its champions. Partisan loyalty was such that when Thomas Campbell Eyton published the first volume of the *Herd Book of Hereford Cattle* in 1846, he found it necessary to "disarrange the work," which "decidedly should have been alphabetically arranged," in favor of an order that gave preference to the mottle-faced variety so as to placate its influential supporters.<sup>127</sup> Among this variety's champions was Benjamin Tomkins, one of the most illustrious of the early Hereford breeders in the eighteenth century, while Joseph Westcar built his reputation as the "Prince of Graziers" on the grey strain: many of his "triumphs" at the London fat cattle shows were achieved on the back of this type.<sup>128</sup> Thomas Andrew Knight—the well-known botanist whose interests in breeding

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<sup>125</sup> Youatt, *Cattle*, p. 32.

<sup>126</sup> Campbell, "Breeds of Cattle," p. 226.

<sup>127</sup> Duckham, "History, Progress, and Comparative Merits," p. 10.

<sup>128</sup> Duckham, "History, Progress, and Comparative Merits," p. 13, 15.

spanned the plant and animal kingdoms<sup>129</sup>—also favored the “light colour” in his own herd of cattle. Although the “Knight coat” did not “survive the test of time and fashion,” his reputation as a breeder of Hereford cattle was such that the “Knight blood” could still be seen to “[flow] freely” in the excellence of frame that marked “nearly all the best Hereford herds” as late as the 1880s.<sup>130</sup>

By the middle of the nineteenth century such variability had come to seem unsatisfactory. The commencement of a herd book for Shorthorn cattle in 1822 put pressure on the breeders of other types to demonstrate their own cattle’s purity of blood.<sup>131</sup> Whereas the security of pure descent that an established herd book offered enabled Shorthorn cattle to retain their own “beautifully varied” mottled and speckled hides, by the 1840s at the latest all Herefords were “white-faced [and] ruby-hued,” uniformity of type coming to serve as a visual measure of purity, just as antiquity did rhetorically.<sup>132</sup>

Produced by rigorous and unyielding selection of a dominant trait, such consistency (in form, frame, and stature as well as in color) made for an impressive display whenever Hereford cattle were gathered in numbers. For Thomas Duckham, there could be “no finer sight for the admirers of cattle” than the city of Hereford’s annual fair, which took place in October. On this occasion “several thousands of steers”—with their breeders as well as the graziers who occupied “the fertile pastures of Bucks, Northampton, Kent, Essex, &c.”—

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<sup>129</sup> Thomas Andrew Knight was president of the London Horticultural Society during his lifetime, and also the author of a number of scientific papers on plant and animal breeding, including “An Account of some Experiments of the Fecundation of Vegetables, in a Letter from Thomas Andrew Knight, Esq., to the Right Hon. Sir Joseph Banks, K. B. P. R. S.,” *Philosophical Transactions of the Royal Society of London* 89 (1799) pp. 195-204; and “On the Hereditary Instinctive Propensities of Animals,” *Phil. Trans. Royal Society* 127 (1837), pp. 365-369.

<sup>130</sup> “Among the Herefords: Leinthall,” p. 327.

<sup>131</sup> George Coates, *The General Short-Horned Herd-Book*.

<sup>132</sup> Youatt, *Cattle*, p. 226; “Herefords in Westmeath,” p. 450.

congregated in the ancient city.<sup>133</sup> “Whatever may have been their original colour and distinctive marks in days of yore,” wrote Duckham,

their present uniform appearance cannot fail to impress those who attend that fair for the first time with a degree of surprise and admiration in their walk through the streets of the city, to see line after line of them all displaying a similarity of character, and at once claiming each other as one family.<sup>134</sup>

Of course, this was more than an opportunity to display the uniformity of the breed: as the moment at which steers passed from the hands of breeders to “the principal graziers in the counties near the metropolis, [to] there [be] perfected for the London markets,” the Michaelmas fair had practical purpose.<sup>135</sup> But even observers with less at stake in the fortune of the Hereford breed, like John Kersley Fowler, (who dabbled as a grazier as well as an antiquarian) were struck by the sight of so many nearly identical cattle. Fowler’s allegiance to the Hereford’s rival did not prevent him from acknowledging that the Hereford fair was “a sight that differs from anything of its class in England.”<sup>136</sup> Thousands of cattle could be seen throughout the streets of the city, “all of one type and colour, the latter being a deep brownish red, with clear white faces and bellies, a strip of white down the spine...and the tip of the tail.” So complete was the breed’s grasp on its native county that “no appearance of a shorthorn or any other breed was in the city,” he wrote, “except, perhaps, a few Devons.”<sup>137</sup>

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<sup>133</sup> Duckham, “History, Progress, and Comparative Merits,” p. 9.

<sup>134</sup> Ibid.

<sup>135</sup> Duncumb, *General View Hereford*, p.116.

<sup>136</sup> Fowler, *Records of Old Times*, p. 96. He described himself as “for many years an ardent admirer and somewhat successful breeder of Shorthorns.” Ibid, p. 95.

<sup>137</sup> Ibid, p. 96. Duncumb described the Hereford fair in similar terms: “The shew of oxen in thriving condition at the Michaelmas fair in Hereford, cannot be exceeded by any similar annual collection in England.” Duncumb, *General View Hereford*, p.116. The Devons were considered closely related to the Hereford, although more frisky and not as easily fattened.



Subtler regularities in flesh and form—a well-set tail and full “twist;” “well-sprung” ribs; a “thick and round chine”<sup>138</sup>—were also important elements in the consistency of the breed, and were in theory subject to as much variation as markings and coat color. But color and markings were among the most obvious and pliable of a type’s characteristics, and the Hereford’s predictable “cherry-sides and white faces” thus operated as an easy shorthand for the breed’s uniformity.<sup>139</sup> Precisely when the white-faced type superseded other varieties is a matter of debate. Reference to this trait was common at the turn of the century, but other phenotypic varieties persisted—albeit in decreasing proportion—until the 1840s, when the transition to a unified appearance was mostly complete.<sup>140</sup> In different versions of the Hereford’s creation myth (as related by Duckham in his 1863 address), the trademark white face appears in the breed by various means: the introduction of cows of a “red-with-white-face breed from Flanders” in the seventeenth century; spontaneous (if not miraculous) generation of a bull bearing the white face from an all-brown herd; or the “probable effects produced by a commingling of blood of the different classes.”<sup>141</sup> The latter option was the most likely but also the least satisfying, and

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<sup>138</sup> E. F. Welles, *Remarks and Suggestions on the Form of Cattle, with Illustrations Indicative of the True and the Defective* (Hereford: J. Head, n.d.), p. 6, 7, 11. The chine refers to the spine and back of an animal.

<sup>139</sup> Quoted from the *Hereford Times* in “Hereford Cattle,” *Maitland Mercury & Hunter River General Advertiser* (New South Wales), 3 October 1885, supplement, p. 3.

<sup>140</sup> In the 1790s, the characteristic color of “the true breed” was “a middle red [with] a ‘bald face,’” according to MacDonald and Sinclair, and in 1802 Knight described the “Herefordshire colour” as “a deep red, with a white face.” MacDonald and Sinclair, *Hereford Cattle*, p. 5; Knight, “Herefordshire Breeds,” p. 332.

<sup>141</sup> Thomas Andrew Knight, quoted in Duckham, “History, Progress, and Comparative Merits,” p 5. *Ibid.*, p. 4, 5. Knight was careful, though, not to suggest that the Hereford breed itself was exogenous, only that “its superiority was attributed to the importation of Flemish cattle...thus...convey[ing] the impression that the infusion of the Flanders strain into the Hereford cattle had developed the good properties of the native breed to a greater extent than had before been attained.” MacDonald and Sinclair, *Hereford Cattle*, p. 14.

Duckham, who wished to “confine [his] remarks...to facts which can be proved,” primly declined to “enter further into any...surmises” of that nature.<sup>142</sup>

Exactly when and how this transition occurred continued to occupy breed historians and genealogists for generations, in spite—or perhaps because—of this lack of certainty, but the particulars of *how* the white-faced type became “universally prevalent” is of less interest than *why* it seemed significant.<sup>143</sup> If, as evidence suggested, the Hereford could not be *the* original British type, the white-faced Hereford could at least be the original *Hereford* type. Uniform color came to be perceived as “a token of trueness,”<sup>144</sup> and thus Duckham argued that the absolute uniformity “of color and marks” testified to the authenticity of the breed, “[going] far to prove it to be the original breed [of Hereford cattle], let the other classes have sprung from whatsoever accidental or other causes they may.”<sup>145</sup>

This rhetorical use of phenotypic regularity as a demonstration of purity at mid-century complicated the connection that early commentary had drawn between nativeness and purity of descent. In some ways, it was a departure from the way in which “native” status and its contingent historicity was used to confer purity upon the Hereford breed in an earlier epoch. Because indisputable evidence demonstrated the variability of phenotype in bygone days, the new red and white uniform worn by the breed was evidence that “considerable alterations have been effected in the breed,” and recently at that.<sup>146</sup> The “fixity of colour in Herefords,” therefore, was proof itself that “if aboriginal, Herefords

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<sup>142</sup> Duckham, “History, Progress, and Comparative Merits,” p. 5.

<sup>143</sup> “Among the Herefords: Leinthall,” p. 327.

<sup>144</sup> MacDonald and Sinclair, *Hereford Cattle*, p. 7.

<sup>145</sup> Duckham, “History, Progress, and Comparative Merits,” p. 12.

<sup>146</sup> “Hereford Cattle,” *Livestock Journal* 2 (12 November 1875), p. 689.

have deviated very materially from their original type.”<sup>147</sup> Despite the ways in which it seemed to contradict theories of aboriginality, and thus purity of descent in one sense, this new metric was adopted widely and enthusiastically. Nor did this novel visual cue displace the existing metric of indigeneity: both uniformity and nativeness continued to operate as gauges of the breed’s lineage, sometimes in place of, and sometimes along side, each other. The apparent cognitive dissonance this required generated little objection on the part of either enthusiasts or critics, probably because purity itself was an illusory target, and therefore any efforts to verify it—whether based on indigeneity, a white face, or even pedigree—were necessarily imperfect.

Neither the short-comings of the measure nor the insubstantial nature of the goal lessened the urgency of the task. The Hereford’s secondary status relative to the Shorthorn meant that its purity of blood was perpetually under question, whether explicitly or implicitly so. What looked worse, or more “mongrel-bred,” than a herd of cattle in which gray and mottled animals stood next to white-faced red cattle, no matter how similar in size and form they might be? Absolute consistency of coloration, on the other hand, promised to offer visible proof of parentage (if not of pedigree), allowing, as Duckham described, individuals of the breed “to claim each other as one family.”<sup>148</sup>

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<sup>147</sup> Ibid, p. 688.

<sup>148</sup> Duckham, “History, Progress, and Comparative Merits,” p. 9.

*Synthetic purity*

The white face as the Hereford breed's signature represented a transitional moment in its history, from relatively uncouth regional variety towards modern improved breed, but as both evidence *for* purity, and evidence *of* change, it was necessarily equivocal. Recorded pedigrees, modeled upon those of thoroughbred horses, published at intervals by independent enthusiasts or by societies designed to collect and manage a breed's genealogy, promised instead a more reliable assurance of purity. Though they did not—indeed, could not—deliver absolute assurance, pedigrees and the herd books in which they were collected promised their subscribers a firmer semblance of purity. Their importance rested not in the actual information they collected, but in the effect they had on the practice and perception of livestock breeding.<sup>149</sup> These documents listed an animal's forebears for at least three or four generations, and because a herd book was a closed loop—all individuals in a given genealogy being verified by registration in early volumes—it gave an impression of stability to what was very much a moving target. Even though the early volumes of Coates's *General Short-horned Herd-Book* did little more than “pin down which animal was which” for Shorthorns, the breed's well-established and respected herd book accounts for much of its popularity in the nineteenth century.<sup>150</sup> Next to this guarantee, even the uniform red and white of the Hereford seemed unsatisfactory.

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<sup>149</sup> Clutton-Brock and Hall, *British Farm Livestock*, p. 77. Indeed, as Margaret Derry suggests, “That identification through public pedigree information was available for Shorthorns earlier than for other cattle breeds helped provide an important start to the breed's ultimate popularity and geographic expansion...Possibly Shorthorns became so popular...not because they were improved before other breeds...but rather because of the head start provided by the breed's public herd book.” Margaret E. Derry, *Bred for Perfection: Shorthorn Cattle, Collies, and Arabian Horses since 1800* (Baltimore and London: The Johns Hopkins University Press, 2003), p. 6.

<sup>150</sup> Derry, *Bred for Perfection*, p. 6.

But the problem was less with the measure than with the desideratum. Perhaps the greatest irony of nineteenth-century livestock breeding was that purity itself was not a natural attribute inherent in a group of animals. Rather, in the sense in which livestock breeders used it, “purity” was a construct. It meant more than a kind of affinity of type or traits; it required the firm hand of human intervention to be produced; and the means to this end—that is, inbreeding—remained controversial. Many objections were founded in concern over what breeders described as a resultant loss of constitution. “The great obstacle to the *improvement* of domestic animals,” wrote George Culley in his *Observations of Livestock*, “seems to have arisen from a common and prevailing idea amongst breeders—that no bull should be used in the same stock more than three years” for fear that the herd would become “*too near akin*, and the produce will be *tender*, *diminutive*, and liable to *disorders*.”<sup>151</sup> But others, as Culley complained, took their objections further, having “imbibed the prejudice so far as to think it *irreligious*; and if they were by chance in possession of the best breed in the island, would by no means put a male and a female together that had the same sire, or were out of the same dam.”<sup>152</sup> Such narrow-mindedness was, in his view, a detriment to improved agriculture, and by extension, to the national good.

Whether inbreeding was an asset or detriment to the national herd, and similarly whether crossbreeding was an aid or a hindrance to agricultural improvement, remained stubbornly unresolved. As the popularity of each method waxed and waned in proportion to the other, either could seem ascendent. In the early decades of the nineteenth century,

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<sup>151</sup> Culley, *Observations on Livestock* (1807), p. viii.

<sup>152</sup> *Ibid.*

Culley believed that the time was at hand when, fortunately “for the public,” breeders “whose enlarged minds were not to be bound by vulgar prejudice” realized that such objections were “without any foundation.”<sup>153</sup> Crossing breeds might have been appropriate for sage experimenters like Bakewell, but once established as pure and inbred, it was the responsibility of subsequent breeders to maintain this purity. The pendulum continued to swing between extremes of cross- and inbreeding, arriving back at the point of Culley’s views later in the century: “It is scarcely necessary,” wrote a contributor to the *Livestock Journal* in 1885, “to point out that what was practicable in the early days of an admittedly composite breed would be simply ruinous now that the race has been firmly established, and it seems evident that the adoption of crosses of the kind would quickly result in the destruction of the edifice that has been reared by a century of careful breeding.”<sup>154</sup>

While periodic infusions of fresh blood were admittedly necessary to maintain health and vigor, improved breeds themselves were held up as evidence of the benefits of inbreeding, not least because of a prevailing belief that “the tendency of nature is ever to revert.”<sup>155</sup> If that was so, the closer the relation between the animals that together composed a breed, the more likely a chance reversion or “throw-back” was to still resemble its fellows. But if the genetic profile of an animal was unknown or various—that is, composed of crosses between different types—the tendency towards reversion introduced an unacceptable degree of uncertainty. The offspring of an animal of questionable breeding—no matter how perfect in form or pleasing to look at—could at any

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<sup>153</sup> Culley, *Observations on Livestock* (1807), p. viii-ix.

<sup>154</sup> V., “Stock Breeding,” p. 376.

<sup>155</sup> Duckham, “Breeding and Management,” p. 5.

time and without warning revert to an inferior type contained in its history. Containing this uncertainty was, in effect, the rationale for pure-breeding. To breed from an animal of mixed or unknown parentage was to risk “produc[ing] nothing better than mongrels,”<sup>156</sup> according to the American stockbreeder G. T. Turner—the very thing that the extreme consanguinity to which animals were bred, by narrowing the genotype of a group of animals, was designed to forestall.

Appearance and observation alone were thus increasingly insufficient guarantees of consistency, and official genealogies were increasingly required to verify the purity of a breed.<sup>157</sup> These published pedigrees conferred enormous prestige, as well as monetary value, upon individual animals and their breeders, and over time they became an end unto themselves.<sup>158</sup> Taken too far, the pedigree could be a pernicious force in livestock breeding. In no breed was the “abuse of pedigrees” more egregious than in the case of the Shorthorn.<sup>159</sup> “What has given Shorthorns their very exceptional value?” one contributor to the *Farmer's Magazine* asked sarcastically.

Not their intrinsic value (merit?) alone, but the ability of the owners to point to a long line of pedigree...Pedigree is no doubt all very well, but a long pedigree on paper is not always a good one in fact.<sup>160</sup>

Similarly, as one commentator complained, for Shorthorn fanciers, breeding for practical ends was “beside the question.” When it came to highly-bred bulls, “their blood is

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<sup>156</sup> Quoted in “Cattle of the Various Breeds as Beef Producers,” *Farmers' Magazine* 55 (February 1879), p. 99.

<sup>157</sup> Derry, *Bred for Perfection*, Chapter 1. Ritvo, *Animal Estate*, pp. 60-63.

<sup>158</sup> “Animals were believed to be “pure” to breed type...when they carried public pedigrees... Ideas about breed, the meaning of purity within breed, and the role of pedigrees in breeding became entangled in a complicated way.” Derry, *Bred for Perfection*, p. 9.

<sup>159</sup> “Practice,” “Stock Breeding,” p. 350.

<sup>160</sup> “Various Notes,” *Farmer's Magazine* 55 (May 1879), p. 316.

priceless, and they are to get bulls and heifers for sale as blood stock, for stud purposes again; [thus] the bullock is a very remote contingency.”<sup>161</sup>

All too often, this meant sacrificing symmetry and constitution for pedigree. Deviation from the desired type and imperfection were the outcome of this lamentable habit, degeneration the unintended consequence of refinement. A writer for the *Livestock Journal* complained in 1875 that “even at this day, after so much has been done for their improvement,” the “breeder of Shorthorns... finds quite a variety of formations in his females, very few of them approximating a perfect model.” Defects “in constitution and formation,” he continued, “cannot be remedied by the use of a male possessing similar ones, however desirable his pedigree.”<sup>162</sup> Indeed, such “fashionably-bred animals” were “notoriously bad beasts.” Having been “bred so long without proper judgment and from nearly related blood, [t]hey have become ewe-necked, weasel-waisted, leggy, and consumptive.”<sup>163</sup> More moderate commentary, too, worried that Shorthorns had become little more than a fancy breed. “Shorthorn breeding in England,” wrote a contributor to the *Farmer’s Magazine*, “has fallen, for the most part, into the hands of gentlemen who have made a hobby, a ‘fancy,’ or ‘fashion’ of it; and who treat their hobby precisely on the same lines as the tulip hobby, or the antique bookbinding hobby.”<sup>164</sup> In pursuit of the right pedigree, “their object [has become] purely fanciful; certain strains of blood are

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<sup>161</sup> “Cattle as Beef Producers,” p.100.

<sup>162</sup> “An American on Breeding,” *Livestock Journal* (8 October 1875), p. 568.

<sup>163</sup> “Various Notes,” *Farmer’s Magazine* 55 (May 1879), p. 316.

<sup>164</sup> “Cattle as Beef Producers,” p.100.



pronounced ‘fashionable,’ and straightaway the ideal is fixed on producing families possessing this blood in an intensified form by breeding its individuals *in terse*.”<sup>165</sup>

Many, though, maintained the value of the breed. Shorthorns remained popular: of that, there was no doubt. Even if critics claimed that the passion for “‘fancy’ or fashionable strains of Shorthorn blood” had reduced them to “the veriest weeds, with nothing whatever to recommend them to the bullock breeder,”<sup>166</sup> they still boasted other “valuable perfections,” especially when it came to producing milk. No other breed could “stand the London treatment”—that is, the close “cow-houses and hot food” that characterized milk production for the metropolis—and still give large quantities of milk better than the Shorthorn.<sup>167</sup> And their popularity would persist, asserted the breed’s proponents. “Times will boom for most things of any national importance, ranches will rise and fall, the dairy interest fluctuate, and live stock trade generally will go and come according to supply and demand,” wrote a philosophically-minded contributor to the *Livestock Journal* in an almost bittersweet tone at the height of the agricultural depression of 1885, “but no form of national trouble will ever lower the blood of Booth or Bates in the eye of John Bull.”<sup>168</sup>

### *The end of things bovine*

Despite continued appreciation for Shorthorn cattle, critics of this breed complained with some justification that its breeders had lost sight of the fact that “the end of things bovine

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<sup>165</sup> Ibid.

<sup>166</sup> Ibid.

<sup>167</sup> “Remarks and Observations, (cont.),” p.390.

<sup>168</sup> “British Breeds of Cattle,” *Livestock Journal* 21 (22 May 1885), p. 495.

is beef.”<sup>169</sup> Hereford breeders, on the other hand, were in no danger of such a lapse. Unlike its more “cosmopolitan” rival,<sup>170</sup> their favored breed was an eminently practical one, even if a number of its supporters were “gentlemen of the first rank.”<sup>171</sup> Commentators in the late nineteenth century celebrated the breed’s humble roots, one writer for the *Irish Farmers’ Gazette* claiming that “the credit of the breed has been upheld solely through the judgment and skill of the tenant farmers, who have always been [its] principal breeders.”<sup>172</sup> These lowly origins, though, ought not to be overstated. Many of the tenant farmers who bred Herefords, though not of the landowning class, were themselves prosperous.

Even the most illustrious Hereford herds were founded upon practical principles. For instance, the Hampton Court herd was founded in the early nineteenth century by Sir Hungerford Hoskyns “for the gratification of no fancy aims.”<sup>173</sup> On the contrary, Hoskyns, had established the herd in a much more public-minded spirit: “to breed bulls that could be supplied on reasonable terms for the use of the tenants on the estate.”<sup>174</sup> By the 1880s, the herd had become the property of his grandson, John Hungerford Arkwright, who was also the inaugural president of the Hereford Herd Book Society in 1878.<sup>175</sup> This group of animals was lauded throughout the nineteenth century for the perfection of its constituent

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<sup>169</sup> “Cattle as Beef Producers,” p. 100.

<sup>170</sup> Draft letter, John H. Arkwright to the editor, *Hereford Times*, July 18881. Hereford Record Office A63/III/65/16.

<sup>171</sup> “Various Notes,” *Farmer’s Magazine* 55 (May 1879), p. 313.

<sup>172</sup> “Herefords in Westmeath,” reprinted in the *Livestock Journal* (3 September 1875), p. 2.

<sup>173</sup> Cosmo, “Among the Herefords: the Hampton Court Herefords,” *Livestock Journal* (17 April 1885), p. 373.

<sup>174</sup> *Ibid.*

<sup>175</sup> Arkwright served four terms as president, and five as vice-president of the Society between 1878 and 1898. MacDonald and Sinclair, *Hereford Cattle*, p. 144. He was also the great-nephew of Sir Richard Arkwright, of industrial revolution fame.

individuals, many of whose pedigrees went “to the very roots of Hereford genealogy.”<sup>176</sup> Seventy-three bulls had been used since the herd’s establishment, and to peruse a list of them was to see “a pretty complete epitome of Hereford history,” according to a journalist for the *Livestock Journal*.<sup>177</sup> Its star-studded pedigrees notwithstanding, since the very inception of the Hampton Court Herefords, tenants had been “at liberty to send their cows for service...by the very best bulls that the herd could produce,” originally at “nominal fees,” and then, under the even more public-minded grandson, “gratis.”<sup>178</sup>

This utilitarian spirit defined the Hereford breed, and as a consequence, the shift to pedigrees as a measure of value was uneasy. Thomas Campbell Eyton, the ornithologist and naturalist who first began the *Herd Book of Hereford Cattle* (1846), initially met with strong opposition.<sup>179</sup> Many breeders insisted that an animal’s pedigree was “on his back”—that evidence of a good frame “well covered with superior flesh...should in itself be a sufficient guarantee.”<sup>180</sup> By this reasoning—widely employed by Hereford men—the proof was in the pudding, and to record the recipe was to risk reputation. As Eyton attempted to “hunt up all proved thoroughbred cattle and register them in a permanent and authorised

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<sup>176</sup> Cosmo, “Among the Herefords: The Hampton Court Herd,” p. 373.

<sup>177</sup> *Ibid.*

<sup>178</sup> *Ibid.*

<sup>179</sup> Thomas Campbell Eyton (1809-1880) was a naturalist who specialized in ornithology. He was the author of a number of works, including *A History of the Rarer British Birds* (London: Longman, Rees, Brown, and Green, 1836); and *A Catalogue of British Birds* (London: Longman, Rees, Brown, and Green, 1836). He was a friend and contemporary of Charles Darwin, with whom he exchanged a number of letters on zoology, the anatomy of birds, and Herefordshire cattle. See in particular, Charles Darwin to T. C. Eyton, 27 [August 1856], and Darwin to Eyton, 31 August [1856], Darwin Correspondence Database, Entries 1946 and 1948. <http://www.darwinproject.ac.uk/entry-1946>; <http://www.darwinproject.ac.uk/entry-1948>. Accessed 7 May 2013.

<sup>180</sup> Duckham, “History, Progress, and Comparative Merits,” p. 12.

volume,”<sup>181</sup> he discovered that many breeders, following Bakewell’s example, preferred to “jealously [guard]” their methods “as a profound secret,” fear that published pedigrees “would show too much of the system they pursued in breeding.”<sup>182</sup>

The problem with pedigrees was not simply that they might expose selective practices that breeders preferred to keep proprietary. It was more fundamental than this. The insubstantial nature of purity itself meant that the entire edifice of the pedigree stood on shaky foundations. Even where breeders were willing to cooperate, pedigrees had to be “built up,” the life history of an animal gleaned from private records or from memory.<sup>183</sup> The process was an “arduous undertaking,” vulnerable to honest error (among other kinds) even in the best of circumstances.<sup>184</sup> Memory itself was a notoriously fallible faculty. Eyton cited dependence “upon the memory of breeders” as a source of error in the first volume of the *Herd Book of Hereford Cattle* (1846),<sup>185</sup> and twelve years later when Duckham published the third volume, it was still a problem, many animals having been included “with very short pedigrees.” However, “it [did] not follow,” Duckham cautioned, “that they [were] not purely bred.” Rather, short pedigrees resulted from the “want of

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<sup>181</sup> J. H. Arkwright, Draft letter to the editor of the *Hereford Times* (July 1888), in response to “Hereford Herd Book Society,” *Hereford Times* (27 June 1888), signed Herefordian. Herefordshire Record Office (hereafter HRO), A63/III/65/14.

<sup>182</sup> *Ibid.*, p. 12, 10. Exasperated, Eyton declared his “intention [not] to carry the Work on further unless the breeders generally come forward to assist me more than they have done up to the present time” after publishing only two volumes. T. C. Eyton, “Preface,” *The Herd Book of Hereford Cattle*, vol. 2 (London: Longman and Co., 1853). At this point, the Hereford herd book copyright passed to Thomas Duckham, who published seven volumes before handing it off to the Hereford Herd Book Society in 1878.

<sup>183</sup> J. R. Bailey to J. H. Arkwright, (n.d. [1884]), Hereford Record Office A63/IV/42/33.

<sup>184</sup> T. Duckham, *Eyton’s Herd Book of Hereford Cattle*, 3 (Hereford and London: Longman and Co., 1858), p. iii.

<sup>185</sup> Eyton, *Herd Book of Hereford Cattle*, 1, p. iii.

proper entries in private Herd Books,” and “the fact of too much being entrusted to the memory of their breeders, at whose death their knowledge...departed with them.”<sup>186</sup>

Private herd books, in which a breeder recorded the births, deaths, pairings, purchases, and sales of all his animals, could mitigate the shortcomings of memory or “pocket-book memorandums,”<sup>187</sup> if only breeders could be convinced to keep them. John H. Arkwright was known for his meticulous record keeping, “the whole system of private herd-book keeping at Hampton Court” being, in the words of a writer for the *Livestock Journal*, “the most elaborate and perfect I have ever come across.”<sup>188</sup> Arkwright kept “a careful record of the bulls used in the herd each year,” compiled comprehensive lists of cows, and made notes of the date of birth for every calf.<sup>189</sup> This material—which together supplied “authentic information of the composition of this first-class herd”—appeared in a range of documentary forms, from the slips of paper and pocket notebooks, so easily lost, to private herd books and charts drawn up in the expert hand of a clerk, and elegant private catalogues produced for circulation among acquaintances and interested parties.<sup>190</sup>

Such record-keeping was strongly encouraged. A private herd book was less “liable to loss or destruction than memory,” which could “seldom be trusted as to pedigree beyond the immediate sire and dam;” was “generally fallacious as to dates;” and “when correct, its store of knowledge is lost to posterity at death.”<sup>191</sup> But not even private documentation as the basis for entry into the breed’s herd book could be an absolutely reliable guarantee of

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<sup>186</sup> Duckham, *Eyton’s Herd Book*, 3, p. iii.

<sup>187</sup> Duckham, *Eyton’s Herd Book*, 3, p. iv.

<sup>188</sup> Cosmo, “Hampton Court Herefords,” p. 374.

<sup>189</sup> *Ibid.*

<sup>190</sup> *Ibid.* A remarkable number of these documents ended up in the Hereford Record Office.

<sup>191</sup> *The Herd Book of Hereford Cattle*, 11 (Hereford: The Hereford Herd Book Society, 1880), p. vii.

breeding. Joseph Russell Bailey, a member of parliament for Hereford, minor Welsh nobleman, and an avid breeder of Hereford cattle, served on the Herd Book Society's editing committee throughout the 1880s. Bailey astutely observed that any regulations the Herdbook Society instituted on this point were bound to be imperfect. Were such documentation required for entry to the *Herdbook*, a step the Society contemplated taking at various points in the 1880s, Bailey had no doubt that "many Private Herd Books will no doubt be concocted for the occasion." Even though in which this possibility exposed the easy fabrication of pedigrees, and by extension the illusory nature of purity, the editing committee, according to Bailey, "must wink at that," should it occur, as it would perform the desired effect "of getting them"—that is, private herd books—"started."<sup>192</sup>

No wonder, then, that the work of "get[ting] the Hereford pedigrees straight"—an effort to which Bailey had "been most anxious to do all [he] could"—was so difficult.<sup>193</sup> The only way to "get them quite straight is that all pedigree breeders should enter all their animals" into the *Herd Book*, but this, apparently, could only be accomplished by manufacturing genealogies.<sup>194</sup> Not even the fabricated underpinnings of the *Herd Book* deterred its proponents from their work. "Concocted" pedigrees, and the Hereford Herd Book Society's willingness to "wink" at them, reveals the degree to which the system of monitoring pedigrees—like the concept of purity at its core—was a hollow one. Nonetheless, the tide was against those who resisted the imposition of an official herd book, and as the century progressed, opposition waned, reflecting the changed productive and economic realities of British livestock breeding. By the 1880s, exclusion from the *Herd*

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<sup>192</sup> Joseph Russell Bailey to J. H. Arkwright, (26 April [1884]), HRO A63/IV/42/33

<sup>193</sup> Ibid.

<sup>194</sup> Ibid.

*Book of Hereford Cattle* had become tantamount to major pecuniary punishment, as Percy Powell complained upon the rejection of his bull. The animal's only fault was a lack of documentation, it being "ever so good an animal" and "ever so well bred," and the decision to reject it on the grounds of insufficient documentation was, in his view, "a very arbitrary despotic and selfish" one, as well as a loss of the £500 he might have had from the sale of it as a pedigreed animal.<sup>195</sup>

Given the apparent willingness of Bailey to bend the rules when it came to "build[ing] up the pedigrees of the breed,"<sup>196</sup> the rejection of Powell's bull seems arbitrary and despotic, indeed. But despite off-the-record recognition of the ease with which pedigrees could be fabricated, the Herd Book Society maintained the integrity of its official publication. Bailey asserted that "no pedigree can be absolutely certain except so far as it can be traced in the *Hereford Herd Book*,"<sup>197</sup> and insistence upon the letter of the law, as in the case of Powell's unregistered bull, were attempts to uphold this maxim. Yet even as recorded pedigrees and herd books sprang up among the various British breeds of cattle, both the illusion of purity and the constructed nature of breeds themselves became increasingly evident. No matter how vociferous the insistence on the value of the herd book, the undeniably ephemeral nature of the aim would always undercut any absolute claim to purity. "There is not really a single "pure" breed in existence in Great Britain of man or beast, or bird," proclaimed a regular columnist in the *Livestock Journal* in 1885. In part, this had to do with the alchemical production of type, which was always manifestly a composite of other varieties and other factors, yet more than the sum of its parts. "The

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<sup>195</sup> Percy Powell to J. H. Arkwright, 25 June [1882.] HRO, A63/IV/42/29.

<sup>196</sup> J. R. Bailey to J. H. Arkwright, (n.d. [1884]), HRO A63/IV/42/33.

<sup>197</sup> J. R. Bailey to J. H. Arkwright, (n.d. [1884]), HRO A63/IV/42/33.

thoroughbred horse is something more than an Arab, modified by selection, soil, and climate; and that remarkable fact, the Shorthorn, is something more than an immense expansion of a local variety,” he continued.

Every breed of every kind has had (as we believe) crosses within a century, and...our horses, cattle &c., are all mixtures...They are, one and all, compounds of recent date as much as is a plum-pudding [and] it would add to our powers of advancing recognised types did we admit this truth.<sup>198</sup>

As sensible as this position seemed, it remained a sticking point—economic, cultural, and even emotional value seeming to ride on the question of purity of descent from the nineteenth up through the twentieth centuries.

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<sup>198</sup> “Concealed Connections,” *Livestock Journal* (10 April 1885), p. 351.



## Chapter 4

### **New Zealand's Own**

In 1928, G. H. Holford, author of a slim pamphlet called *The Corriedale: New Zealand's Own Breed*, celebrated the Corriedale as “the most successful new breed of the past century.”<sup>1</sup> As a fixed, true-breeding cross between English longwool varieties like the Leicester, Lincoln and Romney sheep, and the merinos that were the earliest imported ovine inhabitants of the Australasian colonies, colonial stockmen in New Zealand had produced the Corriedale during the last quarter of the nineteenth century by means of just the kind of “careful and judicious selection” so often celebrated by their British counterparts.<sup>2</sup> Its frame was blocky: according to the breed standard of the Corriedale Sheep Society, the brisket was “deep and wide,” lending the sheep “a very square appearance.”<sup>3</sup> But by no means had its fleece been sacrificed for the sake of achieving “a

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<sup>1</sup> G. H. Holford, *The Corriedale: New Zealand's Own Breed* (Christchurch: Corriedale Sheep Society, [1928]), p. 3.

<sup>2</sup> John Saunders Sebright, *The Art of Improving the Breeds of Domestic Animals: In a Letter Addressed to the Right Hon. Sir Joseph Banks, K.B.* (London: J. Harding, 1809), p. 3.

<sup>3</sup> *Ibid.*, p. 11.

rectangular block of meat,”<sup>4</sup> for as much as it made “a large and well-shaped leg of mutton,”<sup>5</sup> the Corriedale was covered with copious, high quality wool characterized by “remarkable evenness” in “length, density, and quality.”<sup>6</sup> In this combination of superior meat and wool, the Corriedale, hailed as “a triumph of the sheep-breeder’s art,”<sup>7</sup> promised—at long last—that which had eluded an earlier generation of agricultural improvers: an English sheep clad in Spanish wool (Chapter 2).



Figure 1. A flock of Corriedale cross sheep, Cheviot Hills Station, Canterbury, New Zealand, circa 1893. Alexander Turnbull Library, Wellington, New Zealand.

To its supporters, the great practical utility of this combination and the fine points of the breed were manifest, but in the partisan world of stockbreeding, where loyalty to type ran deep, not everyone could be relied upon to value the new variety’s merits. Critics might “reasonably” ask, Holford admitted in a companion pamphlet—*The Corriedale*:

<sup>4</sup> G. H. Holford, *The Corriedale: New Zealand’s Contribution to the Sheep World* (Christchurch: Corriedale Sheep Society, 1924), p. 11.

<sup>5</sup> Holford, *New Zealand’s Own Breed*, p. 12.

<sup>6</sup> *Ibid.*, p. 10.

<sup>7</sup> *Ibid.*, p. 11.

*New Zealand's Contribution to the Sheep World* (1924)—whether there had in fact been the “need for the evolution of another breed.”<sup>8</sup> After all, when the Corriedale was first developed in the mid-1860s, by Holford’s estimation “there were close on forty distinct breeds of sheep in the British Isles alone.” A “large percentage” of these had already “been tried” in the colony, and several had become “firmly established:”<sup>9</sup> the *New Zealand Farmer*, the colony’s foremost agricultural and pastoral periodical, noted with pride in 1892 that there were “at least ten distinct breeds of sheep in the colony,” nine of which originated in Great Britain.<sup>10</sup> Why, then, bother with the Corriedale at all?

The most obvious answer lies in the same logic that underlay the eighteenth-century maxim that “every soil has its own stock” (Chapter 1).<sup>11</sup> Merino sheep suited some parts of the new colony—particularly the high elevations of the South Island—and the English breeds—primarily longwooled types bred for the rich pastures of Leicestershire, Lincolnshire and Kent—the moister, more verdant lowlands, but not having been bred for New Zealand’s conditions, none (Holford answered his imaginary critics) was “so suited as the Corriedale to much of the sheep lands of the Dominion.”<sup>12</sup> Pastoralists wanted a robust breed to match the rigor of New Zealand’s mostly temperate, yet still strenuous, climate. Though the colony was, on the whole, meteorologically more pleasant than the British Isles, “in point of climate,” wrote a contributor to the *New Zealand Farmer*, “New

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<sup>8</sup> Holford, *New Zealand's Contribution to the Sheep World*, p. 10.

<sup>9</sup> *Ibid.*, p. 10.

<sup>10</sup> “Mutton Cutlets,” *New Zealand Farmer and Bee and Poultry Journal: A Repository of Practical Information for Farmers, Stockbreeders, Dairyemen, Horticulturists, Beekeepers, and Poultry Fanciers* 12, no. 2 (February 1892), p. 38.

<sup>11</sup> William Pearce, *General View of the County of Berkshire* (London: W. Bulmer, 1794), p. 46. See also Chapter 1.

<sup>12</sup> Holford, *New Zealand's Contribution to the Sheep World*, p. 10. New Zealand’s status within the British Commonwealth shifted from Colony to Dominion in 1907.

Zealand' is a long word,"<sup>13</sup> and like its regional diversity, "the only regular thing about" its weather was "its variability."<sup>14</sup> Combined with the extensive character of colonial husbandry, this meant that a breed had to be a rugged one to flourish in much of New Zealand. Reflecting these imperatives, a "true Corriedale," Holford proclaimed in 1928, gave "at once...the impression of a hardy sheep," and possessed "a distinctive character" and a "bold outlook."<sup>15</sup>

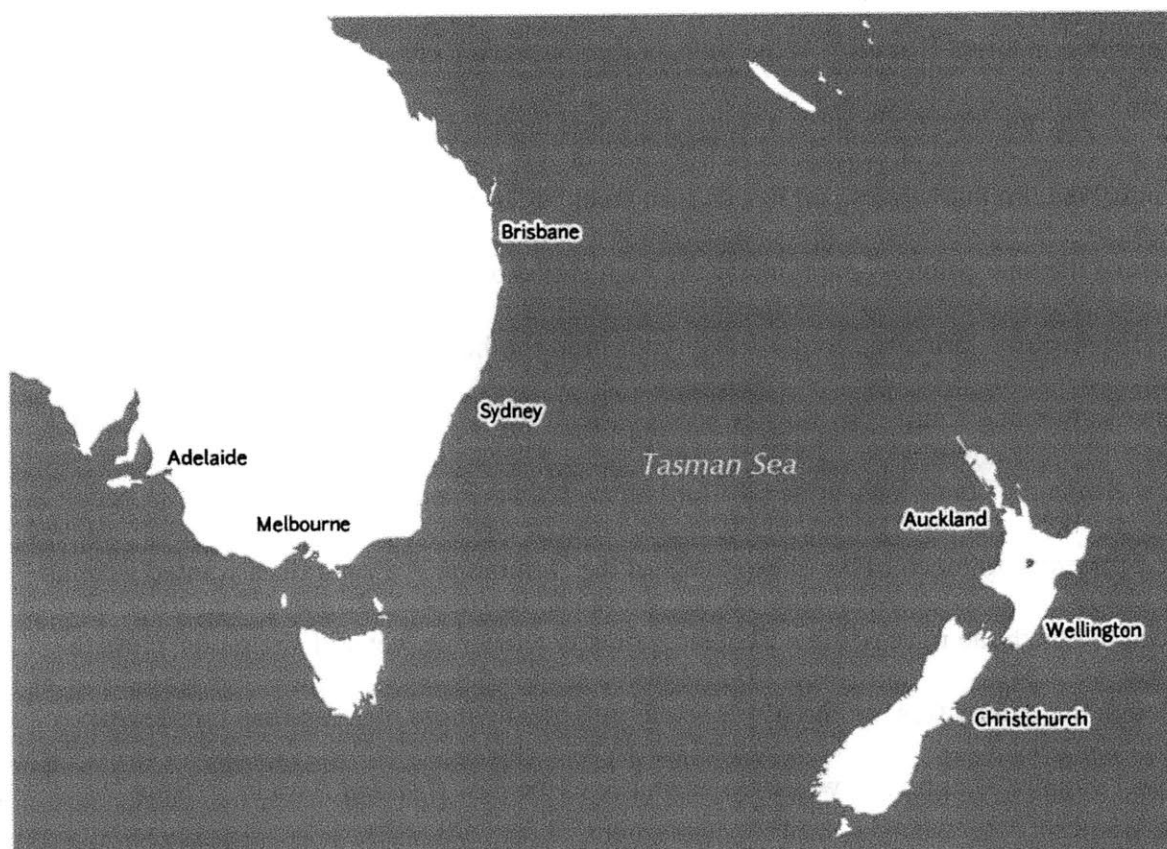


Figure 2. Map of New Zealand and Australia.<sup>16</sup>

<sup>13</sup> "The Farm: Month of October," *New Zealand Farmer* 11, no. 10 (October 1891), p. 397.

<sup>14</sup> "The Farm: March Month," *New Zealand Farmer* 12, no. 3 (March 1892), p. 113.

<sup>15</sup> Holford, *New Zealand's Own Breed*, p. 11.

<sup>16</sup> Map tiles Stamen Design and Jeff Warren (CC-BY). Data by OpenStreetMap (CC-BY-SA)

The climatic unsuitability of merinos and the British classes of sheep was matched by their uncomfortable fit with the changing conditions of colonial production. Until the 1880s, these conditions were determined by the imperial wool trade alone, for which merinos, with their quantities of fine wool, were a lucrative choice of breed. With the development of refrigerating technology, and the extension of steam shipping to New Zealand shortly thereafter, producing sheep for the growing trade in frozen meat with Great Britain was fast becoming a productive imperative.<sup>17</sup> The need to balance these two products—meat and wool—in a breed tailor-made for local climate, topography, and environment motivated efforts to create a pure-breeding type out of the half-bred animals favored at the time as store stock. Ultimately this produced a purebred type that embodied the tension of the imperial system. With two hooves planted firmly in the antipodes, the other two stretching towards the metropole, the Corriedale straddled the competing demands of colonial pastoralism: the need to adapt stock to the conditions and realities of new lands and new climates, and the imperative to suit consumer tastes at home, which in the late nineteenth century, meant producing British meat from British breeds.

### *The Sheepman's Paradise*

Sheep were among the defining forces of colonialism in Australia and New Zealand. They were, as Sarah Franklin writes, the colonial vanguard of European settlement in the

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<sup>17</sup> Robert L. Peden explores the impact of these imperatives on the grassland economy of the South Island in "Pastoralism and the Transformation of the Open Grasslands," in *Seeds of Empire: The Environmental Transformation of New Zealand*, edited by Tom Brooking and Eric Pawson, (London and New York: I.B. Tauris, 2011), pp. 73-93.

antipodes, their physical presence helping settlers lay claim to land wrested from Aborigines and the Maori, respectively.<sup>18</sup> Wherever domesticated animals accompanied European colonists, they caused ecological and social disturbance,<sup>19</sup> but in this corner of the Empire, whose geological history diverged from the rest of the world's before the evolution of mammals, their introduction was particularly disruptive, amounting to what Elinor Melville characterized as an "ungulate irruption."<sup>20</sup> Plants and other animal species that had co-evolved in the absence of mammalian types in both Australia and New Zealand were vulnerable to the grazing habits of ovines, delicate soils to the compaction of their hooves. In the long term, nowhere was this more evident than in Australia, where the combined effects of millions of such introduced creatures disrupted already fragile and irregular meteorological patterns.

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<sup>18</sup> Sarah Franklin, *Dolly Mixtures: The Remaking of Genealogy* (Durham and London: Duke University Press, 2007), pp. 118-157. Franklin describes the colonization of New South Wales as "a settlement by sheep," and the sheep themselves as "essential vectors" in Australian colonization. Franklin, *Dolly Mixtures*, p. 120, 122. The occupation of Maori land by European people and sheep was more complicated. The North Island of New Zealand was much more heavily settled than the South, and therefore the alienation of Maori tenure by settlers and the British crown was more complicated, more accrimonious, and more violent than in the South Island, where climate and environment were less suited to the polynesian style of agriculture practiced by Maori people. Much of the South Island transferred to British control by 1860 in a series of transactions the British understood as purchases; it was there that extensive ovine pastoralism was first established. See Atholl Anderson, "A Fragile Plenty: Pre-European Maori and the New Zealand Environment," in *Environmental Histories of New Zealand*, edited by Eric Pawson and Tom Brooking, (Oxford and New York: Oxford University Press, 2002), pp. 19-34; Evelyn Stokes, "Contesting Resources: Maori, Pakeha, and a Tenurial Revolution," in *Environmental Histories of New Zealand*, edited by Eric Pawson and Tom Brooking, (Oxford and New York: Oxford University Press, 2002), pp. 35-51.

<sup>19</sup> See, in particular, William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New Zealand* (New York: Hill and Wang, 1983); Virginia DeJohn Anderson, *Creatures of Empire: How Domestic Animals Transformed Early America* (Oxford: Oxford University Press, 2004).

<sup>20</sup> Elinor G. K. Melville, *A Plague of Sheep: Environmental Consequences of the Conquest of Mexico* (Cambridge: Cambridge University Press, 1994), especially pp. 6-9. For the geologic history of Australasia, see Tim F. Flannery, *The Future Eaters: An Ecological History of the Australasian Lands and People* (Chatswood, N.S.W.: Reed, 1994). Flannery calls New Zealand "a completely different experiment in evolution to the rest of the world" that shows "what the world might have looked like if mammals as well as dinosaurs had become extinct 65 million years ago, leaving the birds to inherit the globe." Flannery, *Future Eaters*, p. 55.

In the short run, however, sheep and the wool they grew were lucrative resources for the young colonies.<sup>21</sup> Colonial producers benefited from the ready market in Great Britain to which they had access on favorable terms. “The ties, financial as well as domestic, which bind the colonies to this country,” wrote the managers of the London staplers’ firm of Windler, Bowes and Company, were assumed to work symbiotically: they “naturally” drew colonial “produce to her ports, and London has become the depôt for the distribution of the wool grown in Australasia and the Cape of Good Hope.”<sup>22</sup> In the early decades of antipodean colonialism, while the global market for wool was strong, times were good for colonial sheep husbandry, and pastoralists on both sides of the Tasman sea viewed the “natural increase” of their flocks favorably. Australia, especially, quickly became established as Great Britain’s emporium for fine wool. From a modest preliminary export to Great Britain of only 167 pounds of wool in 1810, by 1879, the yearly tally had grown to nearly 300 million pounds.<sup>23</sup> According to the authors of a handbook on “Australian Sheep Husbandry,” the success of this colonial export had elevated Australia from “a comparatively unknown place” to “the greatest wool-supplier of the world” within the span of only a few decades.<sup>24</sup>

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<sup>21</sup> Australia’s first colony, New South Wales, was established in 1788. The Treaty of Waitangi, which marks the beginning of the colonial period in New Zealand, dates to 1840. For an overview of the early phase of colonization in Australasia, see Belich, *Replenishing the Earth*, pp. 261-267. McAloon notes that by the 1840s, “the suitability of wool as the principal export staple rapidly became clear.” McAloon, “Resource Frontiers,” p. 63.

<sup>22</sup> Quoted in “Wool,” *New Zealand Country Journal*, 2, no. 3 (May 1878), p. 187.

<sup>23</sup> From its paltry initial offering, the combined export from the Australian colonies’ annual clip rose to nearly 100,000 in 1820, to more than three-quarters of a million in 1840, almost six million in 1850, to two and a quarter million twenty-five years later. Albert Stapleton Armstrong and George Ord Campbell, *Australian Sheep Husbandry: A Handbook of the Breeding and Treatment of Sheep, and Station Management* (Melbourne, Sydney, and Adelaide: George Robertson, 1882), p. 61.

<sup>24</sup> *Ibid.*, p. 1. The dominance of wool among colonial Australia’s exports was thanks in part to the development of machinery capable of handling the fine wool of merino sheep in the 1820, and the relaxation of protective British tariffs in the 1830s. McAloon, “Resource Frontiers,” p. 64.

This advance in the colonies' fortunes was thanks to their combined flocks, comprised almost exclusively of merino sheep. The small handfuls of merino sheep brought from the Cape Colony by Captain John McArthur in 1796 were the seed stock for these antipodean multitudes, to which were periodically added imported bloodstock from Saxony, Spain, and the United States.<sup>25</sup> So wonderfully suited to Australia's sere climate and expansive terrain did these sheep seem, and the land to them, (one observer called it "the finest wool-growing climate known" in 1870)<sup>26</sup> that the original lack of ovine species on the island continent came as a "curious fact" to later commentators,<sup>27</sup> and for decades the colonies' vast flocks of merinos grazed equally vast sweeps of land, their hooves reshaping native ecosystems as their golden fleeces produced both metropolitan and colonial prosperity.<sup>28</sup>

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<sup>25</sup> John Rylie Graham, *A Treatise on the Australian Merino* (Melbourne: Clarson, Massina, and Co., 1870), p. 13, 20. Merinos from the state of Vermont, in particular, were popular enough in Australia to be considered a craze. See H. B. Austin, *The Merino: Past, Present and Probable* (Sydney: Grahame Book Co., 1947), esp. pp. 99-118; "Vermont Merinos in Australia," *New Zealand Farmer* 11, no. 12 (December 1891), p. 492.

<sup>26</sup> Graham, *Australian Merino*, p. 9.

<sup>27</sup> "The Australian Meat-Trade," *Chambers's Journal of Popular Literature, Science, and Arts* (21 April 1894), p. 246.

<sup>28</sup> Libby Robin, *How a Continent Created a Nation* (Sydney: University of New South Wales Press, 2007); Melville, *Plague of Sheep*. Importantly, the pastoral transformation of Australasia was not a foregone conclusion, but rather the outcome of figurative and material work done by colonial settlers. See Tom Brooking and Eric Pawson, "The Contours of Transformation," in *Seeds of Empire: The Environmental Transformation of New Zealand*, edited by Tom Brooking and Eric Pawson (London and New York: I.B. Tauris, 2011), pp. 14-21.



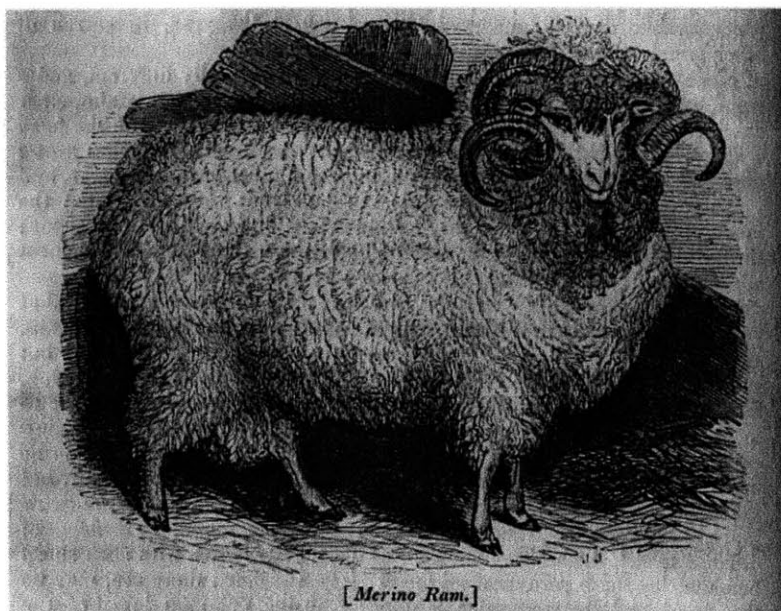


Figure 3. Merino ram. From William Youatt, *Sheep: Their Breeds, Management and Diseases, To which is added the Mountain Shepherd's Manual* (1837).

New Zealand's suitability for *O. aires* was no less a "curious fact" than Australia's, only the types that thrived in its more varied regional climates—which were on the whole colder, wetter, and more temperate than in Australia—were, likewise, more various. As an extremophile, the merino preferred conditions that few other breeds could withstand—great heat or severe cold—but flourished in little in between. It therefore inhabited only the cold, high altitudes of New Zealand's craggy Southern Alps. The lowlands and river valleys of much of New Zealand were too wet for the erstwhile Spanish sheep, who suffered foot rot in such damp conditions, so British longwools like the Leicester, Lincoln, and Romney Marsh breeds were adopted to graze the islands' moister regions. The Southdown breed, for example, reflecting "the tinge of its origins" even half way around the world (Chapter 1), became popular on the colony's limestone downlands.<sup>29</sup> The clip

<sup>29</sup> William Brown, *British Sheep Farming* (Edinburgh: Adam and Charles Black, 1870), p. 29.

from these flocks did not return such high prices as those of merino flocks, but to some extent quantity could make up for a relative lack of quality, and during the heyday of the wool trade they made otherwise unprofitable lands lucrative. Later, when the shipment of frozen meat became possible, these breeds became valuable in their own right.<sup>30</sup>

Although Australia had a near monopoly on the production of merino wool, New Zealand's reputation as a "Sheepman's Paradise"<sup>31</sup> exceeded that of its nearest neighbor. Colonists boasted of "our magnificent climate and grand pastures,"<sup>32</sup> although the pastures, if not the climate, were a construct, as recent scholarship demonstrates, forced by fire, plow, and an "empire of grass" out of New Zealand's native ecology.<sup>33</sup> Nevertheless, in the 1880s, so amenable to sheep did the colony's climate and environment seem that individual animals who escaped the clutches of husbandry and went feral seemed to improve, rather than to degenerate, as feral domesticates were generally presumed to do in new world conditions. A flock of seven "Dorsetshire white-faced ewes and rams," for example, that had "suddenly disappeared" from the Kauweranga Valley east of the Firth of Thames was discovered seven years later, having increased in both size and number. Fifteen sheep of "enormous proportions," each equal in size to "two or three ordinary

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Peter Holland, Kevin O'Connor, and Alexander Wearing, "Remaking the Grasslands of the Open Country," in *Environmental Histories of New Zealand*, edited by Eric Pawson and Tom Brooking, (Oxford and New York: Oxford University Press, 2002), p. 77.

<sup>30</sup> Holland et al, "Remaking the Grasslands," p. 77.

<sup>31</sup> Holford, *New Zealand's Contribution to the Sheep World*, p. 10.

<sup>32</sup> "District Reports: Wellington Province, Wanganui," *New Zealand Farmer* 12, no. 11 (November 1892), p.457.

<sup>33</sup> Because of its isolated geological history, New Zealand was particularly vulnerable to the use of fire. Pawson and Brooking, "Introduction," p. 3; Brooking and Pawson, "Contours of Transformation," pp. 13-33. Reseeding English grasses in place of native species and native tussock was a primary mode of "improving" New Zealand's pastureland. The transformation of New Zealand's wetlands, temperate rain forest, tussock, and woody vegetation—"known to European settlers as 'bush'"—was limited until the 1880s. Eric Pawson and Tom Brooking, "Introduction," in *Seeds of Empire: The Environmental Transformation of New Zealand*, edited by Tom Brooking and Eric Pawson (London and New York: I.B. Tauris, 2011), p. 3.

sheep,” and covered in an “enormous coat of wool,” were sighted “quite accidentally” by prospector named John Liddel, and the flock’s proprietor, happy to be reunited with his wayward sheep, reported to the *New Zealand Country Journal* that he believed the original seven had multiplied to “some sixty or 100.” The size of the stray sheep and their multitudinous increase offered proof positive of “the value of the New Zealand climate.”<sup>34</sup>

Given the apparent suitability of this part of the globe for sheep husbandry, the distance between the Australasian colonies and the markets in Great Britain and Europe, and the relatively tiny size of colonial human populations, emphasizing wool production in Australia and New Zealand initially made perfect sense. Not only was wool renewable, it was lightweight and never went bad; consequently it was easy to store and ship. Moreover, its production was labor-intensive only at specific times of year, namely at lambing season and during shearing, and so was well-suited to the low population density of the Australasian colonies, which was as defining a characteristic of the antipodes in the nineteenth century as were their massive flocks. In comparison to Great Britain, according to *Chambers’s Journal of Popular Literature, Science and Art*, in 1883, “Australia, New Zealand, and Tasmania are exactly three times as well supplied as we are with wool and mutton.”<sup>35</sup>

Indeed, in the ratio of sheep to people—as in geographical location—Australasia was “almost the antipodes of the British Isles.”<sup>36</sup> At the turn of the twentieth century, Great Britain was home to almost 41.5 million people and 31.5 million sheep, an apparently healthy ovine population, but one that had in fact declined seven and a half percent since

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<sup>34</sup> “Discovery of Lost Sheep,” *New Zealand Country Journal*, 4, no. 4 (July 1880), p. 226.

<sup>35</sup> “Frozen Food,” *Chambers’s Journal of Popular Literature, Science and Art* (14 July 1883), p. 437.

<sup>36</sup> Armstrong and Campbell, *Australian Sheep Husbandry*, p. 8.

the 1860s.<sup>37</sup> Thanks to its empire, as a writer for the *New Zealand Farmer* boasted, Britain could claim nearly two-fifths of the world's population of sheep,<sup>38</sup> and as it was also home, at that time, to more than 360 million human subjects, if one was inclined to exclude the populous Indian subcontinent from the imperial family (as this writer was), then the ratio of sheep to people within the Empire's scattered holdings around the globe stood at an impressive three sheep for every one person.<sup>39</sup> The ratio of "woolly people"<sup>40</sup> to the regular kind was even more remarkable in the Australasian colonies, where it had exceeded more than twenty-five sheep per person since the 1870s.<sup>41</sup> In New Zealand alone at the outset of the 1880s, almost thirteen million sheep grazed the South and North Islands combined, a staggering number in comparison to the fewer than half a million human inhabitants.<sup>42</sup>

Though other extractive resources contributed to the balance sheet of the antipodean colonies (especially timber, in the case of New Zealand, and increasingly, mineral wealth in both places), colonial economies in this part of the Empire were heavily reliant on the wool grown from these ovine multitudes.<sup>43</sup> As such, they were vulnerable to

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<sup>37</sup> "The Flocks of the Empire," *New Zealand Farmer* 21, no. 2 (February 1901), p. 46.

<sup>38</sup> *Ibid.*

<sup>39</sup> *Ibid.*; *Statistical Abstract for the British Empire in Each Year from 1889 to 1903* (London: His Majesty's Stationery Office, Darling & Son, 1905), p. 2.

<sup>40</sup> J. R., "Transportation of Live Stock, Part II: Public Health and Public Morals," *Livestock Journal and Fancier's Gazette*, 6 August 1875, p. 353.

<sup>41</sup> The population of human colonists is given by *The Statistical Abstract for the Several Colonial and Other Possessions of the United Kingdom in Each Year from 1876 to 1890*, 28 (London: Her Majesty's Stationery Office, 1891), p. 5. The numbers of sheep in the Australian colonies and New Zealand are compiled from Ross Grant, "Australian Meat Industry," in *The Frozen and Chilled Meat Trade: A Practical Treatise by Specialists in the Meat Trade* vol. 1 (London: Gresham, 1929), p. 33, 35; and B. L. Evans, *Agricultural and Pastoral Statistics of New Zealand, 1861-1954* (Wellington: R. E. Owen, Government Printer, 1956), p. 31, 7.

<sup>42</sup> In 1881, the population of settlers, or *pakeha*, stood at approximately 440,000. The Maori population was roughly 45,000 in the same year; it "reached its nadir of 42,000" in 1892. Brooking and Pawson, "Contours of Transformation," p. 13. See also A. H. McLintock, *An Encyclopedia of New Zealand* 3 vols. (Wellington: R. E. Owen, Government Printer, 1966).

<sup>43</sup> For New Zealand, with the exception of the decade between 1865 and 1875, wool, meat, and grain "provided the stimulus for the New Zealand economy in the colonial period." Peden, "Pastoralism," p. 73.

fluctuations on the international market value. While prices were good, the flocks of New Zealand and Australia swelled. But with prices for wool in flux over the course of the nineteenth century, “that very increase...[become] a source of embarrassment” to pastoralists and the colony alike.<sup>44</sup> Particularly in the 1860s when the value of a fleece dropped precipitously, and with so much capital tied up in the bodies of their stock, sheep farmers saw their profits literally consumed in feeding them.

The region’s impressive ratio of sheep to people now began to feel like a burden to colonial sheepmen. Once an animal was past its wool-bearing and reproductive prime, there was but a very limited local outlet for its terminal products. In the earliest period of colonization, flocks had fed local markets in both the Australian colonies and New Zealand. But the booming market for wool for export had produced a supply of meat all out of proportion with local demand.<sup>45</sup> Especially in New Zealand, which lacked any sizable conurbations, local populations could only consume so much mutton. During early discussion of the possibilities for engagement in the new refrigerated meat trade, Matthew Holmes, a prominent colonist, and member of parliament,<sup>46</sup> calculated (very generously, as it turned out) that two million sheep “would be more than enough for local consumption” on an annual basis.<sup>47</sup> With its 490,000-odd people to feed in the whole colony in 1881, this number represented a whopping 408 pounds of sheep meat per capita, per year for colonial

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<sup>44</sup> David Jones, “New Zealand Trade,” in *The Frozen and Chilled Meat Trade*, edited by Grant et al., vol. 1, p. 130.

<sup>45</sup> Belich, *Replenishing the Earth*, pp. 276-77. The inevitable collapse of “boom” markets in settler colonies, he argues, served to reintegrate colonial societies with the parent economy by creating colonial reliance on (usually a sole) export resource(s), and thereby reconnect it to its society and culture as well—a process he calls “recolonization.” Belich, p. 179.

<sup>46</sup> *The Cyclopaedia of New Zealand, Wellington Provincial District* (Wellington, N.Z.: The Cyclopaedia Company, Limited, 1897), p. 250-251.

<sup>47</sup> “Export of Frozen Meat,” *Timaru Herald* (24 March 1881), p. 8.

consumption—a mighty sum indeed.<sup>48</sup> By comparison, people in Great Britain, who had one of the highest rates of meat consumption in the world, ate approximately 110 pounds of all classes of butcher’s meat (beef and pork included) per capita, per year.<sup>49</sup>

The population of the colony, in fact, could absorb nowhere near this volume, which stood even higher before the advent of the frozen export trade. After their wool was harvested, the waste of sheep was therefore significant. Writing in 1918, William Soltau Davidson, the former manager of the New Zealand and Australia Land Company, an Edinburgh-based firm influential in the early development of the pastoral industry in New Zealand, recalled that the surplus stock on the Company’s estates were so numerous that they “erected yards at the edges of cliffs, into which some thousands of these old sheep were driven, so that they might be knocked on the head and thrown over the precipice as a waste product.”<sup>50</sup> Extreme measures like this may have been out of the ordinary, but very little could be done with sheep past their wool-bearing and breeding prime.

Relief measures for the problem of surplus sheep were as unsatisfactory in Australia as they were in New Zealand. The carcasses of fine-wooled Australian merinos, whose fleece, “when woven by English looms into wondrous fabrics...may help to dress a Duchess,” as a colonial writer for *All the Year Round* speculated, were “doomed to go to

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<sup>48</sup> The conversion of numbers of sheep to pounds of meat is based on Holmes’s calculations, which estimated twenty sheep per ton, or 100,000 tons of meat for two million sheep. “Frozen Meat Export Company,” *North Otago Times* (28 February 1881), p. 2.

<sup>49</sup> Richard Perren, *The Meat Trade in Britain, 1840-1914* (London and Boston: Routledge and Kegan Paul, 1978), p. 3.

<sup>50</sup> William Soltau Davidson, *The Establishment of the Frozen-Meat Trade, of the Dairying System, and the Corriedale Breed of Sheep in New Zealand* (Edinburgh: New Zealand and Australian Land Company, 1918), p. 10. Similar measures were reported resorted to in Argentina. Sydney D. Waters, *From Clipper Ship to Motor Liner: The Story of the New Zealand Shipping Company 1873-1939* (London: The New Zealand Shipping Company, 1939), p. 53.

pot.”<sup>51</sup> The hindquarters of these animals were sold locally (Australia benefitted from the markets provided by several large cities, namely Melbourne and Sydney);<sup>52</sup> the rest of the carcass pressed into boilers and cooked down to its fat. Tallow thus extracted found local and export markets for use as candles, soap, and especially as an industrial lubricant, and the remaining matter was used as manure. This process made effective use of all parts of the animal, but “boiling down” excess sheep offered only slim profits.<sup>53</sup> Mutton could also be tinned and salted, but, as *All the Year Round*’s Australian observer admitted, “meat sold in tins” was “not popular,” as “folk like to see what they are eating.”<sup>54</sup> This was especially so in Great Britain, where consumers not only liked to regard their viands, they also “preferred the real thing”<sup>55</sup> over what was “rather stringy stuff, with all the virtue boiled out.”<sup>56</sup> Consequently, the market for preserved meat remained “necessarily limited,” mostly confined to provisioning the shipping industry, civilian and naval.<sup>57</sup> Such schemes to preserve meat or make use of carcasses for purposes other than alimentation provided a “stop-gap” for colonial pastoralists in both Australia and New Zealand, alleviating to a

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<sup>51</sup> “Australian Mutton,” *All the Year Round* (12 September 1868), p. 319.

<sup>52</sup> Some in New Zealand, in fact, looked forward to the day when Australia’s “large city populations capable of consuming enormous quantities of such commodities as New Zealand is particularly fitted to produce” would become “the best customers our cultivators of the soil will have.” “New Zealand and Intercolonial Federation,” *New Zealand Farmer*, 11, no. 4 (April 1891), p. 145.

<sup>53</sup> E. J. T. Collins, “Rural and Agricultural Change,” in *The Agrarian History of England and Wales*, edited by E. J. T. Collins, vol. 7, Part I, (Cambridge: Cambridge University Press, 2000), p. 115; Waters, *Clipper Ship*, p. 52; Leonard W. Lillingston, “Frozen Food,” *Good Words* (January 1898), p. 238.

<sup>54</sup> “Australian Mutton,” (1868) p. 319-20.

<sup>55</sup> E. J. T. Collins, “Food Supplies and Food Policy,” in *The Agrarian History of England and Wales*, edited by E. J. T. Collins, vol. 7, part I (Cambridge: Cambridge University Press, 2000), p. 37.

<sup>56</sup> “Scientific Notes,” *The Graphic* (3 December 1881). Reprinted in *Haslam’s Patent Dry Air Refrigerators*, p. 10. Derbyshire Records Office, D1333 Z/Z 5.

<sup>57</sup> “The Australian Meat-Trade,” *Chambers’s Journal* 21 April 1894), p. 246. Perren, *Meat Trade*, p. 70-74.

small extent the “want of an outlet” for colonial flocks, but were, in Davidson’s words, an “unprofitable relief.”<sup>58</sup>

### *A Meat Famine in the Metropole*

While the antipodes appeared to be “over-run with cattle and sheep,”<sup>59</sup> without a local outlet in sight, Great Britain faced an alarming paucity of fresh meat. By the late 1860s, experts and the public alike feared that Britain’s “vast and ever-increasing population,”<sup>60</sup> spurred by a second wave of industrial development, would outstrip productive capacity. Although the livestock industry was in fact doing relatively well compared to the rest of the agricultural sector, domestic supply had begun to fall short of demand.<sup>61</sup> The nation’s population was growing, incomes were rising, and consumers were increasingly willing and able to spend money on meat.<sup>62</sup> At the same time, the repeal of the Corn Laws in 1846, signaling the end of agricultural protectionism and the introduction of free trade, drove up the price of meat.<sup>63</sup>

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<sup>58</sup> Davidson, *Establishment of the Frozen-Meat Trade*, p. 33; Waters, *Clipper Ship*, p. 52.

<sup>59</sup> R. Ramsay, “The Rise of the World’s Refrigerated Meat Traffic, and its Effect on the Resources of the Various Countries of Meat Supply,” *Proceedings of the Fourth International Congress of Refrigeration, held under the auspices of the International Institute of Refrigeration, 16-21 June, 1924* (London: International Refrigerating Congress Movement, British Cold and Storage Ice Association, 1924), vol. 1., p. 1721.

<sup>60</sup> “Sir Alfred S. Haslam, K.T., J.P.: A Sketch of his Career,” in *The Queen’s State Visit to Derby May 21st, 1891* (Derby: W. Hobson, 1891), p. 140.

<sup>61</sup> Perren, *Meat Trade in Britain*, p. 3. Domestic net production was growing at a modest rate of 1.5 per cent per annum over the second half of the nineteenth century. Collins, “Rural and Agricultural Change,” p. 116.

<sup>62</sup> David M. Higgins, “‘Mutton Dressed as Lamb?’ The Misrepresentation of Australian and New Zealand Meat in the British Market, 1890-1914,” *Australasian Economic History Review* 44, no. 2 (July 2004), p. 175-6.

<sup>63</sup> Collins, “Rural and Agricultural Change,” p. 110.



The confluence of stagnating production and growing demand was described, with restraint, by the *Times* as “a matter of serious national concern.”<sup>64</sup> A more sensational account declared the nation’s meat deficit to be “something alarming” in 1868, “being, for Great Britain, over 3,500,000,000 pounds annually,” or 156,250 tons short of “the quantity deemed necessary by physiologists.”<sup>65</sup> That such anxiety over a pending “meat famine” coincided with an actual rise in average meat consumption in Britain (from 90 lbs per capita in the decade 1861-70, to 110 lbs per capita the following decade) gave greater credence to such fears.<sup>66</sup> As the pace of home production slowed relative to population growth and demand, the difference was made up by foreign meat, imported live or as chilled dead meat from Europe and America (Chapter 5).<sup>67</sup> This meant that while one out of every twelve people was fed by foreign meat in 1867, by 1887 one in every four relied on imports to supply their tables with joints of beef and mutton.<sup>68</sup>

But shifting towards reliance on foreign meat was hardly less disquieting than the threat of under-supply. In the first place, it carried material risk: reliance on potentially hostile trade partners, and in the case of live imports from outside the island kingdom, the danger of exposing domestic herds to contagious diseases like foot-and-mouth disease.<sup>69</sup> But worry over undersupply of meat in Britain in the 1860s and 1870s went beyond the metabolic. Consuming flesh was one of the primary ways in which Britons distinguished

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<sup>64</sup> Quoted in “The Diminution of Live Stock,” *New Zealand Country Journal* 2, no. 3 (May 1878), p. 170.

<sup>65</sup> “Our Meat-Supply,” *Chambers’s Journal* 257 (28 November 1868), p. 759.

<sup>66</sup> “Our Meat-Supply,” *Chambers’s Journal* (26 August 1899), p. 615–616; Perren, *Meat Trade in Britain*, p. 3. Prior to World War I, meat consumption in Britain peaked in the first five years of the twentieth century at 132 lbs. per capita.

<sup>67</sup> Collins, “Food Supplies and Food Policy,” p. 35; Higgins, “‘Mutton Dressed as Lamb?’” p. 166.

<sup>68</sup> P. G. Craigie, “Twenty Years’ Change in Our Foreign Meat Supplies.” *Journal of the Royal Agricultural Society of England* 23, 2nd (1887), p. 472.

<sup>69</sup> “American Meat,” *Saturday Review of Politics, Literature, Science and Art* 52, no. 1366 (1881), p. 811.

themselves from neighbors, rivals, and competitors,<sup>70</sup> and while Britons mostly proclaimed themselves a nation of beef eaters, mutton held second place in its heart. In point of fact, despite the “grossly carnivorous” John Bull’s “almost exclusively beef-eating” reputation, “the leg of mutton share[d] almost equally with the sirloin the honours of forming the piece de resistance of the dinner-table of the average Britisher,” according to a contributor to the *New Zealand Farmer*.<sup>71</sup> Even if Britons consumed two times as much beef as mutton, as this fellow estimated they did, the national fondness for sheep meat was a more distinguishing characteristic even than beef-eating. Other nations, after all, also consumed beef in quantity (although perhaps not as much quantity as the British), but “no other race of people...makes the flesh of sheep so important a part of their daily food.”<sup>72</sup>

Such a strong association between nationality and meat-eating produced a continuous demand that the growing gap between productive capacities and consumptive demands be supplied by good British mutton and beef—a demand very much in tension with Britain’s growing appetite for meat. The political tenor of such commentary meant that, from the British perspective, not all foreign sources were created equal. Even if they hadn’t grazed the rich green pastures of Britain, as products of cultural, political, and economic offshoots of Great Britain, colonial imports were bound to be better than more alien sources. Colonial producers recognized the metabolic and cultural importance of

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<sup>70</sup> “Our Meat-Supply,” *Chambers’s Journal* (1868), p. 759; Harriet Ritvo, ‘Mad cow mysteries,’ in *Noble cows and hybrid zebras: essays on animals and history*, Charlottesville and London: University of Virginia Press, 2010, p. 99-100; Harriet Ritvo, *The Platypus and the mermaid and other figments of the classifying imagination*, Cambridge, MA: Harvard University Press, 1997, p. 194-197. Chris Otter, “Civilizing Slaughter: The Development of the British Public Abattoir, 1850-1910,” in *Meat, Modernity, and the Rise of the Slaughterhouse*, edited by Paula Young Lee (Durham, NH: University of New Hampshire Press, 2008), p. 89; Ben Rogers, *Beef and Liberty* (London: Chatto & Windus, 2003).

<sup>71</sup> “Flocks of the Empire,” p. 46.

<sup>72</sup> *Ibid.*

meat to their metropolitan brethren, and the opportunity it presented, if only they could get their surplus meat, “not dismembered, and in tin cans—but whole, and in prime condition,”<sup>73</sup> to what promised to be “the greatest frozen meat market in the world.”<sup>74</sup> As *All the Year Round*’s Australian commentator put it, “We had far rather [our flocks] should feed our brothers in the grand old fatherland” than be boiled down to tallow, or ground up into manure. “You want mutton and beef. We want to send it to you. How can this be done?”<sup>75</sup>

### *To bridge the hemispheres*

The simple answer was by means of new refrigeration technology, capable of arresting the processes of decay and holding meat “in what one may call a state of suspended animation” for the duration of a trans-hemispheric voyage.<sup>76</sup> Various means to achieve this end were the subject of experimentation throughout the 1860s and 1870s, from dry air compression engines to ammonia absorption. Early efforts to engineer artificial cold, and to apply it to the preservation and shipment of meat—a text-book example of a perishable article—had mixed results.<sup>77</sup> The earliest shipments of chilled beef from the United States, which reached London’s Smithfield market in 1874, simply used coal-powered fans aimed

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<sup>73</sup> “Scientific Notes,” in *Haslam’s Patent Dry Air Refrigerator*, p. 10.

<sup>74</sup> Gordon H. Campbell, quoted in *Fourth International Congress of Refrigeration*, p. 32.

<sup>75</sup> William Soltau Davidson, *William Soltau Davidson, 1846-1924. A sketch of his life covering a period of fifty-two years, 1864-1916, in the employment of the New Zealand and Australian Land Company Limited* (Edinburgh: Oliver and Boyd, 1930), p. 10; “Australian Mutton,” *All the Year Round* 20, no. 490 (12 September 1868), p. 319.

<sup>76</sup> “Australian Meat-Trade,” (1894), p. 246.

<sup>77</sup> Starting in the late 1860s, Thomas Mort and James Harrison in Australia began experimenting with freezing meat, but were unable to successfully ship it in its frozen state. Waters, *Clipper Ship*, p. 52.

at blocks of ice, or salt and ice in the process of liquefaction—“one of the most ancient methods employed for artificial cooling”<sup>78</sup>—to cool the ships’ holds and their cargos.<sup>79</sup>

This system, however lucrative for the Americans, was untenable for a trade between the antipodes and Britain, as it not only relied on more space between each suspended side of meat than could be profitably afforded over the much longer journey from Australasia, but also left shipments too vulnerable to the heat of the tropics.

When refrigerating engines capable of reducing the temperature in a ship’s hold low enough to maintain the carcasses of sheep frozen solid were developed,<sup>80</sup> however, “a new vista opened before the colonies.”<sup>81</sup> Commercial refrigeration in the form of cold storehouses and refrigerated railcars was coming into use by the 1860s, but refrigerated shipping only began in 1877, when the first “completely successful” shipment of frozen meat from Buenos Aires arrived in France.<sup>82</sup> Two shipments from Australia confirmed the viability of the new trade shortly thereafter: the *SS Strathleven*, which left Sydney in December 1879, reaching London in February 1880; and the *SS Protos* from Melbourne in the same year. These early shipments from Australia were hailed as “successful experiment[s]” in New Zealand, demonstrating the viability of the new trade and offering

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<sup>78</sup> A. J. Wallis-Taylor, *Refrigeration, Cold Storage and Ice-Making: A Practical Treatise on the Art and Science of Refrigeration*, 5th edition (London: Crosby Lockwood and Son, 1917), p. 21.

<sup>79</sup> *Ibid.*, p. 366; Waters, *Clipper Ship*, p. 53; Ramsay, “World’s Refrigerated Meat Traffic,” p. 1722.

<sup>80</sup> These relied on the dry air process of refrigeration, in which the compression of atmospheric air is used to cool an insulated chamber. The alternative, chemical refrigeration, relied on substances like anhydrous ammonia, which allowed for a more efficient heat cycle, but which was flammable, and did “injurious action” upon the copper pipes that were needed to desalinate sea water for “marine refrigeration.” Wallis-Taylor, *Refrigeration*, p. 48, 211, 396.

<sup>81</sup> “Australian Meat-Trade,” (1894), p. 246.

<sup>82</sup> R. Ramsay, “World’s frozen meat trade,” p. 4. In 1873, an attempt was made to ship frozen meat from Melbourne to London, but it “turned out a failure.” Wallis-Taylor, *Refrigeration*, p.2.

“proof that before long, Australia and New Zealand would have ships trading to and fro...and this must result in great benefit to these Colonies.”<sup>83</sup>

New Zealand was quick to make good on the opportunity suggested by Australia’s early triumphs. The advent of refrigeration meant, in the words of New Zealand’s delegate to the Fourth International Congress of Refrigeration (1924), “the very breath of life to us.”<sup>84</sup> The first cargo of frozen sheep meat from New Zealand arrived in London in May 1882, after 98 days at sea. The pioneering carcasses that made up the inaugural cargo were dead but not yet frozen when they were boarded onto the *SS Dunedin*: no apparatus of any kind for freezing meat then existed in the colony.<sup>85</sup> Thus when a crankshaft on the ship’s refrigerating engine broke during the loading process in December 1881—a “serious mishap,” according to the *Otago Daily Times*<sup>86</sup>—the ship’s voyage had to be delayed, and the residents of the city of Dunedin (roughly ten miles from Port Chalmers, where the *Dunedin* was moored) became the first to dine upon the colony’s frozen mutton.<sup>87</sup>

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<sup>83</sup> “Exportation of Butter,” *Star* (17 February 1881), p. 3.

<sup>84</sup> Thomas Mackenzie, quoted in *Fourth International Congress of Refrigeration*, p. 46.

<sup>85</sup> James Troubridge Critchell and Joseph Raymond, *A History of the Frozen Meat Trade: An Account of the Development and Present Day Methods of Preparation, Transport, and Marketing of Frozen and Chilled Meats*, (London: Constable and Co., 1912), p. 39.

<sup>86</sup> “Notes and Comments,” *Otago Daily Times* (17 December 1881), p. 7.

<sup>87</sup> “Christmas Relish,” *Otago Daily Times* (26 December 1881), p. 3. The 641 sheep that had already been frozen, and the 360 that were in transit to the ship, all had to be “sold in Dunedin forthwith.” Davidson, *Establishment of the Frozen-Meat Trade*, p. 14.

<b>C H R I S T M A S R E L I S H .</b>	
<b>All at the Usual Low Prices for Cash.</b>	{ Smoked Legs of Mutton Rounds of Corned Beef Corned Legs of Pork Prize Merinos and Crossbreds Mutton and Lamb and Beef Frozen Meat, ex Dunedin Every Variety of Smallgoods Sausages, Tripe, &c.
<b>A. D O R N W E L L .</b>	
<b>BRANCHES: - Kaikora, Arthur street, Manse street, Lower George street. 19d</b>	

Figure 4. The failed first cargo of the SS Dunedin was sold by the Dunedin butcher A. Dornwell as "Christmas Relish." *Otago Daily Times*, 26 December 1881, p. 3.

Upon replacement of the crankshaft, the carcasses of approximately 4,311 sheep and 598 lambs (and a sundry 22 pigs) were loaded into the insulated hold of the *Dunedin* in January 1882, and the ship set sail from Port Chalmers. The New Zealand and Australian Land Company (NZALC), the Edinburgh-based firm influential in the early development of the pastoral industry in New Zealand that backed this endeavor, were delighted to find the meat, upon arrival in London, had retained its "nutritive value" and was almost universally edible.<sup>88</sup> Soon after this initial success, the extension of steam shipping to New Zealand greatly sped up the voyage between the antipodean colony and Great Britain, and the trade in frozen sheep meat grew swiftly over subsequent decades. The quantities of meat involved swelled to nearly two million carcasses per year in 1890, and more than five million by 1910.<sup>89</sup> By the same year, more than eight hundred vessels had been outfitted "and adapted for the transport of frozen meat and other comestibles," 189 of which served

<sup>88</sup> Only one carcass was condemned. Critchell and Raymond, *History of the Frozen Meat Trade*, p. 42; "Our meat-supply," (1899), p. 616.

<sup>89</sup> Davidson, *William Soltau Davidson*, p. 37; Critchell and Raymond, *Frozen Meat Trade*, p. 415; Waters, *Clipper Ship*, p. 51-57.

the trade between the antipodes and Great Britain,<sup>90</sup> so that by the early decades of the twentieth century, the trans-hemispheric traffic in frozen mutton and lamb was a commonplace for both consumers in Britain and producers in New Zealand.

As the trade itself became established, freezing works—factories for the slaughter, partial butchery (carcasses were skinned, bled and beheaded before shipment), and freezing of sheep and lambs—sprang up throughout the antipodes, while refrigerated warehouses, or cold stores, began to populate the docks of Liverpool, London, Bristol, and other major ports in Britain.<sup>91</sup> Despite, or perhaps because of, its rapid growth, the trade in frozen meat between Great Britain and its antipodean colonies was not without hindrances. “Hurried and consequently careless stowing” of frozen cargo in preparation for its journey constituted a “chief danger,”<sup>92</sup> as it could lead to unsightly, and unappetizing, bruises. Moreover, the nature of the voyage itself between the antipodes and the North Atlantic posed a hazard. Ships from Australia and New Zealand spent between one and three months, depending on means of motive power, at sea, much of which was “under an equatorial sun.”<sup>93</sup> Equipment could (and did) fail, and obstacles were encountered during the journey. The *SS Dunedin*, whose motive power was supplied the old-fashioned way—by wind—was becalmed in the tropics, the ship’s ventilation system became blocked by

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<sup>90</sup> Wallis-Taylor, *Refrigeration*, p. 7.

<sup>91</sup> By 1910, the United Kingdom had the capacity to store more than eight million sheep carcasses. Critchell and Raymond, *History of the Frozen Meat Trade*, pp. 418-419. The East and West India Dock Company, and the London and St. Katharine Dock Company led the establishment of “public refrigerated accommodation.” Joseph G. Broodbank, “The Development of Refrigerated Accommodation in British Ports,” *Fourth International Congress of Refrigeration*, p. 1705.

<sup>92</sup> Wallis-Taylor, *Refrigeration*, p. 6.

<sup>93</sup> “Arrival of the Sailing Ship Mataura,” *European Mail* (5 October 1882). Reprinted in *Haslam’s Patent Dry Air Refrigerators*, p. 12. Derbyshire Records Office, D1333 Z/Z 5.

frost, and “the cold air was not sufficiently ‘tumbled about’ amongst the carcasses,” nearly compromising the cargo.<sup>94</sup>

The risk of spoliation was also significant. The cargo of the *SS Protos* reportedly necessitated speedy cooking “because of the tendency to rapid decomposition.”<sup>95</sup> Much of its meat, moreover, was of an unappealing dark color, a fact that most observers attributed to mismanagement and mishandling at various stages of the process from pasture to table. Alexander Bruce, the chief inspector of stock for New South Wales, believed that the “ill-treatment and starvation” to which Australian sheep were subjected was responsible for the dark color of “our mutton.”<sup>96</sup> According to an expert advisor to New Zealand’s first freezing corporations named Skilling, though, the darkness of its meat, was “a climatic effect” particular to “the meat of Victoria and New South Wales.” In an estimation typical for the time, Skilling believed that darkness was “inherent” in Australian meat because of the heat and aridity of the climate. As a more temperate, more Europe-like place, New Zealand was immune from such danger: “Not only the meat of this colony, but the men and women too,” Skilling promised, “were fresher and healthier-looking than those of the hotter climates of the sister colonies.”<sup>97</sup> While the healthful nature of New Zealand for man and sheep was celebrated, whether or not Australia was a “white man’s country,”<sup>98</sup> preoccupied settler discourse, and in this case was extended to its ovine co-colonists.<sup>99</sup>

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<sup>94</sup> Only when the captain risked life and limb to fix it was the cargo secured. Davidson, *Establishment of the Frozen-Meat Trade*, p. 15-16

<sup>95</sup> “Frozen Meat Export Company,” *North Otago Times*, p. 2.

<sup>96</sup> Alexander Bruce, “The New Zealand Frozen Meat Trade,” *Australasian Pastoralists’ Review* 2, no. 11 (14 January 1893), p. 1025.

<sup>97</sup> “Frozen Meat Export Company,” *North Otago Times*, p. 2.

<sup>98</sup> “The Drought in Australia,” *New Zealand Farmer* 22, no. 10 (October 1902), p. 532.

<sup>99</sup> The issue of race, and the question of Australia as a “white man’s country,” is a well-studied theme in the historiography. See, in particular, Warwick Anderson, *The Cultivation of Whiteness: Science, Health, and*



This perceived climatic insalubrity in Australia was in danger of being magnified by the technology of the trade. More problematic than the occasional failure of equipment such as New Zealand's early shipments experienced was the fact that any point of transfer for frozen carcasses—say, from railway car to ship, or from ship to storehouse—was an opportunity for thawing to occur, and thereby for injury to the meat to occur.<sup>100</sup> The frozen flocks of the dry, brown continent were especially prone to this vulnerability. Unlike New Zealand, where nearly all pastures were “far more favorably situated,”<sup>101</sup> located within easy distance of the colony's many ports, the bulk of Australia's flocks were grazed hundreds of dry, scorching miles from its ports. Many producers had to “drive their sheep perhaps 100 or 200 miles, and some of them even 300 miles, on foot,” Bruce explained, “and then send them 200 miles by rail” to coastal freezing works. This arduous journey “deteriorat[ed] and wast[ed] the mutton,”<sup>102</sup> and consequently prevented “the meat taking first rank” or from “having any chance as a competitor with meat killed near the pasture.”<sup>103</sup>

The alternative was to freeze inland and ship to Melbourne, Sydney, or other primary ports, but this option was nearly as problematic, as it left the frosty load vulnerable to total destruction should any mechanical failure or other impediment stall the cargo and leave it exposed to the punishing heat and sun of the continent. “[I]t is during this transition that the success of the whole undertaking is most endangered;” one observer

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*Racial Destiny in Australia* (Durham, N.C.: Duke University Press, 2006); Robin, *How a Continent Created a Nation*.

<sup>100</sup> This risk of exposure was also a problem at the other end of the journey, where transfer “from the vessel to the cold stores on land, and subsequent distribution by road or rail to the retailers,” offered ample opportunity for exposure to higher temperatures. Wallis-Tayler, *Refrigeration*, p. 6, 365.

<sup>101</sup> Bruce, “New Zealand Frozen Meat Trade,” p. 1024.

<sup>102</sup> *Ibid.*

<sup>103</sup> “The Frozen meat industry,” *Australasian Pastoralists' Review* 3, no. 2 (15 April 1893), p. 72.

noted, “for if the meat becomes at all thawed or softened in transit, the carcasses thus affected, when unshipped in the London Docks, present a most unpalatable appearance, being misshapen and discoloured, and are...condemned...as being unfit for food.”<sup>104</sup> There was no quick fix for this dilemma, and it wasn’t until the early years of the twentieth century that refrigeration and transport technology advanced sufficiently to allow for reasonably risk-free inland freezing in Australia.

### *Fraud and Prejudice*

Some of the weak points in this cold commodity chain could be, and soon were, overcome. Warehouses for cold storage, for example—“among the most wondrous of recent developments in the river-side enterprises of London,” according to a writer for *Chambers’s Journal*<sup>105</sup>—were constructed in what another popularizer in Britain called a “topsy-turvy” manner.<sup>106</sup> Loading hatches were located near the roof, and carefully-controlled chambers decreased in temperature as one descended towards the ground floor in order to prevent the “irruption of warm outer air into the cold storage chambers” as carcasses were loaded and unloaded.<sup>107</sup> Frozen meat, bovine as well as ovine, was often delivered to these rooftop entrances “in a sail cloth” attached to “a crane with a very long

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<sup>104</sup> “A Visit to the Australian Frozen Meat Company’s Works,” *Leisure Hour*, (September 1882), p. 561.

<sup>105</sup> “Australian Meat-Trade,” (1894), p. 247.

<sup>106</sup> Lillingston, “Frozen Food,” p. 241.

<sup>107</sup> *Ibid*; Wallis-Tayler, *Refrigeration*, p. 285.

jib” that could reach ships “lying at a considerable distance from the wharf,” or by specially constructed “beef [or mutton] hoists.”<sup>108</sup>

But not all obstacles to the trade could be so smoothly overcome, and perhaps the most serious impediment frozen colonial mutton faced was consumer prejudice. Britons marveled at the workings of refrigerating engines, and at the interior climate of cold stores. In 1881, a journalist granted a tour of the *SS Orient*'s cold store, packed with the frozen carcasses of Victoria's merino sheep, was taken with “the Arctic condition of the temperature,” and the “white, snowy particles” that “had settled on the timbers and gathered on the wall till the whole had become touched with the heaviest of hoar frosts, and was sparkling at numberless points in the light of our lamp.”<sup>109</sup> Another described the hold of the *SS Garrone* as “picturesque in the extreme.”<sup>110</sup> But despite this fascination with the technology of frozen transport and its effects, Britons also regarded early frozen cargoes with trepidation, and people had to be convinced that mutton which had “cropped pasture land 13,000 miles away, and been dead from six to nine months, or even longer” was good to eat.<sup>111</sup> Consumers worried about the effect of the freezing process on the “nutritive value” and tastiness of meat.<sup>112</sup> They particularly feared that the blood, and consequently nutritional value and flavor, would seep out of the meat during the thawing process, leaving it in a “dry and tasteless condition.”<sup>113</sup>

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<sup>108</sup> Wallis-Taylor, *Refrigeration*, p. 374, 379.

<sup>109</sup> “Australian Refrigerated Meat,” *Daily News* (5 October 1881). Reprinted in *Haslam's Dry Air Refrigerators*, p. 6. Derbyshire Records Office, D1333 Z/Z 5.

<sup>110</sup> “Arrival of Frozen Meat from Australia,” *Daily News* (24 October 1881). Reprinted in *Haslam's Dry Air Refrigerators*, p. 7. Derbyshire Records Office, D1333 Z/Z 5.

<sup>111</sup> Lillingston, “Frozen food,” p. 238.

<sup>112</sup> “Our meat-supply,” (1899), p. 616.

<sup>113</sup> “Visit to the Australian Frozen Meat Company,” p. 560.

Specific concern over the effect of the freezing process on the wholesomeness of colonial mutton was part of a wider unease over how, and increasingly, from where, the British got their nourishment in the nineteenth century. By the latter decades of the century, provisioning the domestic population of Great Britain had come to mean relying on “animal food” and grains produced elsewhere. Writing in the *Journal of the Royal Agricultural Society of England* in 1887, P. G. Craigie, Secretary of the Central Chamber of Agriculture (the “embryo” of the British Agricultural Office), remarked on this shift. Food was “still as imperative as ever for our fellow-subjects to find,” he noted—no amount of progress could eliminate this basic fact of existence. But Britons no longer sought grains and chops produced exclusively on domestic acres for, as Craigie wrote, “world-wide is now the field whence it comes to our markets.”<sup>114</sup> Coming to terms with these altered circumstances was difficult for a nation that prided itself on the consumption of fine meat, and on raising the animals that produced it. Britons initially resisted the colonial harvest of mutton and lamb, insisting on their preference for the home-grown article. “Englishmen prefer,” wrote a contributor to the *Saturday Review* in 1881, “from taste or habit, English meat.”<sup>115</sup>

One way around “the extreme prejudice with which frozen meat was at first regarded”<sup>116</sup> was to undercut homegrown competition. As a writer for the *New Review* put it in 1897,

We do not eat Frozen Mutton and Refrigerated Beef because an Arctic temperature improves their flavour, or because the breeds and pasturage in other countries make better Meat than we can grow. We import them because they are cheap.<sup>117</sup>

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<sup>114</sup> P. G. Craigie, “Twenty Years’ Change,” p. 465.

<sup>115</sup> “American meat,” *Saturday Review of Politics, Literature, Science and Art*, 52, no. 1366 (1881), p. 812.

<sup>116</sup> Lillingston, “Frozen Food,” p. 237.

By the virtue of its availability, and because it could retail for several pence less per pound than home-grown mutton of comparable quality, colonial mutton found purchasers, even if not from among the most discerning epicures, in the early days of its trade.<sup>117</sup> Before Australasian mutton and American beef was widely available, meat was dear enough to limit its consumption by the working class, even though it made up a larger proportion of the laborer's diet in Britain than it did in most of Europe.<sup>118</sup> Consumers thus found it hard to resist such value, and the prejudice against frozen meat, as Leonard Lillingston observed, writing for *Good Words* magazine, was likely "mainly a middle-class one after all."<sup>120</sup>

Better-heeled purchasers were not as easily seduced by the great value of colonial mutton, but it found its way to the tables of the middle classes nonetheless. Despite assertions that discerning palates could tell the difference between locally-raised and colonial imports, there was nothing to stop retailers selling colonial meat as home-grown. The best colonial meat, it was asserted again and again, though excellent, did not measure up to the very best home-grown, so that butchers selling the "bountiful supplies from the Antipodes" as Scotch and English mutton could make an extra profit.<sup>121</sup> In 1879, as Lillingston noted rather astutely "the British public would in theory have nothing to do

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<sup>117</sup> Ernest E. Williams, "The Foreigner in the Farmyard," *The New Review*, 16, no. 93 (February 1897), p. 149.

<sup>118</sup> *Ibid.* Throughout the 1880s, colonial mutton sold for roughly one pence less per pound than home-grown, and by 1896 prime New Zealand mutton was two and a half pence less per pound than the top end of Britain's produce, while Australian mutton (alongside Argentinean) bottomed out at four and a half pence less. "Annual Statement of the Trade of the United Kingdom with Foreign Countries and British Possessions for the year 1885," *Quarterly Review* 165, no. 329 (July 1887), p. 54-55; Williams, "Foreigner in Farmyard," p. 150.

<sup>119</sup> *Ibid.*; Lillingston, "Frozen Food," p. 238; Harriet Ritvo, *The Platypus and the mermaid and other figments of the classifying imagination*, Cambridge, MA: Harvard University Press, 1997, p. 194.

<sup>120</sup> Lillingston, "Frozen Food," p. 238.

<sup>121</sup> "The Australian Meat-Trade," (1894), p. 247.

with Australian mutton; but somebody appears to have eaten it, for the next year 17,275 carcasses came into this country.” This he attributed to the strong likelihood that “a great deal of it was sold as home fed, so that the consumer, through his own ignorance and folly, not only ate Colonial mutton against his wishes, but had to pay more than its market value.”<sup>122</sup>

The extent of misrepresentation in marketing frozen meat from Australia and New Zealand, however, was probably more limited than anxious publications on the topic from the time suggest, not least because meat that has once been frozen presents a different appearance than meat which has never been frozen, offering an immediate visual cue to most purchasers as to the provenance (at least in broad geographical terms) of their supper.<sup>123</sup> Nevertheless, concern about actual and potential fraud was sufficient to convene a Select Committee in the House of Lords in 1893, on the *Marking of Foreign Meat*.<sup>124</sup> Various representatives of the trade paraded before the Committee, giving evidence (sometimes contradictory) as to the quality and distinguishability of colonial versus home-grown meat, and to the persistence of fraud in London and provincial cities.<sup>125</sup> Among other findings, the Committee determined that consumers were “entitled to have English meat when they pay the price of English meat,” regardless of any discrepancy in quality between foreign and domestic supply.<sup>126</sup>

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<sup>122</sup> Lillingston, “Frozen Food,” p. 238.

<sup>123</sup> Higgins, ““Mutton Dressed as Lamb?”” p. 173, 175, 177.

<sup>124</sup> *Report from the Select Committee on Marking of Foreign Meat, &c., Together with the Proceedings of the Committee, Minutes of Evidence, and Appendix* (London: Her Majesty’s Stationery Office, 1893).

<sup>125</sup> Higgins, ““Mutton Dressed as Lamb?”” p. 167-71.

<sup>126</sup> *Report from the Select Committee on Marking of Foreign Meat*, p. xi. Economic historian David M. Higgins has conducted a detailed analysis of the evidence given to the Select Committee, and concluded that not only was fraud less prevalent than contemporaries supposed, its effects were also less pernicious. Had fraud existed at a significant scale, Higgins argues, the price differential between meat of foreign origin,

Even though the fraudulent sale of colonial meat was relatively insignificant in economic terms,<sup>127</sup> and even if the kind of worry that inspired the House of Lords Select Committee was overinflated, it remained culturally significant. Concerns about the misrepresentation of meat to British consumers spoke to precisely that centrality of meat to their daily lives and national identity. From the perspective of the colony, the misrepresentation of colonial meat constituted a “fraud upon the English consumer and New Zealand producer” alike.<sup>128</sup> The tendency to sell “New Zealand frozen mutton as prime English” was, in a way, a compliment to the quality of the colonial article.<sup>129</sup> Nevertheless, it left suppliers in New Zealand feeling they had been “‘had,’ ‘robbed,’ or ‘swindled’” by British purveyors of their produce, a sentiment which the *Australian Pastoralists’ Review*—the premier agricultural journal for the region, and one that tended to be more sympathetic to the Australian contingent of its readership—remarked snidely, was “tenaciously cherished by many shippers of frozen meat in New Zealand.”<sup>130</sup>

From the colonial vantage point, worse than swapping New Zealand mutton for prime English was the possibility that London butchers might sell “inferior English...as New Zealand,”<sup>131</sup> as this was damaging to New Zealand’s reputation as well as its profits.

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including colonial, and domestically-produced meat would have narrowed over time. That this did not occur suggests a relatively low degree of fraud in the marketplace. What misrepresentation existed, Higgins concludes, was practiced over a relatively short span of time in the early years of the trade. Moreover, outrage over the misrepresentation of the point of origin of meat expressed an objection to the act of fraud itself, not necessarily a prejudice against foreign or colonial meat. That is, consumers objected to being sold a false article (colonial meat passed off as British), not necessarily to colonial meat per se. Britons wished “to exercise their patriotic preference in favour of domestic meat,” and misrepresentation of colonial mutton as British prevented them from doing so. Higgins, “Mutton Dressed as Lamb?” p. 182, 176, 174.

<sup>127</sup> As Higgins argues in *ibid.*

<sup>128</sup> “Fraudulent Dealings with New Zealand Mutton,” *New Zealand Farmer* 11, no. 9 (September 1891), p. 357.

<sup>129</sup> *Ibid.*

<sup>130</sup> “The Frozen Meat Industry,” *Australian Pastoralists’ Review* 3, no. 2 (15 April 1893), p. 73.

<sup>131</sup> “Fraudulent Dealings,” p. 357.

However, this charge was likely overblown, as the *Australian Pastoralists' Review* was only too happy to point out. In 1892 the average price for carcasses of British sheep that had “met a fair death at the hands of the butchers” had yet to fall below—or even to the level of—those that “[came] out of refrigerating chambers.” Until it did, this particular accusation was economically disadvantageous, and therefore unlikely to be made.<sup>132</sup> A more realistic, and more damaging possibility was finding “La Plata mutton ticketed as New Zealand”<sup>133</sup> or as Australian, as was often the case. As “River Plate frozen mutton” was “far behind New Zealand in the matter of quality,”<sup>134</sup> the association with such an inferior article was a threat “to our good name.”<sup>135</sup> It was likewise a threat to colonial profits for both Australian and New Zealand suppliers, and that, in the words of one Australian journalist, was where “the shoe pinches us.”<sup>136</sup>

The Australian colonies and New Zealand were “active and jealous rivals” in the frozen meat trade,<sup>137</sup> as in other arenas, but at least when it came to frozen mutton, New Zealand clearly led the trade. As Australians consequently had to hear “a good deal about New Zealand,” the *Australasian Pastoralists' Review* complained, “they may be pardoned if they become a trifle weary of listening to the oft-told tale of the manner in which the sister colony emerged from her financial difficulties.”<sup>138</sup> Though “fraudulent dealings”<sup>139</sup>

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<sup>132</sup> *Australian Pastoralists' Review* 2, no. 10 (15 December 1892), p. 953.

<sup>133</sup> “Export Only Good Mutton,” *New Zealand Farmer* 11, no. 9 (September 1891), p. 371.

<sup>134</sup> “River Plate and New Zealand Mutton,” *New Zealand Farmer* 12, no. 1 (January 1892), p. 4.

<sup>135</sup> “Export Only Good Mutton,” p. 371.

<sup>136</sup> *Australian Pastoralists' Review*, 2, no. 11 (14 January 1893), p. 993. Australians worried that, while “Australian meat sold as Australian finds ready market both in London and the country towns, but every now and then a shipment of inferior mutton comes in from other places, the meat is sold as Australian, the public are dissatisfied, and will not buy again for some time.” *Australian Pastoralists' Review* (15 March 1893), p. 37.

<sup>137</sup> “Pure-bred Hampshire Downs,” *New Zealand Farmer* 12, no. 1 (January 1892), p. 3.

<sup>138</sup> “The Frozen Meat Industry,” (1893) p. 72.



with colonial mutton were problematic for both Australia and New Zealand, their frozen offerings were distinct enough to mean that the process played out differently according to specific colonial origin. Australian frozen meat was rated lower on the British market than New Zealand's, and thus it was more likely to be associated with the dreaded River Plate variety, while the excellence of New Zealand's offerings made it vulnerable to being passed off as home-grown.

Part of what determined the differences in how fraud was perpetrated with regard to colonial meat on the British market came down to breed and climate, and to the various suitability of different types of sheep for colonial environments. The same challenges of climate that made Australia "not so suitable for killing and freezing" sheep put it at a disadvantage relative to its eastern neighbor.<sup>140</sup> Yet Australian mutton developed a reputation for being second-rate not only because its product lacked the "finishing" that came as a consequence of proximal pastures and abattoirs, but also because merino mutton was as controversial in the 1880s as it had been in the 1810s (Chapter 2). Cheap meat could always find a market in Britain, but no matter how good the price, Britons would almost always prefer the mutton of a "native" British breed over the that of the merino.

With the advent of the trade in frozen meat, Australian pastoralists quickly learned that they could not simply export mutton grown as a by-product of their wool industry to hungry, waiting consumers in Britain, and New Zealanders, observing the fortunes of their neighbors' mutton on the metropolitan markets were quick to learn from such mistakes. The first frozen shipments from Australia were exclusively of merino mutton. And while

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<sup>139</sup> "Fraudulent Dealings," p. 357.

<sup>140</sup> Lillington, "Frozen Food," p. 239.

Australians were certain that “it would be hard to beat for flavour a leg of mountain-fed Merino wether in good condition,” Britons were not “sufficiently colonial” to agree.<sup>141</sup> A writer for the *Australian Pastoralists’ Review* believed that there was “no reason by the English taste should not be educated to a proper appreciation of merino mutton,”<sup>142</sup> but as the quintessential connoisseurs of quality in meat, they were not likely to be reeducated in matters of taste by their colonial cousins.

New Zealanders were happy to let their neighbors across the Tasman try: as one sensible producer there observed in 1892,

Merino wethers are unexcelled, but if the Home customer does not like them, why damage the trade. Oysters are good[,] so are eels, but I should be at starvation point before I would touch an eel, and I know of others who would have to leave the room if a dish of oysters were put on the table. Let the Australians and South Americans send this class. When they have educated the Home taste, then we can chip in.<sup>143</sup>

Matters of taste were just that, and “it [did] not matter a rush what we in New Zealand may individually or even collectively consider the best mutton to eat.” The customer was always right, and if pastoralists in both places wanted “to do the best we can out of the frozen meat trade, we must breed and ship mutton they like best in London, and pity their bad taste if we don’t happen to agree with it.”<sup>144</sup>

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<sup>141</sup> “How Down Mutton Went Down,” *New Zealand Farmer* 12, no. 9 (September 1892), p. 370.

<sup>142</sup> *Australian Pastoralists’ Review* 3, no. 2 (15 April 1893), p. 72.

<sup>143</sup> William Darley, “Mutton Cutlets,” *New Zealand Farmer* 12, no. 2 (February 1892), p. 38

<sup>144</sup> “Down and Lincoln Breeds of Sheep,” *New Zealand Farmer* 12, no. 6 (June 1892), p. 249.

*Cross purposes*

This prejudice against merino mutton presented an opportunity for New Zealand to capitalize on its more diverse colonial flocks. Even among the greener, more temperate parts of Australia, like Victoria, “when it [came] to competition as to mutton,” wrote the *New Zealand Farmer*, “there is no comparison between the natural advantages of New Zealand.”<sup>145</sup> New Zealanders were well aware that “though we can’t come near Australia in the fineness and lightness in grease of our wool clip, we have all the advantage in climate for taking the lead in meat production.”<sup>146</sup> Because of its wider range of regional environments and cooler, wetter, more temperate and more varied climate, New Zealand was poised to take fuller advantage of the new opportunities of the frozen meat trade. The heftier carcasses of established longwool breeds in New Zealand, though fatty, were already better-suited to the mutton trade than were the scrawny frames of merinos. While the long-wool breeds predominated in the lowlands of New Zealand, other British breeds such as Southdowns and Shropshires could be found in smaller numbers, grazing the downs and foothills of Canterbury province in particular. These were champion mutton-makers, producing a pleasantly plump leg of mutton, but only a lightweight fleece of medium quality, making them (at least in the early days) relatively unpopular in the colonies.<sup>147</sup>

But shifting from an ovine population geared towards the production of wool to one aimed at producing mutton came with its own challenges. As any good breeder knew, a

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<sup>145</sup> “The Frozen Meat Trade in Victoria and New Zealand,” *New Zealand Farmer* 20, no. 5 (May 1900), p. 193.

<sup>146</sup> Taylor White, “Cross-breeding of sheep,” *New Zealand Farmer*, 12, no. 5 (May 1892), p. 198.

<sup>147</sup> Corin, “The Management of sheep on small farms,” *New Zealand Farmer* 12, no. 5 (May 1892), p. 197.

sheep bred for wool did not necessarily produce good mutton. In fact, the case was more often quite the reverse. The relationship between the weight and texture of a fleece, on the one hand, and the carcass on the other, was a problem which had occupied breeders in Great Britain since at least the late eighteenth century (Chapter 1). Selection for one nearly always seemed to come at the expense of the other: if the merino's carcass was sway-backed and puny, Bakewell's improved Leicester was "deficient in wool."<sup>148</sup> In reformulating their flocks to suit the tables of metropolitan diners, producers were determined not to sacrifice wool for carcass. "Without a doubt," wrote Taylor White, the author of a two-part series on crossbreeding in the *New Zealand Farmer*, "wool as well as mutton must be kept going."<sup>149</sup> Colonial improvers therefore held wool and mutton, as well as local environment and distant consumer demand, in the balance.

While their struggle to blend good meat and fine wool may have resembled the efforts of earlier generations of British breeders to establish an Anglo-merino breed in Britain (Chapter 2), the connection between locality and type was of a different character in colonial New Zealand than it was in Great Britain. In the latter, types were understood to have evolved slowly over time, directed not only by the guiding "hand of man,"<sup>150</sup> but by the determining influence of climate, soil and environment (Chapter 1). To meet the imperatives of modern production in Great Britain, this tight connection between place and type had to be severed, or at the very least, weakened (Chapter 3). New Zealand, on the

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<sup>148</sup> George B. Worgan, *General View of the Agriculture of the County of Cornwall* (London: B. McMillan, 1807), p. 149.

<sup>149</sup> Taylor White, "On Cross Breeding Sheep," *New Zealand Farmer* 12, no. 4 (April 1892), p. 157.

<sup>150</sup> William Brown, *British Sheep Farming*, (Edinburgh: Adam and Charles Black, 1870), p. 2.

other hand, was a *tabula rasa* for domesticated livestock, where existing types had to be altered, or new ones created to suit localities as they were encountered.

In this, the intimacy between type and place that marked British breeding was a model for colonial breeders in New Zealand. “In England the natural habitat of the different breeds has been long since determined,” declared an essayist for the *New Zealand Farmer*, “and we should in vain look for a Southdown in the fens of Lincolnshire, or a Lincoln on the chalk downs of Sussex or Hampshire.”<sup>151</sup> In their own efforts, close attention to this issue was critical. “Everything depends on the kind of pasture a sheep is sustained on,” wrote T. H. Anson, an early authority in sheep-breeding in the Canterbury region of New Zealand, in 1877. “[W]hether it will attain to a point as near perfection in carcass and wool bearing capabilities as possible; or, on the other hand, whether it degenerates every year in both” came down to the resonance between the land and the breed.<sup>152</sup>

As settlers learned the lay of their new land, they were also increasingly aware that the hills, dales, plains and river valleys of New Zealand were like, but not *quite* like, “Home.”<sup>153</sup> Despite superficial similarities, in New Zealand, a contributor to the *New Zealand Country Journal* noted, “things don’t go on quite as regularly in the old groove as

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<sup>151</sup> Corin, “Management of sheep,” p. 197.

<sup>152</sup> T. H. Anson, “On sheep,” *New Zealand Country Journal*, 1, no. 3 (July 1877), p. 190. Holland et al write that “the matching of sheep breed to environmental conditions was to become a national preoccupation.” Holland et al, “Remaking the Grasslands,” p. 77.

<sup>153</sup> The difficulty of reading the climate and environment of New Zealand was pervasive during the colonial period. How people, Maori and colonists alike, learned the lay of their land is the subject of Peter Holland, Jim Williams, and Vaughan Wood, “Learning about the Environment in Early Colonial New Zealand,” in *Seeds of Empire: The Environmental Transformation of New Zealand*, edited by Tom Brooking and Eric Pawson (London and New York: I.B. Tauris, 2011), pp. 34-50.

they do in England.”<sup>154</sup> For example, the seasons in New Zealand were just as topsy-turvy a version of Great Britain as a cold store was of a warehouse designed for regular articles. The *New Zealand Farmer* continually reminded its readership of this lest they, in their enthusiasm for the resonances between the “England of the South Pacific” (as New Zealand was sometimes called) and that of the North Atlantic, forgot their surroundings. September in New Zealand was “more like that of April in England as far as the weather goes,”<sup>155</sup> and November, too, was “different from the same month in the old country.” This month might bring “to the minds of old people who have lived in London in the days of fog thick and yellow as pea-soup, candles lit and gas lamps at noon, and link boys with torches by daylight.” In New Zealand, by contrast, it was “one of the best months in the year.”<sup>156</sup>

For Samuel Butler, the British writer, satirist, and free-thinker who spent four years sheep-farming in New Zealand, Canterbury province “reminded [him] much of Cambridgeshire,” (provided a hazy atmosphere conveniently “obscure[d] the snowy range” of the Southern Alps, visible in the distance on clear days). Native cabbage trees, too, “which have a very tropical appearance,” were “distinctive” enough to “characterise [Canterbury] as not English.”<sup>157</sup> Just as the landscape was like, but not quite the same as, those of the “old country,” as types of sheep bred for particular local conditions in the British Isles, British breeds were close, but not *quite* right for the colony. These uncannily familiar yet strange lands could be modified to a degree—they could be (and were) sown

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<sup>154</sup> “Observer,” “A Farmers [sic] Jotting,” *New Zealand Country Journal* 2, no. 2 (March 1878), p. 101.

<sup>155</sup> “The Farm: September Month,” *New Zealand Farmer* 11, no. 9 (September 1891), p. 1.

<sup>156</sup> “The Farm: November Month,” *New Zealand Farmer* 11, no. 11 (November 1891), p. 445.

<sup>157</sup> Samuel Butler, *A first year in Canterbury settlement, with other early essays*, R. A. Streatfield, ed. (New York: E.P. Dutton and Co., 1915), p. 36.

with English grasses, drained or irrigated<sup>158</sup>—but fundamental aspects of place such as altitude, exposure, climate, wetness, and temperature could be little modified.

Sheep, on the other hand, were far more malleable. Their character could be remolded to fit the land with more ease than the land could be refigured to suit the breed.<sup>159</sup> “We must adapt our sheep to the character of land we possess,” Anson exhorted other pastoralists, and the readiest, most effective way to do this was by crossbreeding disparate types in order to combine their traits into one variety.<sup>160</sup> Emulating an earlier generation of breeders in Great Britain who had, with great enthusiasm, crossbred local varieties in the name of improving existing breeds at the turn of the nineteenth century, colonial breeders in New Zealand employed the same methods, only they used them in the hope of hitting upon the right combinations of characteristics for particular places. Here, improvement indicated a desire to reconfigure existing breeds into new kinds “native” to the colony.

Crossbreeding had initially been undertaken in New Zealand as a way to maximize wool production. Early efforts to place the right type of sheep on the right type of pasture operated upon the theory of a cooperative “*chain of breeding*.”<sup>161</sup> By crossbreeding merinos and long-wooled breeds according to this principle, the properties of the merino— notably its fineness of wool—could cascade down from the high country sheep stations, through the foothills and river valleys, becoming proportionally more dilute among the

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<sup>158</sup> New Zealand underwent the most extensive “grassland transformation” of any of the European settler colonies. Pawson and Brooking, “Introduction,” p. 3.

<sup>159</sup> See also Peden, “Pastoralism and Transformation,” p. 87-91.

<sup>160</sup> Anson, “On sheep,” p. 190.

<sup>161</sup> John McBeath, “Cross-breeding of sheep,” *New Zealand Country Journal*, 1, no. 4 (October 1877), p. 267. Italics original.

flocks in the approach to the lowlands and marshes. In the other direction, size, carcass weight, and weight of fleece—all markers of the long-wooled breeds—could climb gradually in diminishing proportion toward the highlands, the exclusive domain of the pure merino. In theory, this model meant that each sheep farmer could attain, by carefully calibrating his crossbreeding program, the right type of sheep for his pastures.

Even under the best execution of this principle, however, whatever type of sheep thus attained would have to be constantly recreated, as cross-bred animals only breed true under very special circumstances. The more likely outcome was imperfect implementation of the “chain of breeding.” A lack of “quality and lustre” could indicate, as in the case of the semi-tropical region around Auckland “that the settlers here have not got the right kind of cross,” as the editor of the *New Zealand Farmer* opined in 1892.<sup>162</sup> Indeed, “New Zealand” was as long a word when it came to regional variation as it was meteorologically,<sup>163</sup> and even in broad strokes, what worked for the South Island might not suit the North. As White noted, colonial sheepmen required “perhaps not an exactly similar sheep for both islands, but one to suit each district.”<sup>164</sup>

In the “development of a breed,” moreover, “Rusticus,” writing for the *Australasian Pastoralists’ Review*, advised breeders to make “the most of characteristics that are produced by the circumstances of their surroundings,” rather than to “fight against Nature in trying to turn out animals similar to those grown in other districts or countries under quite different conditions.”<sup>165</sup> Wherever pastoralists had the wrong kind of cross—or

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<sup>162</sup> “Breeding for Wool in the North,” *New Zealand Farmer* 12, no. 1 (January 1892), p.4.

<sup>163</sup> “Month of October,” p. 397.

<sup>164</sup> White, “On Cross Breeding Sheep,” p. 157.

<sup>165</sup> “Rusticus,” “Stud Breeding,” *Australian Pastoralists’ Review* 3, no. 2 (15 April 1893), p. 76.



even simply ill-chosen parent types for producing crosses—constant infusions of “fresh blood” were the telltale sign that a “type [was] not suited to its surroundings, treatment, [and] pasture,”<sup>166</sup> and commentators had reason to lament the “very strong inclination on the part of many farmers to disregard the character of the land, and to be guided in their selection more by their fancy for a particular breed than by its suitability for the conditions under which it would have to be maintained.”<sup>167</sup>

Exporting sheep for meat added yet another layer of complexity to the existing (and imperfect) process of colonial crossbreeding. Put to work in service of the frozen meat trade, this theory of stratified production provided the means for breeders to recast their flocks as a compromise between local environments and metropolitan consumer demand. While colonial breeders felt sure that “the sheep farmers out here are naturally the best judges” of which “particular line of breeding” suited local conditions, they acknowledged that “London salesmen would, of course, know best what breed of sheep produced the mutton that sold for the highest price in their markets.”<sup>168</sup> Opinion varied as to whether that breed was a Southdown, Shropshire, or something else, but all—in the metropole and colonies alike—agreed that the crossbred flocks of New Zealand “suit[ed] the taste of English purchasers”<sup>169</sup> and were “more highly esteemed in the English market than the merinos which Australia chiefly furnishes.”<sup>170</sup>

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<sup>166</sup> Ibid.

<sup>167</sup> Corin, “Management of Sheep,” p. 197.

<sup>168</sup> W. Weddel, quoted in “The Mutton of Most Value in London Markets,” *New Zealand Farmer*, 12, no. 12 (December 1892), p. 476.

<sup>169</sup> “Visit to the Australian Frozen Meat Company,” p. 560.

<sup>170</sup> Lillingston, “Frozen Food,” p. 239.

*A Bakewell for the colonies*

Crossbred sheep might have made a nice renewable harvest for the wool trade, and a good terminal product for the meat trade, but for breeders, the problem with crossbred sheep was that by their nature they produced instability and uncontrolled variation down the generations—the very thing that the establishment of pure breeds had worked so hard to forestall.<sup>171</sup> Throwbacks were as much a concern in colonial New Zealand as they were in mid-century Great Britain (Chapter 3). While a first generation cross between a long-wooled breed and a merino might dependably give rise to an animal combining the weighty fleece of the one with the fineness of the other, the offspring of *that* generation, depending on whether it was bred to a long-wool or a merino, “naturally throws to the extremes” of one or another of its “parent stock,” and the result could not be guaranteed as an improvement over the breed in question in its pure state.<sup>172</sup> This was especially so wherever the “component parts of the blend,”<sup>173</sup> John Roberts cautioned at the Intercolonial Stock Conference held in Wellington on 25 October 1892, were “two such violent extremes as the merino and long-wool” as they were in New Zealand. This was exactly the kind of cross between radically unlike types against which an earlier generation in Britain had warned (Chapter 2), and it meant that “much difficulty, and more than ordinary difficulty,” would attend any attempt to established a fixed cross between them.

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<sup>171</sup> See also Harriet Ritvo, “Possessing Mother Nature: Genetic Capital in Eighteenth-Century Britain,” in *Early Modern Conceptions of Property*, edited by John Brewer and Susan Staves (London and New York: Routledge, 1995), pp. 413–26.

<sup>172</sup> Holford, *New Zealand's Own Breed*, p. 11.

<sup>173</sup> John Roberts, “Crossbred Sheep in New Zealand,” *Australian Pastoralists' Review* 2, no. 9 (15 November 1892), p. 220. See also “The Intercolonial Stock Conference,” *Australian Pastoralists' Review* 2, no 9 (15 November 1892), p. 903-904.

The very extremity of the cross, Roberts warned, “must of necessity tend towards frequent throwing back to the original strain, on one side or the other,” and breeders ought “not to anticipate that the permanent establishment of the half-bred sheep in the colony as a distinct type will be...easily secured.”<sup>174</sup>

Despite the difficulty of their task, colonial breeders were determined to see it through. In catering to the new productive imperatives of the frozen meat trade, and in response to the character of colonial pastures, sheep farmers in New Zealand needed a new breed, distinctly colonial but still capable of satisfying the tastes of the most discerning British consumers. “We require,” Taylor White exhorted his compatriots, “to raise a new type suitable for New Zealand and the requirements of the meat-freezing industry.”<sup>175</sup> “English bred sheep are not exactly what we want,” breeders recognized as early as 1877, as they were apt to alter in some way in unfamiliar colonial environments, whether that meant succumbing to disease, failing to fatten, or growing coarse or rangy.<sup>176</sup> Rather, New Zealand wanted “some native breeds, which shall not need to go through a course of acclimatisation, nor be periodically reinforced by new blood imported for the purpose.”<sup>177</sup> The challenge was how to achieve this, given the intrinsic instability of crossbred varieties. “We want a Bakewell to fix up a new type of sheep of permanent characteristics” was the call that sprang from the pages of the *New Zealand Farmer* in 1892. The “new type”

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<sup>174</sup> Roberts, “Crossbred Sheep,” p. 220.

<sup>175</sup> White, “On Cross Breeding Sheep,” p. 156.

<sup>176</sup> “Cross-bred Sheep,” *New Zealand Country Journal*, 1, no. 4 (October 1877), p. 269.

<sup>177</sup> *Ibid.*

should be “neither too large or the reverse, of a muscular or fleshy character, and one to arrive at the standard of weight and condition in eighteen months time.”<sup>178</sup>

Tastes were changing in Britain, and it was important that this new breed should suit consumer preferences. “As mutton sheep,” the large-framed longwools were “a thing of the past,”<sup>179</sup> declared “a Southland correspondent” in the *New Zealand Farmer*. When it came to longwooled breeds, New Zealand fielded “smaller-bodied, shorter-legged, but better woolled sheep” than “the big-framed, upstanding English-bred Lincolns,” for example. But even the relatively diminutive “Colonial types” of longwools were too big for the trade.<sup>180</sup> By the 1880s and 1890s such “mountain[s] of fat and tallow” had fallen from favor at “the tables in the Old Country.”<sup>181</sup> Consumer preference in Great Britain had shifted towards leaner, more compact breeds like Hampshires and Shropshires, and other “fashionable” types lately “improved” by crossing with the Southdown.<sup>182</sup> Even the working classes appeared to have thrown off the shackles of upper-class opinions of their dietary habits when it came to mutton (Chapter 2), and had developed into “somewhat fastidious” consumers.<sup>183</sup> As a contributor to the *New Zealand Farmer* reported in 1892, “a greater mistake could not be made” than to assume “that the poorer class of people in England will eat the fat carcasses of the Lincoln.”<sup>184</sup> This individual had “personal experience amongst the agricultural, manufacturing, and mining population, and can say,

<sup>178</sup> White, “Cross-breeding of Sheep,” p. 198.

<sup>179</sup> “Probable Changes in New Zealand Sheep-Breeding,” *New Zealand Farmer* 12, no. 11 (November 1892), supplement p. 4.

<sup>180</sup> “English and New Zealand Bred Lincolns,” *New Zealand Farmer* 20, no. 1 (January 1900), p. 18.

<sup>181</sup> “Probable Changes,” p. 4; White, “On Cross Breeding Sheep,” p. 156.

<sup>182</sup> “Southdown Prize Ram,” *New Zealand Farmer* 11, no. 10 (October 1891), p. 400.

<sup>183</sup> “The Dry Air Refrigerator, or Freezing Machine,” *British Mail* (April 1882). Reprinted in *Haslam’s Patent Dry Air Refrigerators*. Derbyshire Records Office, D1333 Z/Z 5.

<sup>184</sup> “Downs V. Lincolns for Crossing,” *New Zealand Farmer* 12, 7 (July 1892), p. 278. Also reprinted in “Sheep Breeding,” *Australian Pastoralists’ Review* 2, no. 8 (15 October 1892), p. 881.

that they positively refuse to buy fat mutton, if any choice is given them.”<sup>185</sup> No longer desired as a way to extend the life of a meal through stews and drippings, as proponents had argued was the essential utility of the New Leicester Longwool in the 1810s (Chapter 2), in the 1880s “‘fat’ simply spell[ed] ‘waste.’”<sup>186</sup> Consequently, the “chief object” among New Zealand breeders, according to White, must be to “raise a medium sheep suitable for freezing”<sup>187</sup> without fat “laid on in thick patches on the outside of the loins,” as longwooled types were liable to accumulate.<sup>188</sup> Breeders aimed “to *increase the lean meat* in like ratio to the fat, in fact, to breed an *active, muscular* animal rather than a sluggard, or one almost dead from *fatty degeneration* of the system.”<sup>189</sup> New Zealand’s “native” breed was to be as hale and hearty as its can-do colonists.

### *Fixing the cross*

These characteristics were simple enough to produce in the first cross, but to replicated them over generations was no easy matter. To “fix” such characteristics, a Bakewell was just what the situation called for. While crossbreeding might produce a good terminal product for the freezer, breeders in New Zealand wanted a fixed and reliable type that could produce *generations* of “freezers,” “the best stamp of...breed for the freezing trade:”

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<sup>185</sup> Ibid.

<sup>186</sup> Ibid.

<sup>187</sup> White, “On Cross Breeding Sheep,” p. 156.

<sup>188</sup> Ibid.

<sup>189</sup> Ibid.

they wanted, in essence, to replicate the advantageous points of a crossbred in a pure breed able to reproduce itself with consistency.<sup>190</sup>

John Roberts was not the only one to doubt whether such a thing could even be achieved. The uncertainty and variability inherent in this process led to much anxiety. Breeders feared that efforts to establish a fixed cross would put the colony's flocks into a hopeless muddle, and that a lack of particularity would create an indeterminate horde of "mongrel-bred" sheep with no distinction, hence no predictability, in breeding.<sup>191</sup> Donald Oliver, who was "a well-known sheep-farmer,"<sup>192</sup> claimed in 1880 that the "good qualities" of New Zealand's crossed store stock sheep were "not fixed, and no mortal can breed again...without changing the character of their get to something inferior,"<sup>193</sup> a position he maintained into the 1890s, when he again asserted "that crossbreds have not sufficient fixity of type, and consequently continued breeding upon them will produce only worse and worse mongrels."<sup>194</sup> In 1880, Oliver had and when the Canterbury Agricultural and Pastoral Association introduced a category for crossbred sheep the same year, "no section in the sheep department of the Show occasioned more interest." *The New Zealand Farmer* reported that "exhibitors from north and south vied to show unbelievers that establishment of a 'crossbred breed' was not only possible, but had been actually accomplished."<sup>195</sup>

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<sup>190</sup> W. Weddel, quoted in "Mutton of Most Value," p. 476.

<sup>191</sup> Anson, "On sheep," p.190.

<sup>192</sup> "District Reports: Canterbury Province, North and Mid," *New Zealand Farmer* 11, no. 11 (November 1891), p. 468.

<sup>193</sup> Donald Oliver, "Sheep Breeding," *New Zealand Country Journal* 4, no. 6 (November 1880), p. 373. Paper originally given at the Ashburton Agricultural and Pastoral Association, 9 October 1880.

<sup>194</sup> "District Reports: Canterbury Province," p. 468.

<sup>195</sup> "Show Reports: Canterbury Agricultural and Pastoral Association's Metropolitan Show," *New Zealand Farmer* 11, no. 12 (December 1891), p. 522.

Efforts to establish a “permanent” or “fixed” cross, following the tried and true methods of their British predecessors, had begun as early as the 1860s. James Little, whose flocks in the 1890s were “the evolution of several crosses,”<sup>196</sup> began working toward an “inbred crossbreed” in Otago as early as 1868.<sup>197</sup> William Soltau Davidson, dissatisfied with the “uneven” nature of the “three-quarter-breds,” determined to fix the half-bred type (“It was the half-bred sheep we wanted and nothing more or less”) by intensive inbreeding of carefully selected crossbreds.<sup>198</sup> The flock he oversaw for the New Zealand and Australian Land Company, “kept perfectly pure and inbred”<sup>199</sup> since its inception in the 1870s, was eventually recognized as the oldest continuously bred flock of what was eventually known as the Corriedale.<sup>200</sup> Others who left a less indelible mark on the new type of “native” colonial breed included Thomas Thatcher of Wanganui, whose plucky venture<sup>201</sup> had begun to garner attention in 1892. He had for some time “endeavour[ed] to establish a new type of sheep, combining the best qualities of the Merino and Lincoln,” and his hybrid breed, “specially fitted for the frozen meat trade,” was applauded in the pages of the *New Zealand Farmer* as a “demonstrat[ion] that the fusion of new blood has

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<sup>196</sup> “District Reports: Canterbury Province,” p. 468.

<sup>197</sup> Little established his pure-breeding cross from the Romney breed and merino sheep “before anyone else had thought of such a thing. James Little, *The Story of the Corriedale: Also a Few Suggestions as to the Possible Cause of Black Sheep* (New Zealand: Willis and Aitken, 1917), p. 3.

<sup>198</sup> Davidson, *William Soltau Davidson*, p. 23.

<sup>199</sup> Murray, “Prefatory note,” p. iv.

<sup>200</sup> In fact, controversy surrounding early efforts led parties involved to publish memoirs detailing competing claims to primacy. “Corriedale” was eventually settled upon as the name for the fixed cross in honor of Little’s initial efforts as the manager of an Otago estate by that name. Davidson and the New Zealand and Australia Land Company advocated for “Southern Cross” as a moniker for the type. Davidson, *William Soltau Davidson*; Little, *The Story of the Corriedale*.

<sup>201</sup> “District Reports: Wellington Province, Wanganui,” *New Zealand Farmer* 12, no. 11 (November 1892), p. 457.

great advantages, the sheep being healthier, better woolled, and of excellent carcase proportions.”<sup>202</sup>

The way to fuse “new blood” into a new breed was simply to apply the principles of inbreeding to crossbred stock. Advocates of this method pointed out that “the greater number of the present *pure breeds* of British sheep have originated from the *crossing* of two or more of the original breeds in certain districts, for formerly each prescribed area within certain limits held its own distinct breed of sheep.”<sup>203</sup> Even established breeds like “the Lincoln and Romney or Kent are both allowed to have been *improved* by Leicester blood.”<sup>204</sup> Bakewell’s own practice remained shrouded in the mists of uncertainty, but he, too, likely infused the target of his improving zeal with genetics (or “blood”) from another breed, subsequently inbreeding intensively to eliminate other than the desired characteristics.<sup>205</sup>

The trick for colonists in New Zealand was to select for “a carcase approach[ing] a square in every way,”<sup>206</sup> without sacrificing the lucrative high quality wool for which their sheep were known. As Roberts had predicted, establishing this in a “permanent cross-bred flock” was a difficult feat.<sup>207</sup> As with any attempt to play Bakewell, the first step was to use superior foundation stock (Chapter 3). Even if a farmer could not “go in for extra well-bred expensive animals,” the ability “to pick the very best of the flock” for breeding was essential.<sup>208</sup> “Much more depends on the antecedents of family history than length of

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<sup>202</sup> Ibid.

<sup>203</sup> White, “On Cross Breeding Sheep,” p. 156.

<sup>204</sup> Ibid.

<sup>205</sup> Ritvo, “Possessing Mother Nature.”

<sup>206</sup> “Selecting Sheep for a Breeding Flock,” *New Zealand Farmer* 11, no. 4 (April 1891), p. 133.

<sup>207</sup> White, “On Cross Breeding Sheep,” p. 157.

<sup>208</sup> “Selecting Sheep,” p. 133.



pedigree, or the appearance of the individual animal in question,” the *Australian Pastoralists’ Review* cautioned. Sheep from well-bred, well-maintained flocks “will almost without exception, reproduce and forcibly transmit their qualities to the flocks they are mated with.”<sup>209</sup>

Having such excellent material in hand, the next step was to “fuse” their “blood.” Taylor White’s recipe for establishing “a permanent cross-bred flock, or as we may call it a new variety,” was to “work with three distinct varieties.”<sup>210</sup> After the first cross between a merino ewe and a longwooled ram, such as a Lincoln, the progeny would be bred to a third type—a Southdown, Leicester, Shropshire, or whatever kind the breeder desired “the offspring to most resemble.” This method had several virtues. By employing a greater range of types, it satisfied the partisans of several breeds, for whom the issue of which breed to use in the production of “freezers” was a matter of intense debate.<sup>211</sup> More importantly, White claimed it worked—with an efficacy he took “as an established fact”—to minimize the tendency of the first cross to “throw back,” and thereby provided something of a shortcut to “fixing” the cross.<sup>212</sup>

The real difficulty in a simple two breed cross was that offspring tended to “vary greatly each from each when bred *inter se*,” thus requiring “a matter of lengthy time and

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<sup>209</sup> *Australian Pastoralists’ Review* 3, no. 1 (15 March 1893), p. 4.

<sup>210</sup> White, “On Cross Breeding Sheep,” p. 157.

<sup>211</sup> By and large, interested parties in New Zealand fell out along the lines of Down breeds versus the longwools, in recognition of the changing preferences of Britons, and the need to cater to metropolitan taste if New Zealand was to maintain primacy in the frozen meat trade. See, for example, “Pure-bred Hampshire Downs,” p. 3; “Longwool and Down Mutton Sheep,” *New Zealand Farmer* 12, no. 1 (January 1892), p. 21; “Down and Lincoln Breeds of Sheep,” *New Zealand Farmer* 12, no. 6 (June 1892), p. 249; “The Down v. Lincoln Question,” *New Zealand Farmer* 12, no. 6 (June 1892), p. 250.

<sup>212</sup> White, “On Cross Breeding Sheep,” p. 157.

care before they can be bred to a uniform standard.”<sup>213</sup> This was because the first cross, by introducing a new set of traits to a population’s genotype, “weakens the heredity or power of transmitting likeness.” In subsequent generations, this variability appeared to undo the work of previous efforts to hone the heritability of a breed, in effect to “throw out” heredity, as White put it.<sup>214</sup> Without the artificial dominance produced by intensive inbreeding, “the third pure breed will more readily impress its likeness on the result of the first cross,” White advised. The “mongrel blood” produced from the first cross was highly susceptible to the “impress” of type, and by continuing to breed from “a pure sire of the last variety,” a breeder might finally fix “a permanent and new type...which will breed true within itself.”<sup>215</sup>



Figure 5. Corriedale sheep in New Zealand, n.d.<sup>216</sup>

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<sup>213</sup> Ibid.

<sup>214</sup> Ibid.

<sup>215</sup> Ibid.

<sup>216</sup> Ref: PAColl-6001-47. Alexander Turnbull Library, Wellington, New Zealand.

*The southern cross*

Even with the assistance of a third breed, “fusing” the blood of multiple types into a fixed cross was a lengthy process. The benefit of that expenditure of time was that it adapted the “new variety” to local conditions. Ultimately, a successfully fixed cross could not only be “ranked as a pure breed, true to type,” but just as important in the colonial context, would be “appropriate to the district and climate where raised.”<sup>217</sup> This was the endgame for colonial breeders in New Zealand: the “inbred half-bred,”<sup>218</sup> in which could be “found weight, substance, evenness of fleece, and symmetry combined in such a manner as is somewhat foreign to English sheep-breeders, who, it is known, consider mutton of paramount importance.”<sup>219</sup> Though the Corriedale, as it came to be called several decades later, “[had] not the long ancestry of the principal sheep breeds of the present day,” Holford admitted in 1928, “that it is an established breed, and that it breeds reasonably true to type has been adequately proved by hundreds of sheep-men in New Zealand and overseas.”<sup>220</sup>

Indeed, if the aim was to produce a “native” New Zealand breed capable of satisfying distant consumer demand for “British” meat, the “inbred half-bred” that filled the refrigerated holds of ships (alongside cross-bred mutton of various parentage that remained an important part of the export market) was indeed “a triumph of the sheepbreeder’s art.”<sup>221</sup> So successfully had this project been that by the 1920s, “many people in [England] regularly [bought] ‘Canterbury lamb’ in the belief that the meat they

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<sup>217</sup> White, “On Cross Breeding Sheep,” p. 157.

<sup>218</sup> Holford, *New Zealand’s Own*, p. 2.

<sup>219</sup> “District Reports: Palmerston North,” *New Zealand Farmer* 12, no. 11 (November 1892), p. 458.

<sup>220</sup> Holford, *New Zealand’s Own*, p. 4.

<sup>221</sup> Holford, *New Zealand’s Own*, p. 3.

are getting comes from the Canterbury district of Kent.”<sup>222</sup> The new Corriedale breed embodied these contradictions, serving as both New Zealand’s own quintessential “native” breed, and the ideal universal mutton-maker. New Zealand breeders were proud of how widely the breed had been exported—to Australia, South America, North America, Russia and even Japan—at the same time as they celebrated its unique identity as a “native” New Zealand breed. While acknowledging that “the British breeds of sheep are unsurpassed for the particular purpose for which they have been created,” Holford gave credit to the Corriedale as an ingenious creation capable of taking advantage of the natural attributes of the new worlds’ grasslands.<sup>223</sup> British breeds had taken root in New Zealand because of its affinities to “the Homeland,” but equally strong affinities among “the upland sheep lands of the Dominion” made the Corriedale, as a “sheep bred to suit this class of country,” eminently suited to commensurate pastures “in foreign lands,” making it uniquely suited to new conditions of imperial production.<sup>224</sup>

But the Corriedale performed a rhetorical function as well. Perhaps its most significant claim was to being “entirely a New Zealand production”<sup>225</sup>—a breed “native” to the small archipelago angled across the roaring forties, dividing the Tasman sea from the South Pacific. As bold as the breed’s outlook was the claim to nativeness its boosters made on the Corriedale’s behalf. As “New Zealand’s own,” the Corriedale breed served to validate the frozen meat trade in cultural as well as economic terms, a validation that

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<sup>222</sup> Ramsay, “World’s frozen meat trade,” p. 5.

<sup>223</sup> What Alfred Crosby called the “neo-Europes” of ecological imperialism. Crosby, *Ecological Imperialism: the Biological Expansion of Europe, 900-1900* (Cambridge: Cambridge University Press, 1986).

<sup>224</sup> Holford, *New Zealand’s Own*, p. 17.

<sup>225</sup> David Jones, “New Zealand Trade,” in *The Frozen and Chilled Meat Trade*, edited by Ross Grant, David Jones, R. Ramsay et al., *The Frozen and Chilled Meat Trade: A Practical Treatise by Specialists in the Meat Trade*, 2 vols. (London: Gresham Publishing Company Ltd., 1929), vol. 1, p. 119.

extended even as far as the colony itself. As newcomers to a remote corner of the globe, for colonists in New Zealand, the creation and celebration of the Corriedale as a “native” breed authenticated their own presence there. This claim was bolstered by the association of Corriedales with the “natural,” which rested on its dual-purpose combination of wool and mutton production. The trend towards combining wool and mutton production, spurred by the frozen meat trade, “[was] not—as [was] often supposed—away from the nature of the...animals in their original state,” claimed boosters for the breed in the 1930s, “but rather back to that original state.”<sup>226</sup> Millennia of domestication, they argued, had “naturally” produced dual-purpose sheep—it was only relatively recently that modern breeders had disaggregated flesh and fleece to produce the highly specialized breeds of the late nineteenth century.

According to this reasoning, although the Corriedale was a newcomer among sheep breeds and to New Zealand, it represented “a much closer approximation to the original state of the animal fixed by thousands of years of natural adaptation to environment than...[did] the comparatively recently developed specialist breeds.”<sup>227</sup> By naturalizing the Corriedale, such views worked to confer antiquity as a corollary of nativeness, much in the way that an earlier cohort of cattle breeders had pursued similar purposes for the Hereford breed in Britain (Chapter 3). To thus naturalize the hybrid type “New Zealand’s own,” even in retrospect, was consequential, as any such claim to nativeness was in the context of settler colonialism. It produced the breed as a kind of proxy for the legitimization of

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<sup>226</sup> *The Corriedale, New Zealand’s Own Breed: History and Development* (Christchurch: The Corriedale Sheep Society, 1936), p. 3.

<sup>227</sup> *Ibid.*

European settlers in a way that would have been difficult, and not necessarily desirable—though no less imperative—for human colonists to make at the time.

## Chapter 5

### The Return of the Native Breed

In the spring of 1996, the Rare Breeds Survival Trust (RBST) announced the establishment of “a new category of endangered breeds.”<sup>1</sup> Called “Native British” breeds,<sup>2</sup> the Trust defined their new targets of conservation as the “pure original types” of British livestock—“foundation-type animals” that risked, not so much being lost to the sands of time, but being swept away in the tidal wave of modern genetics, commercial breeding tactics, and market imperatives.<sup>3</sup> To begin the Trust focused on “genuine traditional cattle,” but “the list will surely grow in the future,” an announcement in the RBST’s monthly magazine, *The Ark*, predicted confidently, as they were “looking at all species.”<sup>4</sup> The native bovines on which the organization first focused its attention were what Peter King, the RBST’s field officer, described as the “direct descendants of those animals registered in the first

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<sup>1</sup> “Native Breeds—New Rare Breeds Classification,” *The Ark* 24, no. 2 (Summer 1996), p. 55.

<sup>2</sup> *Ibid.*

<sup>3</sup> Peter King, “Genetic Diversity of Traditional British Breeds of Beef Cattle,” *The Ark* 21, no. 1 (Spring 1996), p. 27.

<sup>4</sup> “Native Breeds,” p. 55.

herd books,”<sup>5</sup> quite an inclusive category given the relative novelty of published herd books (Chapter 3).<sup>6</sup> Compared to commercial types, these animals were “slower maturing,” hardier, and “more efficient in converting low quality forage” to beef, and in general, “respond[ed] well to non-intensive production methods.”<sup>7</sup> The risk they faced was not necessarily extinction, which had seemed to threaten primitive breeds of sheep like the Soay a generation earlier (Chapter 1), but a more insidious demise resulting instead from “introgression.”<sup>8</sup>

A term borrowed from population genetics, introgression referred to the process by which a population’s genotype could be infiltrated by an exogenous gene or genes, and thereby altered irrevocably. This described, in modern technical terms, the genetic effect of crossing, what nineteenth-century experts like David Low called “intermixture:”<sup>9</sup> any time two types were mixed, whether intentionally or not, their hereditary material blended, and some traits were inevitably lost. Introgression carries no necessary moral charge. Whether an “official [or] ‘unofficial’” act, it simply connotes change within the collective genetic potential of a type, and often, by extension, in the phenotypes of a group’s constituent individuals.<sup>10</sup> This process had been the making of some of Britain’s best-known breeds—witness the “improved” Shorthorn, the outcome of crossing introduced Dutch cattle with

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<sup>5</sup> King, “Traditional British Breeds,” p. 27.

<sup>6</sup> The first breed to have an established herd book was the Shorthorn, in 1822. The *Herd Book of Hereford Cattle* was established in 1846. George Coates, *The General Short-Horned Herd-Book: Containing the Pedigrees of Short-horned Bulls, Cows, et. of the Improved Durham Breed, from the Earliest Account to the Year 1822* (Otley: W. Walker, 1822); T. C. Eyton, *The Herd Book of Hereford Cattle*, 1 (London: Longman and Co., 1846).

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> David Low, *On the Domestic Animals of the British Islands: Comprehending the Natural and Economical History of Species and Varieties; the Description of the Properties of External Form; and Observations on the Principles and Practice of Breeding* (London: Longman, Brown, Green & Longmans, 1845), p. 116.

<sup>10</sup> King, “Traditional British Breeds,” p. 27.



the old Yorkshire breed in the early eighteenth century.<sup>11</sup> These breeds were produced in the spirit of improvement, the opposite of the RBST's conservationist drive, and King argued that alterations could be taken too far: "change and 'improvement' are not an evil as long as a breed retains its fundamental characteristics," but unfortunately, this "[was] not always the case."<sup>12</sup> Too often, stockbreeders succumbed to the imperatives (and temptations) of modern production: seduced by "rapid short-term financial gain," they were "attracted by the drastic measure of introducing an entirely different breed" to that which was already in their possession.<sup>13</sup> The "ever increasing influence of continental breeds" like the Charolais and Limosin meant that, without conservationist vigilance, purebred British types, many of which had been carefully maintained by "handful[s] of breeders who have faithfully continued to breed the pure original types," might be bred out of existence, or simply abandoned.<sup>14</sup>

Over the previous century and a half, a number of British breeds had already been lost to the demands of productivity. Among the first to go was the unsung "true Cornish breed of sheep" in the late eighteenth century (Chapter 1);<sup>15</sup> slightly later, and much more lamented, was the Norfolk Horn sheep. A "ranging" breed that refused to submit to "the indignities of the close hurdling system" as it developed in the eighteenth century, by the 1840s the "perfectly pure Norfolk Breed" had "becom[e] rare," crossed with Improved Leicesters and Shorthorns "to such a degree" that David Low predicted it would "soon

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<sup>11</sup> William Youatt, *The Complete Grazier; Or, Farmer's and Cattle Breeder's and Dealer's Assistant* (London: Baldwin and Cradock, 1833), p. 10.

<sup>12</sup> *Ibid.*

<sup>13</sup> *Ibid.*

<sup>14</sup> *Ibid.*

<sup>15</sup> George B. Worgan, *General View of the Agriculture of the County of Cornwall* (London: B. McMillan, 1807), p. 148.

cease to be found.”<sup>16</sup> Other British types, too, fell victim to the passage of time, among them the Cumberland and Lincolnshire Curly Coat breeds of pig.<sup>17</sup> The Trust hoped that by singling out those “genuine traditional” types of cattle “deserv[ing] recognition,” they could forestall the loss of any more breeds.<sup>18</sup>

The native breed, of course, was not a new formulation on the part of the RBST. As the preceding chapters have shown, the idea that some types of livestock are native or aboriginal to the British Isles (or, indeed, to other places) has a long and checkered history. Sometimes these varieties have been glorified for their unique environmental or economic attributes, at other times denigrated for their crudeness or lack of refinement in comparison to “improved” breeds. The Trust’s initiative to conserve them was, however, an appropriation of the term under novel circumstances. Conserving British livestock heritage and resources had been the crux of the RBST’s agenda since its inception (Chapter 1), but the issue of native belonging had entered into this imperative primarily with reference to archaic, seemingly aboriginal breeds of sheep and cattle (for example, Soay sheep).

Pursuing the conservation of British purebred types of the nineteenth century in connection with their nativeness to the British Isles was a new—and important—articulation of this

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<sup>16</sup> Frank Rayns, “Norfolk Horn Sheep,” *The Ark* 2, no. 12 (15 December 1975), p. 322; Elizabeth Henson, *Rare Breeds in History* (Cheltenham: Olivant & Sons Ltd., 1986), p. 17; Low, *Domestic Animals*, p. 116. The Norfolk Horn’s popularity continued to wane, but the breed hung on until the late 1960s when the remaining three purebred rams were used in an attempt to recreate a population that “closely resembled the original breed.” The RBST hailed the degree of verisimilitude thus produced as a success, but whether or not the “new” Norfolk Horn could be said to faithfully represent the “Old Norfolk breed” was hotly debated in *The Ark* magazine. See Rayns, “Norfolk Horn Sheep,” pp. 318-324; P. A. Jewell, “The Case for Preservation,” *The Ark* 2, no. 4 (April 1975), p. 84; J. C. Hindson, “February’s Question: Answer no.1,” *The Ark* 3, no. 2 (February 1976), p. 54; Michael Rosenberg, “February’s Question: Answer no.2,” *The Ark* 3, no. 2 (February 1976), p. 55; George Hastings, “February’s Question: Answer no. 4,” *The Ark* 2, no. 3 (February 1976), p. 55; A. J. Sheppy, “Off with the New,” *The Ark* 3, no. 4 (April 1976), p. 117.

<sup>17</sup> “News: Return of the Natives,” *The Ark* 8, no. 11 (15 November 1981), p. 379. Between 1900 and 1973, more than twenty breeds of British livestock of various species went extinct. Paula Mayfield, Communications Officer for the RBST, personal communication, 14 March 2008.

<sup>18</sup> King, “Traditional British Breeds,” p. 27.

issue. This shift acknowledged that the place of Great Britain in the world of livestock breeding had altered: it was no longer “the stud farm of the world,” and its native breeds had slipped from the position of dominance they had enjoyed in days past.<sup>19</sup> Far from being sought after by pastoralists around the world, many British breeds had tumbled so far from their former glory that some of them were in danger of possible extinction even in their native land.

### *Inventing tradition*

The particulars of this conservationist impulse mattered, too. The Trust named the “original Hereford type” as the inspiration for their new classification—a native British breed whose genetic makeup seemed to be in such danger of alteration from introgression that “modern stock [bore] little resemblance to the original breed.”<sup>20</sup> According to the cutting-edge DNA analysis used to verify the plight of the breed in 1996, the Trust was able to identify “just 350 pure British Herefords not showing signs of alien influence” out of over 2,000 cattle tested.<sup>21</sup> These findings confirmed what a small group of breeders had been observing since the late 1970s and 1980s: that Herefords in Britain were changing dramatically—not for the better, and perhaps irreversibly—as a result of imported foreign genetics. The culprits, however, were not the continental giants used widely among British

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<sup>19</sup> In June 1960, John Cumber wrote in *Country Life* magazine that for “possibly a century or more, Britain has been known as the stud farm of the world and British breeds of livestock have been, if not the only ones in the world, certainly the foremost.” John Cumber, “Future Trends in Livestock Breeding,” *Country Life* 77 (30 June 1960), p. 1484.

<sup>20</sup> “Native Breeds,” (1996), p. 55.

<sup>21</sup> *Ibid.*

beef and dairy herds since their first introduction in 1961,<sup>22</sup> but rather bulls of the Hereford breed, bred and raised in Canada and the United States, and re-imported to Britain as part of the same general enthusiasm for “taller, leaner, bigger, more uniform” cattle that had brought the Charolais and Limosin across the Channel.<sup>23</sup>



Figure 1. Canadian-bred bull owned by Les Cook, Cambridgeshire, UK. January 2010.

<sup>22</sup> Peter King erroneously dates this introduction to 1968 (King, “Traditional British Breeds,” p. 27). The question of importing Charolais bulls to Great Britain was a matter of controversy, the risk of disease at least as worrying as the potential for introgression in British beef breeds like the Hereford, Aberdeen-Angus, or Red Poll. Thirty bulls were purchased in October of 1961 at an average cost of £560, and by March 1962 the Milk Marketing Board had made the semen of 16 available to interested farmers. See Cincinnatus, “Farming Notes: The Charollais Project,” *Country Life* 80 (26 October 1961), p. 1027; Cincinnatus, “Farming Notes: Charollais Challenge,” *Country Life* 131 (15 March 1962), p. 619. Also “Charollais Bulls,” *Country Life* 78 (15 September 1960), p. 538; Cincinnatus, “Farming Notes: The Charollais Controversy,” *Country Life* 78 (22 December 1960), p. 1569; Cincinnatus, “Farming Notes: The Charollais Bull Test,” *Country Life* 79 (18 May 1961), p. 1175; Cincinnatus, “Farming Notes: Charollais Bulls,” *Country Life* 80 (27 July 1961), p. 213; Cincinnatus, “Farming Notes: No Charollais for Scotland?,” *Country Life* 80 (9 November 1961), p. 1159; and Cincinnatus, “Farming Notes: Charollais Bulls,” *Country Life* 80 (28 December 1961), p. 1645.

<sup>23</sup> In 1960, the *Country Life* magazine reported that there seemed “to be a perfect mania these days to look abroad for foreign breeds of livestock to import.” “Farming Notes: Interest in Pietrain Pigs,” *Country Life* 77 (9 June 1960), p. 1341.

The postcolonial bovine immigrants that threatened “pure English” Herefords were larger than their British counterparts, and they reached maturity faster. More than this, they looked and behaved differently: their markings were perceptibly different from those of the English type, and their constitution was more delicate than that of Hereford cattle bred always and only in Britain. Nevertheless, many British breeders greeted them enthusiastically, and used these Canadian bulls widely, hoping to impart their size and precocity to their own herds. Appreciation for the imported cattle, however, was not universal, and a small a subset of breeders observed these developments with increasing trepidation. They were not yet convinced of the superiority of the newly-arrived Herefords, and as they observed the effects of Canadian genetics on English herds, they began to discern a threat to English pedigrees. The characteristics of English Herefords seemed at odds with those of the Canadians, and the outcome of mixing the two were Herefords that did not look like they should, at least to proponents of the English type. This cautious minority began piecemeal efforts at preservation, and as individual action coalesced into growing recognition of the differences between Canadian and “pure English” bloodlines, the English type gained status as a distinct variety, first by the Hereford Cattle Society in 1995, and then, in 1996, by the RBST.<sup>24</sup>

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<sup>24</sup> The Hereford Cattle Society began distinguishing “traditional” entries to the *Herd Book of Hereford Cattle* in the 1995 volume. Les Cook, one of the first breeders active in the preservation of “Traditional” Herefords, remembers “calling them something like ‘pure English’” in the 1970s and 1980s—*not*, he is quick to point out, “with a desire to put anyone else’s cattle down, it’s just I knew the type of pedigree I was looking for.” Les Cook, interview, 4 January 2010.



Figure 2. A Traditional Hereford cow described as having “a very nineteenth-century brisket.”<sup>25</sup> Bred by Les Cook, Cambridgeshire, UK, January 2010.

While the high degree of introgression revealed by genetic testing suggested that the Traditional Hereford was in a grave state, by other measures it was an unusual choice as the poster breed for the RBST’s new initiative. In the first place, both the breed’s history as a “native” type and its relationship to the British Isles as a whole were complicated. The very nativeness of Hereford cattle, even to their own county, had been contested throughout the nineteenth century (Chapter 3). And its identity as British, moreover, was arguably weaker than other more recognizably national types. White Park cattle, for instance, were more obviously ancient and evidently aboriginal than the Hereford (which made them both more native and more British), as was its domesticated supposed offshoot, the British White breed, which the RBST adopted as its logo. Even the Hereford’s

<sup>25</sup> Interview with Les Cook, 4 January 2010.

old rival, the Shorthorn—which dominated the national herd for dairy and beef until the 1930s<sup>26</sup>—was in a way a more logical choice, having effectively been born British.<sup>27</sup> The Hereford’s road to national recognition, on the other hand, took place mostly on colonial and American soil. Without its history of exportation and expansion in the nineteenth century—a point of pride among Hereford breeders as well as the foundation for its recognition in Great Britain and more widely—there would have been nothing for the RBST to conserve: only thanks to the vast reservoir of Hereford blood beyond the shores resulting from its widespread exportation in the late nineteenth century were “pure English” Herefords of the late-twentieth-century at risk of introgression from within the breed itself. Despite rhetorical emphasis on native belonging to Great Britain, the nature of this threat, its conservationist implications, and the response it generated at the close of the twentieth century were very much an imperial story, dependent in the first place on the breed’s imperial road to Britishness in the late nineteenth century, and subsequently on a denial, at least in the realm of agriculture, of the imperial experience as a reciprocal one.

### *Type and transposition*

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<sup>26</sup> The UK’s 1908 livestock census “demonstrated the overwhelming numerical superiority of the dual-purpose Shorthorn.” The breed constituted 64 percent of the national herd, estimated at 4.5 million cattle. Joan Grundy, “The Hereford Bull: His Contribution to New World and Domestic Beef Supplies,” *Agricultural History Review* 55, 1 (2002), p. 80.

<sup>27</sup> That is to say, unlike the Hereford which was a “county breed” *par excellence*, the Shorthorn’s profile since the last quarter of the century was decidedly a national one, indicated both by its nearly universal distribution within the United Kingdom, and its nomenclature, which included terms denoting locality—(the “improved” Durham breed, the “improved” Yorkshire breed)—but which was dominated by a categorical name based on a physical trait rather than its geographical origins.

Towards the end of the nineteenth century, the sense that there was perhaps “no breed of cattle which has been exposed to so much opposition as the Hereford” persisted among its proponents in Great Britain.<sup>28</sup> An earlier generation had been more sanguine about the breed’s prospects in the British Isles. After all, the oxen “for which the county of Hereford is famous”<sup>29</sup> were held in high repute among the graziers serving the London market (Chapter 3), and in the early years of the nineteenth century, it had appeared as though the Hereford breed was “spreading very fast, and will, in a few years, exhibit their white faces in almost every pasture in this Island.”<sup>30</sup> Observers, like the one who signed himself T. S. in an 1808 letter to the *Agricultural Magazine*, were sure that “when this breed becomes more known,” Herefords would have “the preference shewn them [that] they so justly merit.”<sup>31</sup>

As the century progressed, though, no such preference was forthcoming. On the contrary, the Shorthorn breed continued to dominate, geographically and rhetorically. By the latter decades of the nineteenth century this breed’s popularity was, if anything, even higher than before. One particularly enthusiastic and high-minded proponent declared the “Durham of Old England” to be England’s “greatest combination of beef and milk,” possessed of “a stately majesty of position” reminiscent “of ‘Landseer’s famous dog picture.’”<sup>32</sup> From a more practical perspective, the Shorthorn was “as prominent in

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<sup>28</sup> “Hereford Cattle,” *The Maitland Mercury & Hunter River General Advertiser* (3 October 1885), p. 21.

<sup>29</sup> T. S., “On the Choice and Management of Dairy Stock, with a few Observations on the Best Methods of Rearing Calves,” *Agricultural Magazine* 3 (July 1808), p. 7.

<sup>30</sup> T. Weston, “General Remarks on the Shew of Fat Cattle in Smithfield,” *Commercial and Agricultural Magazine* 5, 29 (December 1801), p. 383.

<sup>31</sup> T. S., “Choice and Management of Dairy Stock,” p. 7.

<sup>32</sup> “British Breeds of Cattle,” *Livestock Journal and Fancier’s Gazette* 21 (22 May 1885), p. 495.



numbers and power of good things as ever” in the 1880s,<sup>33</sup> and had spread so far and wide throughout the British Isles that it seemed poised to “monopolise the whole face of the country,” according to a journalist for the *Livestock Journal and Fancier’s Gazette*.<sup>34</sup>

By contrast, Herefords had come to suffer by association the want of prestige that characterized its breeders. They remained the practical breed of tenant farmers, and their proponents tended to be far less influential than the Shorthorn’s. Champions of the breed chafed at the unfair state of things this produced. The “‘Whitefaces’ have had to contend against many difficulties,” as one journalist put it, “not having been in the hands of monied men, but chiefly owned by tenant-farmers,” so that “in competing for the front place amongst the bovine race, they have been without that support and influence which have been given to its most formidable opponent.”<sup>35</sup> Such influence and support had created a demand for Shorthorns all out of proportion to the merit of the breed, according to an observer who believed that “fifty years hence, our ‘craze’ for them will be put on a par with the tulip craze [and the] South Sea Bubble craze.”<sup>36</sup> In such a setting, where prestige drove the primary measure of value, what practical evidence Hereford enthusiasts mustered carried little weight. According to their proponents, Hereford cattle received more accolades than Shorthorns in the show ring, continually brought “better prices” in the auction ring, and had “always been...more economical feeder[s] and grazier[s]” than their rivals, yet they continued to rate second. Given their self-evident merit as a breed, “is it not

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<sup>33</sup> Ibid.

<sup>34</sup> “Hereford Cattle,” *Livestock Journal* 2 (12 November 1875), p. 689.

<sup>35</sup> “Hereford Cattle,” *The Maitland Mercury and Hunter River General Advertiser* (3 October 1885), p. 21.

<sup>36</sup> “Hereford Cattle,” *The Brisbane Courier* (13 December 1882), p. 3.

strange,” asked one agricultural journalist, “that the Press and the agricultural societies have not been more ready to encourage them?”<sup>37</sup>

Herefords were not as wildly popular as Shorthorns, but recognition beyond their traditional confines was slowly growing. If they had not managed to “extend themselves over the entire face of the land like the Shorthorn,” it was clearly not a matter of the breed’s inability to adapt to the different climates, environments, and systems of management of the British Isles.<sup>38</sup> On the contrary, evidence of the breed’s adaptability abounded. In preparation for his widely-read 1863 essay, Thomas Duckham collected testimony affirming the Hereford’s transposability from breeders throughout the British Isles and farther afield.<sup>39</sup> Although they had not expanded beyond their “native county”<sup>40</sup> in the same numbers as the “improved” Durham at that time, where they did seek greener pastures, the red and white cattle of western England proved to be highly amenable to a range of localities. The estate of R. W. Reynall in Westmeath, Ireland, for instance, was home to one of the oldest herds of Hereford cattle outside of England—bred *in situ* “for fully a hundred years.”<sup>41</sup> (Reynall’s “taste for high-class stock” was evidently as old as his

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<sup>37</sup> “Hereford Cattle,” *Maitland Mercury* (1885), p. 21.

<sup>38</sup> “Hereford Cattle,” *Livestock Journal* (1875), p. 689

<sup>39</sup> Duckham’s essay, “A Lecture on the History, Progress, and Comparative Merits of the Hereford Breed of Cattle,” was first delivered at the Royal Agricultural College at Cirencester, 4 December 1863. In 1869, he had it reprinted in volume 6 of *Eyton’s Herd Book of Hereford Cattle*. The bulk of it made its way into the Tasmanian weekly, *The Mercury*, in 1872, by way of *The Field*, a major British publication concerned with sporting and agricultural pursuits. The full text of the lecture was also included in the first volume of *The New Zealand Herd Book* in 1886. See T. Duckham. “A Lecture on the History, Progress, and Comparative Merits of the Hereford Breed of Cattle,” (London: Rogerson & Tuxford, 1863), pp. 3-32, reprinted in T. Duckham, *Eyton’s Herd Book of Hereford Cattle*, vol. 6 (Hereford and London: Longman and Co., 1868); “The Hereford Breed of Cattle,” *The Mercury* (3 May 1872), p. 3; *The New Zealand Herd Book (of Breeds of Cattle other than Short-Horns) Embracing Herefords, Ayrshires, Polled Angus, Channel Islands’, Devons and Dutch Friesian 1* (Christchurch: Canterbury Agricultural and Pastoral Association, 1884).

<sup>40</sup> “Hereford Cattle,” *Livestock Journal* (1875), p. 689

<sup>41</sup> “Herefords in Westmeath,” *Livestock Journal 2* (3 September 1875), p. 450.

herd, it having been “born with him,” according to the *Livestock Journal*.)<sup>42</sup> There, Herefords “readily [became] acclimatized,” they “retain[ed] their general character in every respect,”<sup>43</sup> and even, Reynall claimed, “improve[d] from the moment they arrive in Ireland.”<sup>44</sup> Other Irish breeders were equally enthusiastic. Herefords were “hardier than the Shorthorn, and more easily fattened” than other breeds, and in the view of Samuel Gilliland of Londonderry, “the best class of stock” he could “keep for the butcher.”<sup>45</sup>

Testimony from elsewhere in the British Isles was hardly less effusive. “The praise...bestowed upon the breed in the neighbourhood of Preston,” in Lancashire—the old stronghold of Bakewellian improvement, and considered in the 1860s to be Shorthorn territory—was gratifying to one proponent.<sup>46</sup> And as Hereford breeders “push[ed] the Whitefaces further north,” cattlemen in Scotland affirmed the type’s value.<sup>47</sup> An Aberdeenshire breeder reported that “the Herefords are hardy and well adapted for this northern climate,” thriving in situations where “the best shorthorns” proved too “delicate, and frequently died.”<sup>48</sup> Closer to the breed’s original stamping grounds, they were in even

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<sup>42</sup> Ibid. In an interesting conflation of the practitioner and his subject—not unlike that observed by Rebecca Cassidy among contemporary thoroughbred horse breeders—commentators often attributed a breeder’s skill to heredity. The son of another prominent Hereford breeder, William Tudge, was said to have “inherited his father’s taste for fine cattle,” and in the Ashburner family, the production of several good breeders of Shorthorns occasioned the *Livestock Journal* to remark that, in that family, “the taste for Shorthorns is thus hereditary.” Cosmo, “Among the Herefords: Mr. Tudge’s Herd at Leinthal,” *Livestock Journal* 21 (1 May 1885), p. 424; “Shorthorns for California,” *Livestock Journal* 2 (29 October 1875), p. 642; Rebecca Cassidy, *The Sport of Kings: Kinship, Class and Thoroughbred Breeding in Newmarket* (Cambridge and New York: Cambridge University Press, 2002).

<sup>43</sup> R. W. Reynall, quoted in T. Duckham, “A Lecture on the History, Progress, and Comparative Merits of the Hereford Breed of Cattle” (London: Rogerson & Tuxford, 1863), p. 27. Reprinted in T. Duckham, *Eyton’s Herd Book of Hereford Cattle*, vol. 6 (Hereford and London: Longman and Co., 1868). Paper originally given at the Royal Agricultural College at Cirencester, 4 December 1863.

<sup>44</sup> Reynall, quoted in *ibid.*, p. 27.

<sup>45</sup> Samuel Gilliland, quoted in *ibid.*, p. 26.

<sup>46</sup> “Hereford Cattle,” *Maitland Mercury* (1885), p. 21.

<sup>47</sup> *Ibid.*

<sup>48</sup> Mr. Lumsden, quoted in Duckham, “History, Progress, and Comparative Merits,” p. 26.

higher repute. Duckham noted that they had “almost the exclusive possession not only of the county from whence they take their name, but also the nearby [Welsh] counties of Monmouth, Brecon, Radnor, and Salop,” and were equally popular deeper in Wales.<sup>49</sup> Their “hardiness on the mountain farms” was an asset in Cardiganshire, according to one estate agent, where “in this cold wet climate,” Shorthorns did not “retain their character in a similar degree to the Herefords.”<sup>50</sup> And on the coastal downs of Dorset, “so far from their being degenerated,” Herefords were, as in Ireland, “much improved.”<sup>51</sup>

The way the Hereford was said to “retain its character” across diverse regions and varied conditions was a key factor in the breed’s modestly growing popularity. It indicated a fixity of traits that could only result from the purity born of hereditary isolation, whether produced by the accident of circumstance, or by the artifice of pedigree: the range of characteristics brought out under new circumstances was narrow enough for the transposed breed to remain more or less as it had been bred, in terms of phenotype and behavior. In more practical terms, it meant that a breeder was likely to get what he bargained for—in the Hereford’s case, an economical feeder and a hardy beef-producer—regardless of systems of management or idiosyncrasies of location. This attribute, however, existed in tension with the adaptive capabilities of a breed, without which a breed tended to languish or “degenerate” in a new setting. The inverse of fixity of character, the ability to adjust to new conditions and to thrive in foreign circumstances relied on the degree of variability in a breed’s collectively embodied hereditary potential.

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<sup>49</sup> Ibid, p. 22.

<sup>50</sup> John Murrison, quoted in *ibid*, p. 25-26.

<sup>51</sup> James Mappower, quoted in *ibid*, p. 23.

Thus, to be transposable, a breed had to strike just the right balance between adaptability and hereditary stability. Too much fixity and a breed would fail to flourish outside its habitual circumstances, but too much variability, and it would evolve away from its characteristic type. The Shorthorn was known for the former, its inability to adapt to circumstances other than those for which it was bred (very intensive production) reflecting its long history as a closed breed. On the other hand, when breeders in the nineteenth century praised the Hereford for the way in which it “retained its character,” it was because it seemed remarkably ready to acclimatize in new conditions—soil, topography, dampness, dryness, luxuriance of feed or the reverse—without submitting entirely to local conditions. Even in the mountains of Wales, Herefords preserved their reputation as “kindly feeders,”<sup>52</sup> in Lancashire, their qualities of “quick feeding and the hardiness of their constitution.”<sup>53</sup> In each new place, remote or near, their “admirable properties” endured, the breed neither “degenerating” as was so often the Shorthorn’s lamentable tendency, nor evolving (so it then seemed) away from its desired traits.<sup>54</sup>

*In search of greener pastures*

Evidence from within the United Kingdom of the Hereford’s enduring qualities was encouraging, but the breed’s remarkable transposability—that perfect balance between stability of type and adaptability to location—found its fullest expression beyond the

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<sup>52</sup> William Youatt, *Cattle: Their Breeds, Management, and Diseases* (London: Baldwin and Cradock, 1834), p. 32.

<sup>53</sup> “Hereford Cattle,” *Maitland Mercury* (1885), p. 21.

<sup>54</sup> *Ibid.*

shores of the British Isles. As the conditions of production and consumption developed over the course of the nineteenth century, new opportunities for purebred British breeds arose in such faraway places as the North American west, Australia, New Zealand, and the independent states of South America, especially Argentina and Uruguay. These diverse environments and the more extensive system of husbandry there pursued tested the Hereford, offering a wider range of terrain for which the breed could prove its suitability.

These external opportunities resulted from the changing context of imperial meat production in the mid-nineteenth century. The same forces that impelled the production of Great Britain's mutton in New Zealand (Chapter 4)—industrialization, population growth, the rise of the middle class, steam transport—also induced Britons to seek out alternative sites of beef production. Population growth and the perception that domestic agricultural production had stagnated led to an atmosphere of anxiety surrounding the availability of “animal food” in mid-nineteenth-century Britain. Duckham, then editor of the *Herd Book of Hereford Cattle* and one of the breed's most energetic promoters, observed that “the dietary habits of a rapidly increasing and prosperous population daily extend the demand for meat on the one hand.” But on the other hand, “the meat producing area” in Great Britain was “annually reduced by the construction of railways, opening of mines, establishment of manufactories, and the extension of cities and towns.”<sup>55</sup> Agricultural production was being squeezed by the very forces that were driving up domestic demand, and by the 1860s, it felt as though the situation had reached a tipping point.

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<sup>55</sup> T. Duckham, “A Lecture on the Breeding and Management of Hereford Cattle” (Hereford: The “Times”, 1869) p. 3. Reprinted in T. Duckham, *Eyton's Herd Book of Hereford Cattle*, vol. 7 (Hereford and London: Longman and Co., 1869). Paper originally given at the Breconshire Chamber of Agriculture, 2 January 1869.

While meat production at this time was doing relatively well in comparison to the rest of British agricultural production (Chapter 4), domestic supply had nonetheless begun to fall short of demand,<sup>56</sup> and as the population grew, so too did demand, especially with the increase in purchasing power brought about by a second wave of industrialization. Rising wages meant that British consumers were increasingly able to satisfy their carnivorous cravings.<sup>57</sup> By the 1880s, “England [was] so rich,” remarked a journalist for the *Saturday Review*, “that the number of persons who want legs of tender well-fed mutton and soft juicy steaks is unlimited.”<sup>58</sup> Episodes of adverse weather, resulting in poor harvests, the loss of fodder crops, and zoonotic disease outbreaks in the mid-1860s, only exacerbated rising prices, contributing to the “demographic malaise” and high mortality that swept Great Britain’s livestock population.<sup>59</sup>

Public panic over the possibility of a “meat famine” in mid-Victorian Britain played out differently for beef than it did for mutton. While Britain turned towards its distant colonies for supply of frozen mutton (Chapter 4), when it came to beef, sources were more proximate and more varied. The readiest solution was to import live cattle from foreign countries to make up for this deficit, lest the nation, “like poor old canine-kindly Mother Hubbard, [find] the cupboard bare.”<sup>60</sup> Not all foreign beef was created equal, though, and the closer the source to Britain—in terms of culture and economy rather than,

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<sup>56</sup> Richard Perren, *The Meat Trade in Britain, 1840-1914* (London and Boston: Routledge and Kegan Paul, 1978), p. 3. Domestic meat production grew at the modest rate of 1.5 percent per annum over the second half of the nineteenth century. E. J. T. Collins, “Rural and Agricultural Change,” in *The Agrarian History of England and Wales*, edited by Joan Thirsk, V7, 1, 1850-1914, p. 116.

<sup>57</sup> David M. Higgins, “‘Mutton Dressed as Lamb?’ The Misrepresentation of Australian and New Zealand Meat in the British Market, c. 1890-1914,” *Australasian Economic History Review* 44, no. 2 (July 2004), p. 175-6.

<sup>58</sup> “American Meat,” *Saturday Review* (31 December 1881), p. 812.

<sup>59</sup> Collins, “Rural and Agricultural Change,” p. 98, 109.

<sup>60</sup> J. R., “Foreign and Irish Live Stock and Disease,” *Livestock J*, 2 (11 June 1875), p. 187.

necessarily, geography—the better. Ireland was the preferred exogenous source of livestock and beef for British consumption for the first two-thirds of the century. By the 1860s, it had become the “backbone of the English fatstock industry,” and “Britain was said to be draining the Continent of every head of stock that could be spared.”<sup>61</sup> In material terms, this amounted to as many as 700,000 cattle entering Great Britain through London, Liverpool, Hull, and other major port cities over the course of the 1860s. Still only three to five per cent of the total meat consumption for Britain during this decade, it was nonetheless a marked rise in the consumption of imported meat from absolutely nil less than twenty-five years previously,<sup>62</sup> and the proportion of foreign meat consumed by Britons only continued to rise, already reaching 41% of total consumption by 1875.<sup>63</sup>

Europe and the Americas constituted a second and third source of foreign supply. Great Britain eventually drew shipments of livestock, and later of chilled dead meat, from the United States, Canada, and South America, especially Argentina, but the United States was first in the establishment of a transatlantic cattle trade, and it remained the most consequential through the nineteenth century.<sup>64</sup> European live cattle imports outweighed their American counterparts until the early 1880s, but to British observers the United States brimmed with potential.<sup>65</sup> The vast grasslands of the prairies, so broad and fertile, seemed destined to “grow the cattle for the shambles of the world,” while the existing rail,

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<sup>61</sup> Collins, “Rural and Agricultural Change,” p. 111; E. J. T. Collins, “Food Supplies and Food Policy,” in *The Agrarian History of England and Wales 1850-1914*, edited by Joan Thirsk, vol. 7, 1 (2000), p. 35. Ireland occupied an uneasy position in the trade and was only inconsistently considered a “foreign” source of meat.

<sup>62</sup> *Ibid.*

<sup>63</sup> Perren, *Meat Trade*, p. 153. Consumption of foreign sheep meat stood at 45% in the same year.

<sup>64</sup> *Ibid.*, p. 114.

<sup>65</sup> *Ibid.*, p. 131. The United States surpassed European imports with 204,467 to 182,572 live cattle in 1880, fell as low as 80,023 to 261,055 in 1882, rose again to surpass European imports in 1885 with 206,350 to 164,936, and remained ahead of Europe for the rest of the century. *Ibid.*, p. 131, 164.



slaughter, and refrigeration infrastructure connecting the midwestern plains with eastern ports promised to supply beef in plenty, whether on the hoof or on the hook.<sup>66</sup> The American west and midwest were a draw for private capital and joint stock companies, but they promised more than a safe return on British investment.<sup>67</sup> They were hailed as an opportunity to extend Britain's pastureland, metaphorically and economically, if not necessarily politically. Much like colonial New Zealand, the "natural advantages" of the prairies (which seemed to have a "special adaptation...to stock-raising") suggested they could be turned into offshore loci of the production of British meat for British consumers.<sup>68</sup> In the right hands, the great inland sea of grass that stretched from Nebraska to the Canadian west could "bring into the market a part of the country hitherto regarded as barren and unfruitful."<sup>69</sup>

This was no less true of the Argentinian pampas, or the Canadian prairies (which actually were under Great Britain's political aegis), and in all cases, their potential rested on the same kind of technological proximity that brought the pasturelands of New

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<sup>66</sup> "Hereford Cattle," *South Australian Register* (14 December 1877), p. 3. Environmental historians have examined the significance of the development of this industry for American industry, and its ecological consequences. See, in particular, William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York and London: W. W. Norton & Company, 1991); Richard White, *Railroaded: The Transcontinentals and the Making of Modern America* (New York and London: W. W. Norton & Company, 2011). Belich, too, explores the role of British capital as a key component of the "software" that enabled the expansion of the Anglo world. Belich, *Replenishing the Earth*, pp. 114-120.

<sup>67</sup> Grundy, p. 72. The *Quarterly Review* noted in 1887 that during the North American ranching boom of the early 1880s, many "British 'tenderfeet' were induced to invest a great deal of capital in the business," and according to Don Worcester, the Prairie Cattle Company of West Texas was "the mother of the British companies," and "partly responsible for triggering Britons' hasty and incautious investment in ranching ventures in the late 1870s and 1880s." "Our meat supply," *Quarterly Review* (July 1887), p. 49; Donald E. Worcester, *The Texas Longhorn, Relic of the Past, Asset for the Future* (College Station: Texas A & M University Press, 1987), p. 57.

<sup>68</sup> "English Stock in Kansas," *Livestock Journal* (12 November 1875), p. 688.

<sup>69</sup> *Ibid.*

Zealand's South Island into the productive orbit of London.<sup>70</sup> As the *Livestock Journal* boasted, Kansas was a mere day's rail journey from Denver or Kansas City, New York was "only sixty-two hours" distant, and the traveller may breakfast at the Langham Hotel, London, in less than fourteen days after leaving."<sup>71</sup> The journey was no greater, in terms of time or distance, for cattle shipped from this region, only they, of course, would constitute rather than consume meals in London hotels. Without steam transport, the vast tracts of land where "the meadow grasses of England are congenial to the soil, and time will make the pasture as rich as any old pasture in England,"<sup>72</sup> would remain untapped, the haunts of Indians and bison rather than the productive landscape of cattle husbandry.<sup>73</sup>

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<sup>70</sup> Steam transport first brought the prairies into the productive orbit of American metropolises—New York, Chicago, etc. Their extension to London was both coeval and dependent with this development. Belich examines the global dimensions of these developments in detail. See Cronon, *Nature's Metropolis*; White, *Railroaded*; James Belich, *Replenishing the Earth: The Settler Revolution and the Rise of the Anglo-World, 1783-1939* (Oxford: Oxford University Press, 2009).

<sup>71</sup> "English Stock in Kansas," p. 688.

<sup>72</sup> W. H. Sotham, "Colonial Agriculture," *Farmer's Magazine* 55 (January 1879), p. 21.

<sup>73</sup> To contemporary American observers, transforming prairies into pasture promised profit, but the cost of this endeavor, as any number of environmental historians have shown, was irrevocable ecological and social change. See especially Andrew C. Isenberg, *The Destruction of the Bison: An Environmental History 1750-1920* (Cambridge and New York: Cambridge University Press, 2000), and Karl Jacoby, *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation* (Berkeley: University of California Press, 2001), for the more immediate ecological consequences in the nineteenth century. For some of the long-term ecological consequences of converting the prairies to farm and pasture land, see Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (New York: Oxford University Press, 1979). Terry G. Jordan sees in the transition to cattle ranching, a romanticized way of life being instituted at the expense of Native Americans. Terry G. Jordan, *North American Cattle-Ranching Frontiers: Origins, Diffusion, and Differentiation* (Albuquerque: University of New Mexico Press, 1993), p. 7.

*By hook or by hoof*

American producers soon began to make good on the potential of the prairies for both domestic consumption and export to Great Britain.<sup>74</sup> In the 1870s, American beef began to fill the decks and holds of the steamships that plied the North Atlantic, first on the hoof, then, in increasing volumes, on both hoof and hook.<sup>75</sup> The trade began in 1868 with an experimental shipment of 88 cattle that landed in Glasgow.<sup>76</sup> After a lapse of five years in which no live imports from North America reached Britain, it resumed again, growing exponentially in the early years, from 402 cattle landed at Liverpool and London in 1873, to over 200,000 ten years later.<sup>77</sup>

By 1885, these numbers translated to a “vast display of American beef” in London and Liverpool, an “astonishing feature in the Metropolitan markets.”<sup>78</sup> Though “the quality varie[d] more than in home bred sorts,” observers applauded “how care in selection and classification helps in passing it into the shops of all classes of butchers, and into the households of all classes of people.”<sup>79</sup> Against the enormous imports from America, “prime Scotch cattle...[were] but drops in the bucket,” according to the *Livestock Journal and Fancier’s Gazette*.<sup>80</sup> Unlike the antipodean mutton trade, where the greater distance between colonial pastures and metropolitan tables precluded live shipment of sheep, live

<sup>74</sup> Cronon’s analysis of the processes and consequences of the commercialization of agriculture in the American west and midwest is the most comprehensive; Jordan’s analysis of cattle ranching the most detailed by region. See Cronon, *Nature’s Metropolis*; Jordan, *North American Cattle-ranching Frontiers*.

<sup>75</sup> The favorable rates on North Atlantic freight, as well as the ease of finding cargo for the return trip to Montreal or New York, had a material influence on the development of the meat trade between North America and Great Britain. See C. Knick Harley, “Steers afloat: the North Atlantic meat trade, liner predominance, and freight rates, 1870-1913,” *Journal of Economic History*, 68, no. 4 (December 2008), pp. 1028-1058.

<sup>76</sup> Perren, *Meat Trade*, p. 114.

<sup>77</sup> *Ibid.*

<sup>78</sup> “London Dead Meat Market,” *Livestock Journal* (6 February 1885), p. 130.

<sup>79</sup> *Ibid.*

<sup>80</sup> “London Dead Meat Market,” *Livestock Journal* 21 (6 February 1880), p.130.

imports from America were preferable to beef imported chilled or frozen, which began to reach Great Britain in the autumn of 1875. Despite the logistical and hygienic advantages of the dead meat trade (imported dead meat posed less of a risk to the health of British herds than did live cattle), live imports continued largely because the purveyor of home-killed American beef did not “encounter the same consumer prejudice... found against the chilled article.”<sup>81</sup>

But while the quantities and displays of American beef astonished observers in Great Britain, consumers found the quality of American imports less than satisfactory. Reports varied, but a journalist for the *Livestock Journal* spoke for many when he reported that much American beef—whether on the hoof or imported as dead meat—fell “far below our standard.”<sup>82</sup> Once again, the strength of the connection between breed, quality, and the “discerning British palate” proved a challenge to the overseas expansion of Britain’s pastures.<sup>83</sup> Such was the preference for British meat that, according to one industry expert, “a great many people... would rather eat a tough steak from some old cow or bull, provided it was killed in this country, than a tender juicy and flavoursome meal of the primest [sic] pedigree-bred” imported beast.<sup>84</sup> While markets for meat of all kinds—fresh or frozen, foreign or home-grown—were diverse, and consumer tastes and purchasing power varied by class and income, the perception that Britons remained “exceptionally fastidious in [their] tastes for butcher meat” prevailed in the 1870s and 1880s.<sup>85</sup> Providing “the class of

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<sup>81</sup> By 1890, US chilled imports stood at 1.7 million hundredweights, while live imports had risen to 384, 639. Perren, *Meat Trade*, p. 116, 170, 164.

<sup>82</sup> “Wyoming Cattle,” *Livestock Journal* (13 February 1885), p. 147.

<sup>83</sup> King, “Traditional British Breeds,” p. 27.

<sup>84</sup> R. Ramsay, ‘The World’s Frozen and Chilled Meat Trade,’ in *The Frozen and Chilled Meat Trade: A Practical Treatise by Specialists in the Meat Trade* (London: Gresham, 1929), p. 5.

<sup>85</sup> “Wyoming Cattle,” p. 147.

meat calculated to satisfy these tastes,” moreover, took the same skill and forethought when it came to beef as it had in the case of mutton.<sup>86</sup> A writer for *Chambers's Journal of Popular Literature, Science and Arts* spoke for many Britons when he wrote that “unless the Americans send first-rate meat, they need not send it at all.”<sup>87</sup>

American beef initially failed to meet the standard of British consumers partly because of the challenges necessarily presented by the hardships of a sea voyage. During an Atlantic crossing, the animals were almost guaranteed to lose weight and “condition.” Even after regulations regarding adequate care and housing for the duration of the transatlantic voyage were put into place on both sides of the ocean, the risk of injury to live cargo or of fatality remained high.<sup>88</sup> The result was an almost unavoidable deterioration of the flesh of American beasts, before they even reached dockside shambles in Liverpool or London.<sup>89</sup>

But the inferiority of American beef, by British calculation, was more than could be accounted for by a difficult oceanic crossing. Its substandard quality came down to breeding—or rather, to a lack of breeding. Britons were impressed and pleased by the sheer numbers of beasts the American cattle industry was able to send, but not with the obvious lack of refinement that marked these animals. Most of the United States’ exported cattle came from West of the Mississippi River, and while eastern states in many cases had

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<sup>86</sup> *Ibid.*

<sup>87</sup> “Imported Beef and Mutton,” *Chambers's Journal of Popular Literature, Science and Arts* (21 April 1877), p. 254.

<sup>88</sup> Perren, *Meat Trade*, p. 115.

<sup>89</sup> Not even slaughtering and chilling prior to shipment entirely eliminated the risks of the voyage. Contemporary observation suggested that “the meat from animals slaughtered on their arrival in Liverpool is better than the dead meat imported from America, because the dead meat has suffered inevitable injury from being knocked about during its transport across the sea.” “American Meat,” *Saturday Review* (13 December 1881), p. 812.

reasonably well-established pedigree breeding cultures, much of the rough and ready west did not.<sup>90</sup> In contrast to the stratified and highly developed world of pedigree cattle breeding in Britain, a recent study notes that what motivated American cattle men “was not status but money.”<sup>91</sup>

Combined with the expedience that the need to stock large tracts of land demanded,<sup>92</sup> this meant that the western “*ranche*” cattle were decidedly inferior to British breeds, and the “quality of their beef,” by extension, was “naturally inferior.”<sup>93</sup> Assorted types and “animals of uncertain or mixed ancestry”<sup>94</sup> predominated, many of which were what British observers called “unimproved natives,”—often the feral or semi-feral descendants of animals brought over with European settlers in prior centuries.<sup>95</sup> The worst among these were the “Texas type,”<sup>96</sup> which were nearly feral descendants of “beeves of the Spanish type” that had been roaming what is now the American southwest and Mexico since the sixteenth century.<sup>97</sup> As beef cattle, they epitomized the inefficient, big-framed unimproved “native” type. These animals were disfigured by their “long, spreading, half-turned-back horns,” and hampered from making good beef by their “long legs, thin, lanky bod[ies], big, ill-put-together, ill-balanced bones...thin thighs, and light waists.”<sup>98</sup>

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<sup>90</sup> Derry, *Bred for Perfection*, p. 34.

<sup>91</sup> Grundy, “Hereford Bull,” p. 87.

<sup>92</sup> Joan Grundy remarks that ranges were “stocked...at a phenomenal rate” in the 1880s. *Ibid.*, p. 73.

<sup>93</sup> James MacDonald, *Food from the Far West* (London and Edinburgh: W. P. Nimmo, 1878), p. 268.

<sup>94</sup> Grundy, “Hereford Bull,” p. 73.

<sup>95</sup> “The American Cattle and Dead Meat Industry,” *Livestock Journal* (30 January 1885), p. 102. For the history of livestock animals in colonial America, see Virginia DeJohn Anderson, *Creatures of Empire: How Domestic Animals Transformed Early America* (Oxford and New York: Oxford University Press, 2004).

<sup>96</sup> W. H. Sotham, “Colonial Agriculture,” *Farmer’s Magazine* 55 (January 1879), p. 21.

<sup>97</sup> “American Cattle and Dead Meat,” p. 102; Worcester, *Texas Longhorn*; Jordan.

<sup>98</sup> MacDonald, *Food from the Far West*, p. 268. Even Worcester concedes that the “old-time Longhorns” were “not the most handsome of bovines.” Worcester, *Texas Longhorn*, p. 4.

For James MacDonald, a Scottish expert in cattle breeds, American types were “too inferior” to British breeds to rate on the Home market.<sup>99</sup> Even compared to the more headstrong of the British, the mongrel herds of America were unrefined and ill-mannered. To those accustomed to more placid breeds like the Shorthorn, they were positively wild. W. H. Sotham, visiting a farm in Abilene, Kansas, from Britain was happy to report that the fattening steers he saw there were “of fair marketable quality,” but when he entered their paddock to get a better glimpse of them, “they all ran off in a body like deer.”<sup>100</sup> And they were as uncouth in appearance as they were wild in behavior. Common American “prairie cattle” were “coarse, unimproved,” and “ill-cared-for,”<sup>101</sup> while the backs of Texan cattle were “too truly of the Gothic style of structure to carry a large quantity of roasting beef.”<sup>102</sup> According to one visitor to Wyoming, “no greater delusion could be indulged than to suppose that the Western ranche cattle are capable of producing the class of meat which brings a paying price” in Britain.<sup>103</sup> Not even British ingenuity was a match for the unseemly “native” cattle: “When fattened with the best of our skill,” lamented the *Livestock Journal*, “their beef would still be of a secondary quality.”<sup>104</sup>

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<sup>99</sup> Ibid, p. 268.

<sup>100</sup> Sotham, “Colonial Agriculture,” p. 21.

<sup>101</sup> “Wyoming Cattle,” p. 147.

<sup>102</sup> MacDonald, *Food from Far West*, p. 268-9.

<sup>103</sup> “Wyoming Cattle,” p. 147.

<sup>104</sup> Ibid.

*Making the grade*

This prediction held for much of the nineteenth century: even as the volume of the trade grew, the prices realized remained below prime Scottish, English or Welsh beef. In the 1870s, American meat sold for 1d. to 2d. less per pound than “medium home sorts.”<sup>105</sup> By the first years of the twentieth century, though, home-killed American and Canadian beef had surpassed second quality English, and was close on the heels of prime English. In 1905, North American port-killed beef sold for 48s. per hundredweight, English first and second class beef claiming 50s. 6d. and 46s. 6d., respectively—a difference of less than 1d. per pound. By 1908, the gap had closed even further. The best North American beef now sold for 53s. 6d., English first class for 54s., and second for 50s. 6d.<sup>106</sup>

The amelioration in quality that this actual and relative rise in price reflects vast and widespread efforts to “grade up” American cattle. Except for the existence of limited and well-contained collections of purebred herds in places like New York, Kentucky, and Ontario, throughout most of the continent, existing herds were little more than a hodge-podge of undistinguished types. By importing purebred British bulls to use on their “unimproved native” cows, North American stockowners could raise the quality of their beef, the sires imparting characteristics like size, bulk, and early maturity, and in so doing, bring the standard of American herds closer to that “refined, and what the Americans would call a very highly graded variety of cattle.”<sup>107</sup> “Care and judicious breeding during the last three-quarters of a century,” had brought about a manifest “improvement of cattle”

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<sup>105</sup> “Imported Beef and Mutton,” *Chambers’s Journal*, p. 254.

<sup>106</sup> Perren, *Meat Trade*, p. 160.

<sup>107</sup> “Wyoming Cattle,” p. 147.



in America, according to one writer for the *Livestock Journal*.<sup>108</sup> As his colleague reported, “the people of Canada are becoming alive to the fact that it would be no difficult matter to double or treble the value and productiveness of their stock by improving the breeds and by bestowing due care upon them.”<sup>109</sup> Much as their contemporaries in New Zealand recognized with respect to the frozen meat trade, American stockmen saw the benefit of catering to the export market by taking seriously the connection that existed for British consumers between breed, quality, and discerning taste.

The combined efforts to raise the level of breeding in Canada, the United States, and South America together stimulated the growth of an enormous export market for pedigreed British bulls. Initial enthusiasm was for Shorthorn blood, which promised to increase the size and elevate the character of the mongrel herds of the Americas, not least because ranchers in the mid and far west were able to draw on existing purebred herds in Kentucky, Missouri, and Kansas.<sup>110</sup> Success on this front was forthcoming in America’s corn belt, where the supplemental grains the Shorthorn needed to thrive were plentiful. In the well-settled east, the Shorthorn did much to improve American (and Canadian) cattle.<sup>111</sup> Numerically, it dominated recorded pedigrees in the United States, constituting 58 per cent of all registered purebred cattle as late as 1884.<sup>112</sup> And by the mid-1880s, it

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<sup>108</sup> “The American Cattle and Dead Meat Industry,” *Livestock Journal* 21 (30 January 1885), p. 102.

<sup>109</sup> “Stock for Nova Scotia,” quoted from the *St. John Daily Telegraph* in *Livestock Journal* 2 (19 November 1875), p. 718.

<sup>110</sup> Worcester, *Texas Longhorn*, p. 65. Shorthorns and Herefords were introduced to the United States in the 1820s, Aberdeen-Angus cattle in the 1860s. Shorthorns “made the earliest headway with rapid expansion in the eastern states between 1866 and 1878.” Grundy, “Hereford Bull,” p. 74.

<sup>111</sup> Margaret Derry, *Ontario’s Cattle Kingdom: Purebred Breeders and their World, 1870-1920* (Toronto: University of Ontario Press, 2001).

<sup>112</sup> The entire number of cattle sold at auction in the United States in the year 1884 was approximately 7,500, 4,383 of which were Shorthorns and only 314 of which were Herefords (although that was up from 112 the year before). “Herd Intelligence,” *Livestock Journal* 21 (23 January 1885), p. 81.

seemed to have had a perceptible effect on the quality of American meat that reached British markets. A Shorthorn advocate writing for the *Farmer's Magazine* confirmed that the “value of the breed” overseas was “incalculable”:

To judge from the American beef, alive and dead, which finds its way here, it will be only fair to suppose that the improvement in American cattle during that time must be almost entirely due to its agency. The leavening influence of this blood has spread over the greater part of an immense continent, and clothed its semi-wild cattle with marketable beef.<sup>113</sup>

In so doing, it brought “every inferior and mongrel-bred kind of stock” found in America closer to that standard demanded by the “exacting” British palate.<sup>114</sup>

Despite their initial numeric dominance, Shorthorns proved to be too delicate for the extensive ranching system developing in the grasslands of western North America, Australia, and Argentina.<sup>115</sup> In the pastoral systems of the new worlds, large herds of cattle were often required to “out winter” in the mountains, or to survive the heat of a Texan or Australian summer with less attention than they would have received in Great Britain, and to roam relatively far for their feed.<sup>116</sup> And in the rougher conditions of new world beef farming, the breed’s failings quickly came to light. Shorthorns required “rich food at all times, rich loamy soils, and to be well sheltered.”<sup>117</sup> Abroad, too, they suffered from many of the same problems of overbreeding that they did in Britain (Chapter 3). Just as British breeders had, in their great enthusiasm for “fashionable pedigrees,” been induced to

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<sup>113</sup> “Cattle of the Various Breeds as Beef Producers,” *Farmer's Magazine* 55 (February 1879), p. 99.

<sup>114</sup> *Ibid.*

<sup>115</sup> Grundy, “Hereford Bull,” p. 74. Worcester recounts the story of an early effort to import “blooded stock” to Texas, in which a cattleman had two cows and a bull of the Shorthorn breed hauled in wagons from the port of New Orleans. Another rancher was said to have remarked on the occasion that “a man has no business with cows that can’t light out and walk from New Orleans.” Worcester, *Texas Longhorn*, p. 62.

<sup>116</sup> Jordan, *North American Cattle-Ranching Frontiers*, p. 7-10.

<sup>117</sup> “Remarks and Observations on Different Sorts of Cattle,” *Agricultural Magazine* 7 (November 1810), p. 325.

overlook form and constitution, the “Shorthorn mania” in the United States had generated similar hazards. But while British breeders so carefully balanced quantities of flesh upon delicate frames, Americans looked to “great size, regardless of symmetry, quality, and compactness,” complained a writer for the *Farmer’s Magazine*.<sup>118</sup> And they, too, fell under the sway of the pedigree. Naming one of the most famous and most controversial Shorthorn bloodlines, W. H. Sotham lamented that “a Duke, no matter how long and coarse his legs, how deep his flabby brisket, how thin his hide or slack his crops, or how extended his paunch, was in great request” among American stockmen.<sup>119</sup>

The problem with Shorthorns, moreover, was not particular to the Americas. In Queensland, Australia—one of the few dedicated beef producing regions of the “southern continent”—one stockman had “great difficulty [in] getting bulls of a good hardy constitution, with the appearance of bulls about them, instead of a feminine look. With few exceptions,” he complained, “‘quality’ seems to be the aim of breeders, which ends in ‘delicacy,’” and like Shorthorns elsewhere, many of those in Australia were “bred from a long line of over-fed stock, and reared on over-stocked country,” ultimately becoming “deficient in everything except quality.”<sup>120</sup> The pinnacle of refinement in Great Britain, Shorthorns failed to thrive abroad, where the harsh conditions of extensive agro-pastoralism that characterized London’s imperial and quasi-imperial hinterlands made the “quality” that distinguished them at home a disadvantage.

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<sup>118</sup> Sotham, “Colonial Agriculture,” p. 21.

<sup>119</sup> *Ibid.*

<sup>120</sup> “Hereford Cattle,” *Brisbane Courier* (1882), p. 3.

*The Redcoats are coming*

Unlike Shorthorns, Herefords appeared to display just the right proportion of fixity relative to adaptability for the realms of beef production opening up in the “neo-Europes” of nineteenth-century colonialism. Even if Shorthorns did “monopolise the whole face of the country in the British Isles to-morrow, and the Hereford breed [were] to be universally expelled,” wrote the *Livestock Journal* in 1875, “there would still be ample room for the propagation of the latter in America and the British Colonies, many spacious tracts offering themselves both across the Atlantic and at the Antipodes, for which no other kind of stock are so well adapted.”<sup>121</sup> Indeed, diversity of environment and extremity of climate seem to have posed little obstacle to the breed. In Jamaica, where “the temperature in the summer stands at 90 degrees in the shade,” they withstood tropical heat with such ease that even “half-bred” animals were so superior, “you would scarcely suspect [them] as being any other than pure breeds.”<sup>122</sup> At the same time, the breed was well-suited to the long winters and “very changeable” climate of western Ontario: one Canadian enthusiast deemed them “most profitable for the western prairies.”<sup>123</sup> They were also “taking firm root in South America,” and “in the Australian Colonies,” the Hereford breed was often “preferred at the Antipodes to any other.”<sup>124</sup>

Breeders in the United States found Herefords no less suited to their requirements than did those in Jamaica, Ontario, or Australia. In the 1880s, they rapidly supplanted the

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<sup>121</sup> “Hereford Cattle,” *Livestock Journal* 2 (12 November 1875), p. 689.

<sup>122</sup> J. Edwards, quoted in Duckham, “History, Progress, and Comparative Merits,” p. 29.

<sup>123</sup> F. W. Stone, quoted in *Ibid.*, p. 28.

<sup>124</sup> “Among the Herefords: Current Notes,” *Livestock Journal* 21 (8 May 1885), p. 446; “Hereford Cattle,” *Livestock Journal* (1875), p. 689.

Shorthorn breed as the preferred type for crossing or “grading up” the mongrel herds of native cattle in the United States.<sup>125</sup> With Shorthorns, Herefords had been imported to the United States in the 1820s, but remained largely confined to the eastern states until the 1870s.<sup>126</sup> By this time, the breed “had obtained a good footing” in Colorado, and according to a journalist writing in the early 1880s, they had “made more rapid progress in the public favor at the West in the last five years, than was ever made by any other breed of cattle in America in the same [amount of] time.”<sup>127</sup> In “the western pasturelands of Nebraska, Wyoming, Western Kansas, Eastern Colorado, and western Texas,” an “interest in Herefords” was “awakening,” and by the 1880s, “our keen commercial cousins across the Atlantic,” according to the *Livestock Journal*, had “discovered that pure-bred Hereford bulls are the best sires for improving their native stock.”<sup>128</sup> In short order, the “leavening influence” of Hereford “blood” was proving to be even more elevating than that of the Shorthorn.<sup>129</sup>

The dominance of the Hereford is all the more remarkable for the ecological range it mastered. As Terry G. Jordan notes, the ecologies of the grazing regions of the nineteenth century were diverse, ranging from “tropical savannas to subtropical pine barrens and midlatitude prairies, from fertile lowland plains to rugged mountain ranges, from rainy districts to semideserts.”<sup>130</sup> In North America alone, cattle country in the latter decades of the nineteenth century comprised mountains and foothills, plains, grasslands, the semi-arid

<sup>125</sup> Grundy, “Hereford Bull,” p. 76.

<sup>126</sup> Derry, *Bred for Perfection*, p. 34; Jordan, *North American Cattle Ranching Frontier*, p. 201; Grundy, “Hereford Bull,” p. 72.

<sup>127</sup> “Hereford Cattle,” *South Australian Register* (1877), p. 3; “Hereford Cattle in America,” *The Maitland Mercury & Hunter River General Advertiser* (26 May 1883), p. 6.

<sup>128</sup> “The Hereford Cattle Trade in America,” *Livestock Journal* 21 (30 January 1885), p. 101.

<sup>129</sup> “Cattle of the Various Breeds as Beef Producers,” *Farmer’s Magazine* 55 (February 1879), p. 99.

<sup>130</sup> Jordan, *North American Cattle-Ranching*, p. 9.

reaches of Texas, and the humid lowlands of the Carolinas. In Australia, cattle dominated the subtropical region of Queensland at the very north of the continent, and were also found among the colonies' flocks of sheep in the "semidesert" conditions that prevailed throughout.

According to late-eighteenth century opinion (Chapter 1), and in keeping with established notions about the ways in which environment shaped type, the suitability of the Hereford—a breed "native to a temperate, well-watered English shire" eventually "[rose] to dominance"—to such a range of conditions would indeed be arresting. For Jordan, it is "one of the unexplained mysteries" of cattle-ranching in the nineteenth century.<sup>131</sup> But by the last quarter of the nineteenth century, livestock breeders perceived that the balance between the relative influences of heredity, environment, and human selection had shifted towards the latter. Decades of "improvement"—careful management, "judicious" selective breeding—had crafted the Hereford, like other British breeds, into something more nearly approximating artifice than natural fact. Emphasis on the way Hereford cattle "retained their character" celebrated this apparent triumph of human will. Its success overseas in spite of, or perhaps because of, topographical diversity, climatic variance, and unfamiliar systems of husbandry, was testament to its concurrent adaptability and durability under nearly any circumstances.

The "badge" of the breed—its signature white face and red coat—bolstered its claim to universality in the 1870s and 1880s, just as it had supported breeders' assertions of purity of descent at mid century (Chapter 3).<sup>132</sup> The dominance of this trait gave visual

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<sup>131</sup> Jordan, *North American Cattle-Ranching*, p. 274

<sup>132</sup> Grundy, "Hereford Bull," p. 71.

confirmation that a Hereford bull had been “at work” in a herd—an especially valuable attribute prior to the widespread adoption of barbed wire in the late-1880s.<sup>133</sup> Until this point (and indeed, for some time thereafter), pastures remained unfenced, making containment of a portion of a herd for selective mating impractical. It also rendered close observation at this crucial phase of the productive cycle, and subsequently during calving, equally improbable, meaning that cattlemen would have little assurance that a pedigree bull purchased for the purposes of upgrading an undistinguished herd had in fact performed his duties—unless, that is, the bull in question was a white-faced bull who “color-marked” all of his offspring with the same trait, regardless of the coat color of the dam.<sup>134</sup> In the extensive conditions of beef production that sprang up in the new worlds, the white face thus became a most important proof of parentage for grade beef cattle, and a guarantee of the elevating influence of improved British blood.

Importantly, the Hereford breed excelled at ameliorating the quality of the beef new world cattle produced without sacrificing the hardiness or self-sufficiency of rangeland herds so necessary to their survival. In this regard, Australia offered perhaps the truest test for the breed. While the Shorthorn was no match for the arid “brown continent,” the Hereford’s particular combination of hardiness and docility appealed to Australian breeders. As an “active, yet most domestic animal,” Herefords were able, even in the scorching heat of Australia, to endure long marches with equanimity.<sup>135</sup> Australian cattlemen “invariably found the Herefords the best travellers,” the difference between them

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<sup>133</sup> Worcester, *Texas Longhorn*, p. 64.

<sup>134</sup> Even a quarter-bred Hereford bull color-marked its offspring. Grundy, “Hereford Bull,” p.70, 75.

<sup>135</sup> “Hereford Cattle,” *South Australian Register* (14 December 1877), p. 3.

and other breeds “being most noticeable in hot weather.” As Robert Archer, a Queensland breeder, recounted,

On a hot summer’s day, even when taken with the greatest care, a mob of Shorthorn bulls will have their tongues out in the first half-mile; and on two separate occasions I have known a Shorthorn bull to lie down and die from the heat, although they had been carefully driven.<sup>136</sup>

By contrast, Archer had “never known a Hereford bull to knock up from the heat.”<sup>137</sup> At the same time, Australian producers appreciated the Hereford’s docility. The breed was more placid and not given to the freaks of temper that afflicted Devons and Shorthorns “down under.”<sup>138</sup> Though many “accuse[d] the Herefords of rowdiness,” the “worst night smashes” Archer had heard of “[had] occurred in mobs of Shorthorns,” while Devons “want[ed] well watching,” and if anyone doubted it, a Tooloombah breeder named Beardmore invited them to “come to my yard when branding and take a hand at catching the Devon calves, and his shins will soon convince him.”<sup>139</sup>

Yet there were apparent limits to the Hereford’s suitability to all climes and all places. Morocco, for instance, confounded the breed. When Edwyn Arkwright, the brother of the prominent Herefordshire breeder John Hungerford Arkwright, tried to establish a herd of Hereford cattle in the coastal Mediterranean region of Saifia in the 1880s, his cattle dropped like flies. In July of 1885, he took up “a reluctant pen to announce the decease of the 3<sup>rd</sup> and last Hereford heifer Primrose.”<sup>140</sup> This was eighteen months after the

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<sup>136</sup> “Hereford Cattle,” *The Capricornian* (2 January 1892), p. 11.

<sup>137</sup> *Ibid.*

<sup>138</sup> Note that this perception ran counter to the majority of nineteenth-century opinion about the Shorthorn’s temperament, which was held elsewhere to be unusually placid.

<sup>139</sup> “Hereford Cattle,” *Capricornian* (1892), p. 11; Beardmore, quoted in “Hereford Cattle,” *Brisbane Courier* (1882), p. 3.

<sup>140</sup> Edwyn Arkwright to John Hungerford Arkwright, 20 July 1885. Hereford Record Office, A63/IV/21/3.



“confinement and decease of poor Cowslip,”<sup>141</sup> and Curly, who “calved a month early.” Both of the calves in question died, and Curly herself followed them “a month later of anemia.”<sup>142</sup> Finally, in 1889, Edwyn Arkwright was forced to confess to his brother “that I cannot get on with our Herefords!”<sup>143</sup>

How much of his failure was due to North African conditions, and how much to his own ineptitude was (and remains) difficult to determine. The challenges of the Moroccan climate were no doubt severe, but Edwyn faced criticism from neighbors and acquaintances “that we are not feeding them properly,” and the fact that he asked his more knowledgeable brother in 1884, “How many days are Herefords supposed to be in Calf [?]” does not inspire retrospective confidence in his abilities.<sup>144</sup> Nevertheless, whenever Herefords failed to thrive, or succumbed to extremes of climate, apparent failings could be (and usually were) laid at the feet of the breeder. Simply stated, according to a writer for the *Farmer's Magazine* in 1881, “if the Herefords do not win easily” against the Shorthorn breed in America, “it must be the breeders' fault.”<sup>145</sup> That was one of the boons of such fluid ideas about heredity and environment in the nineteenth century. The relative pull of any of the three forces that together made a type—environment, heredity, and human influence—was in constant flux, and could therefore excuse any evidence that might put a favored breed in a bad light. As the Hereford's reputation for suitability across a range of places and conditions grew, human error in particular was an increasingly convenient straw man for champions of the breed, helping to maintain its reputation for transposability.

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<sup>141</sup> E. Arkwright to J. H. Arkwright, 18 February 1884. Hereford Record Office, A63/IV/21/3.

<sup>142</sup> E. Arkwright to J. H. Arkwright, 20 July 1885. Hereford Record Office, A63/IV/21/3.

<sup>143</sup> E. Arkwright to J. H. Arkwright, 13 March 1889. Hereford Record Office, A63/IV/21/3.

<sup>144</sup> E. Arkwright to J. H. Arkwright, 13 March 1889; and 18 February 1884.

<sup>145</sup> “Various Notes,” *Farmer's Magazine* 57 (February 1881), p.116.

In spite of occasional setbacks, the dominance of Hereford cattle across the seas was growing. Herefords “quickly adjusted to range conditions and established their lasting popularity as range cattle,” according to modern commentary.<sup>146</sup> In the expansive productive regime that grew up in the Americas and Australasia, this spoke as much to its productive ability as to its climatic adaptability. New world cattle industries increasingly specialized in grass-fed beef production—a purpose for which the Hereford had always excelled beyond the Shorthorn. “No beef,” wrote a contributor to the *Farmer’s Magazine*, “is better eating than that of the Hereford when fully ripe off the grass.”<sup>147</sup>

Paradoxically, because of these productive requirements, as ever more diverse and distant tracts of land opened up, the range of breeds deemed fit to stock them narrowed. If the presiding doctrine of the late eighteenth century had been that “every soil has its own stock” (Chapter 1), in the geographically expanded pastoral context of the 1870s and 1880s, it had become more a case of one, or sometimes two or three breeds, fit all.<sup>148</sup> Climate and environment remained salient, even if they were no longer the sole factor in determining type, and rhetorically, breeders still exhorted their fellows to “seek for the cattle that suit the country.”<sup>149</sup> Breeders ought, in the opinion of one Queensland cattleman, to “notice the country and the feed, and then purchase accordingly.”<sup>150</sup> Great Britain offered an instructive case in matching type to locality for colonial Australia: “If in a small country like England different breeds suit different counties,” this fellow asked,

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<sup>146</sup> Worcester, *Texas Longhorn*, p. 67.

<sup>147</sup> “Cattle of the Various Breeds as Beef Producers,” *Farmers Magazine* 55 (February 1879), p. 99.

<sup>148</sup> William Pearce, *General View of the County of Berkshire* (London: W. Bulmer, 1794), p. 46.

<sup>149</sup> “Hereford Cattle,” *The Brisbane Courier* (13 December 1882), p. 3.

<sup>150</sup> *Ibid.*

“how is it possible that one breed can suit a continent like Australia?”<sup>151</sup> Great size, however, did not equate to great diversity. Despite its greater landmass, Australia’s microclimates varied less than those of the geographically small, but meteorologically diverse, British Isles. Still, the breeds that pastoralists sought as the century progressed were more and more often limited to the Shorthorn, Hereford, and sometimes the Devon breeds. And given the Hereford’s record for universal adaptability, it was fast becoming the one size fits all type for grasslands beef production.

*Spare the knife, spoil the herd*

All this generated a brisk market in Great Britain for Hereford bulls bred for export. Not even the global agricultural depression that “made itself felt...throughout the civilised world” in the mid-1880s could check the demand for “thoroughbred Hereford cattle” in America, according to the *Livestock Journal*.<sup>152</sup> The extent of the trade at its height went unrecorded, but it was undoubtedly great. Prior to 1880, fewer than 200 Herefords were exported to the United States; between 1880 and 1886, the volume was as many as 4000.<sup>153</sup> The Hereford Herd Book Society itself only began careful record-keeping after the trade peaked, but recorded a total of 1,259 cattle exported from Britain between 1890 and 1901.<sup>154</sup> A significant drop from the 1880-6 estimated high water mark, the volume of

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<sup>151</sup> Ibid.

<sup>152</sup> A. B., “The Hereford Cattle Trade in America,” *Livestock Journal* 21 (30 January 1885), p. 105.

<sup>153</sup> Grundy, “Hereford Bull,” p. 76. By T. L. Miller’s count in the year 1883, already by the month of July, more than 1000 Herefords had been “bot [sic] for the American trade.” T. L. Miller to J. H. Arkwright, 19 July 1883. HRO A63/IV/42/31.

<sup>154</sup> Four extant ledgers covering the period 1890-1953 are still available at the head office of the Hereford Cattle Society in the city of Hereford.

trade in the 1890s was still consequential. Almost half of these were destined for the United States (663), South America as a whole taking the next largest proportion (495), with sundry exportations to Europe (27), Canada (20), South Africa (14), Australia (12), New Zealand (7), and the West Indies (4).<sup>155</sup>

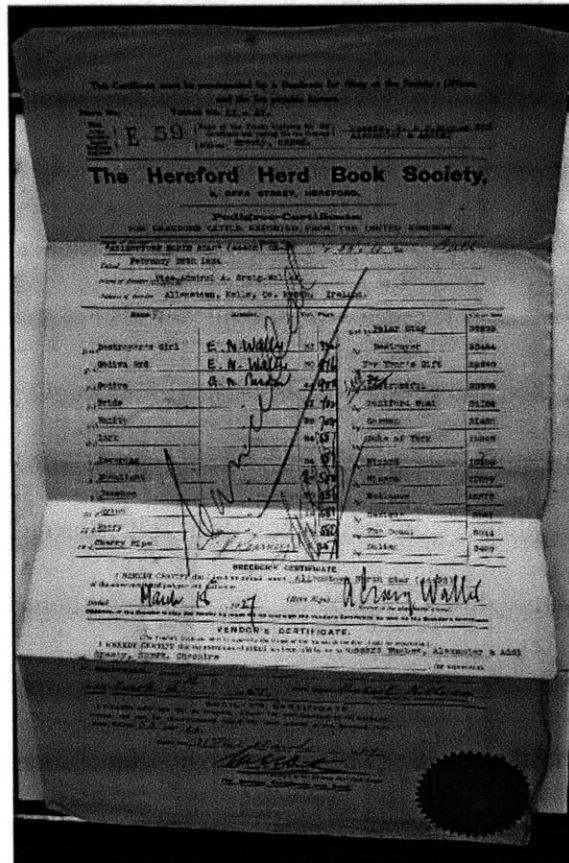


Figure 3. A cancelled 1927 pedigree-certification for the exportation of the bull Allenstown North Star, from Ireland to Australia. Hereford Cattle Breeders' Association, Hereford, UK.

The influx of Hereford cattle to the American west was astonishing. Purchasers acting on behalf of foreign cattlemen often bought large consignments of Herefords. A lot of 100 bulls, for example, was purchased “in England for shipment to the grazing regions of Buenos Ayres” in 1883.<sup>156</sup> North Americans, too, made “large purchases” in Britain,

<sup>155</sup> Export Ledger 1890-1901, Hereford Cattle Society.

<sup>156</sup> “Hereford Cattle in America,” *Maitland Mercury* (1883), p. 6.

proving to one British journalist that their “Transatlantic neighbours” had taken up Herefords “in earnest.”<sup>157</sup> Hereford bulls used to grade up the herds of the American west were also filtered through eastern states.<sup>158</sup> A single breeder, O. H. Nelson, who (according to one effusive historian) “did more than anyone else to establish the breed on the Great Plains,” brought 10,000 Herefords to western Texas in the 1880s alone, only some of which came direct from Britain.<sup>159</sup> In 1883, Charles Goodnight, “the famous Panhandle rancher,” took twenty-five bulls, 625 cows, and 400 calves—all “excellent-quality Herefords”—in a single purchase from an Illinois breeder.<sup>160</sup>

For breeders and observers on all sides of the ocean, enthusiasm for Herefords abroad contributed to its growing reputation in Great Britain. As one journalist noted, the closer the breed “approached the goal which has been so much coveted by their admirers”—that of world domination—the more breeders in the United Kingdom took note: “In America, Australia and other parts of the world the position of the breed is assured, and its ultimate complete triumph in Great Britain is only a question of time.”<sup>161</sup> And as Herefords fanned out over North and South America and Australasia, “indications that the merits of the Herefords [were] now being more recognised in [its] own country” abounded.<sup>162</sup> Although the breed’s geographic reach and numerical strength within the British Isles never matched its rhetorical profile, the “estimation in which this famous

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<sup>157</sup> “The Hereford Cattle Outlook,” *Launceston Examiner*, Tasmania (6 April 1881), p. 2.

<sup>158</sup> The same was true of the “grading up” system in Canada. See Derry, *Ontario’s Cattle Kingdom*.

<sup>159</sup> Worcester, *Texas Longhorn*, p. 68.

<sup>160</sup> Worcester, *Texas Longhorn*, p. 57, 68. Goodnight’s operation was one of the biggest in the American west, and even his acquisition of a relatively paltry forty “thoroughbred...imported” Hereford bulls was news in Great Britain. “Herd Intelligence: Herefords,” *Livestock Journal* 21 (2 April 1885), p.330.

<sup>161</sup> “Hereford Cattle,” *Maitland Mercury*, (1885), p. 21.

<sup>162</sup> *Ibid.*

stock [was] held” in places like Buenos Aires, where 159 number of cattle were exported between 1890 and 1901, aided in the Hereford “becoming fully appreciated in England.”<sup>163</sup>

But the impact of the breed’s overseas popularity in Great Britain was more than simply a rhetorical elevation in its status. The thriving export market of the 1870s and 1880s (what one historian recently called the “Yankee boom”)<sup>164</sup> had a material effect, if not so much on its distribution within the British Isles, then on how breeding was carried out and monitored there. Demonstrating and safeguarding the purity of the breed had been a challenge and a source of controversy throughout the century (Chapter 3), and it remained so in the context of sharp and persistent overseas demand for Hereford bulls. British breeders soon ran up against what appeared to be a fundamental limit to pedigree breeding: “you cannot make a new pure bred Hereford except by breeding with what we have now got.”<sup>165</sup> A seemingly reasonable observation of the point (and practice) of pedigree breeding, the truth of this statement in fact depended very much on how purity was defined. Moreover, it proved to be one that Hereford men were willing to overlook in their rush to satisfy the demands of overseas buyers.

So sudden and so intense was the demand for pedigree Hereford bulls to use in upgrading new world herds—first in the United States, and then primarily South America—that supply in Great Britain very quickly seemed insufficient to meet the demand of overseas buyers. British breeders did all they could to satisfy the heavy

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<sup>163</sup> This represents the lion’s share of the 495 total cattle exported to South America in this period, the largest single proportion after the 283 unspecified South American destinations. Export Ledger, 1890-1901, Hereford Cattle Society; Grundy, “Hereford Bull,” p. 80-81; “Hereford Cattle in America,” *Maitland Mercury* (1883), p. 6; “Hereford Cattle,” *Maitland Mercury*, (1885), p. 21.

<sup>164</sup> Grundy, “Hereford Bull,” p. 76, 86.

<sup>165</sup> Joseph Russell Bailey to John Hungerford Arkwright, 20 May 1884. Hereford Record Office, A63/IV/42/33.

demand, but supply lagged. Writing for the *Farmer's Magazine*, W. H. Sotham reported on the “numerous car-loads” of blooded bulls that were “constantly going to Texas, Colorado, Wyoming, and Montana, [and] to improve the stock on the plains.”<sup>166</sup> Increasingly, the corrective effect of this influx of improved blood was “plainly visible in the stock now coming from either of these cattle producing regions.”<sup>167</sup> More and more, the “Grade Herefords” reaching the British market met with approval, but the “demand for thoroughbred bulls” continued to exceed supply and, Sotham feared, it would fall short “until more are bred.”<sup>168</sup>

Artificial selection had the most dampening effect on the availability of bulls for export. One of the fundamental principles of selective breeding was to allow only superior specimens of each sex to procreate. Most commonly, this was enforced by drafting off unsuitable females from the herd, and by castrating substandard males. At the height of the “rage for Herefords,”<sup>169</sup> the market for “Hereford bulls of all kinds” was, according to the *Livestock Journal*, “more or less remunerative.”<sup>170</sup> The “use of the knife” to castrate substandard male specimens “[was] consequently limited.”<sup>171</sup> In their haste to meet the demands of North and South American buyers, British breeders allowed an “excessive rear of bulls,” failing to “alter” many bull calves as they ought to have.<sup>172</sup>

As the largest market by far for Hereford bulls, American breeders did not hesitate to criticize this trend. They noted, and remarked upon, the deleterious overall effect of such

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<sup>166</sup> Sotham, “Colonial Agriculture,” p.21.

<sup>167</sup> Ibid.

<sup>168</sup> Ibid.

<sup>169</sup> “Dispersion of Mr. Knight’s Herd at Leinthall,” *Livestock Journal* 21 (1 May 1885), p.425.

<sup>170</sup> Cosmo, “Among the Herefords: The Field Herd,” *Livestock Journal* 21 (15 May 1885), p. 471.

<sup>171</sup> Ibid.

<sup>172</sup> Ibid.

laxity in selection. Much to their disappointment, “inferior specimens” were continually put up for sale.<sup>173</sup> An American correspondent to the *Livestock Journal* wrote “somewhat strongly as to the character of some of last year’s exportations.” Buyers from the United States had noticed “the bad condition and defective pedigrees of several of the cattle.” It would, the correspondent declared, “be much better to steer many of the bull-calves, and put them upon the market for the butcher.”<sup>174</sup> And as another contributor to the same publication noted, the “rush has been so keen and fast for Herefords” that some breeders were “unable either to name their animals or give their pedigree.”<sup>175</sup>

### *The stain of blood*

Sparing use of the knife was one way to make “new purebred” Herefords, however inferior. Maintaining flexibility in the pedigree system was another that Hereford breeders in Great Britain were equally willing to pursue. Because purity itself was a construct, so too were the standards that governed it (Chapter 3). In the 1880s, these standards were exclusively the rules for entry into the *Herd Book of Hereford Cattle*. After 1878, when the Hereford Herd Book Society assumed control over the *Herd Book*, for any new animal, breeders were required to demonstrate at least four generations of “named Hereford blood” on the side of the sire, and three on that of the dam.<sup>176</sup> Prior to this time, while the *Herd Book* had remained in private hands—first those of Thomas Campbell Eyton (who edited

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<sup>173</sup> Cosmo, “Among the Herefords: The Field Herd,” p. 471.

<sup>174</sup> Unnamed correspondent, quoted in Cosmo, “Among the Herefords: The Field Herd,” p. 471.

<sup>175</sup> “British Breeds of Cattle,” p. 495.

<sup>176</sup> *The Herd Book of Hereford Cattle*, vol. 10 (Hereford: The Hereford Herd Book Society, 1879), p. viii.



the *Herd Book* between 1846 and 1853), and then Thomas Duckham (1854 to 1878)—little other than willingness to submit genealogical information for a given animal was a bar to entry. Truculence on the part of breeders acted as some form of selectivity: both editors struggled to eliminate the “confusion among pedigrees” (Chapter 3),<sup>177</sup> but continued noncompliance hindered their efforts, and selectivity based only on a lack of breeder cooperation was a poor standard, indeed.

The stewardship of the Hereford Herd Book Society promised better governance, but even their regulations looked sturdier on paper than they were in fact. The official purposes of the new Society in 1878 included not only the intent to collect and publish the life histories of all “thoroughbred” Hereford cattle, but to “verify...information relating to the pedigrees of Hereford Cattle,” and of equal importance, “to investigate cases of doubtful and suspected pedigrees.”<sup>178</sup> Even on the record, the Society admitted that “so careless” had many breeders been “in the matter of pedigrees,” it was “impossible, without serious injury to the usefulness of the work, to adhere with stringency” to the rules of their own making.<sup>179</sup>

At just the time at which British breeders sought ways to increase the supply of pedigreed animals available for sale and exportation, the growing popularity of the breed overseas put pressure on them to tighten entry to their herd book. The greatest pressure to patrol the quality of British pedigrees came from American breeders. When the *American Hereford Record* was established in 1880, it had “made the English Herd Book a standard,” which is to say that “such animals as were admitted” to the *Herd Book of*

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<sup>177</sup> T. C. Eyton, *The Herd Book of Hereford Cattle*, vol. 1 (London: Longman and Co., 1846), p. iii.

<sup>178</sup> *Herd Book of Hereford*, vol. 10, p. vii.

<sup>179</sup> *Ibid.*

*Hereford Cattle* in Britain and subsequently exported to the United States, were also admitted without question to the *Record*.<sup>180</sup> Despite the confidence in British standards this implied, the *American Hereford Record*'s parent organization, the American Hereford Cattle Breeders' Association, seemed conflicted about the degree to which the genealogies of their own animals relied on those of British Herefords. While they celebrated the fact that "many of the pedigrees" contained in the *Record* could be "trace[d] through English herds for one hundred years,"<sup>181</sup> they warned that this very antiquity made "absolute correctness" in their own volume hardly possible, and chose to lay out their own volume expressly "so that time will remedy these defects."<sup>182</sup>

Over time, such concerns over the apparent laxity in British pedigrees grew. Dissatisfied with "Short pedigrees"<sup>183</sup>—those animals for whom their breeders were unable to demonstrate the requisite crosses, and whose entries in the *Herd Book of Hereford Cattle* had thus been marked with a dagger<sup>184</sup>—T. L. Miller pleaded for greater care and attention on the part of British breeders. Such was the "present and prospective importance of the Hereford interest," he argued, that it was paramount "that our rules should be so framed as to give the guarantee of purity of breeding."<sup>185</sup> The most energetic and powerful voice of the American "Hereford interest," Miller felt that careful

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<sup>180</sup> *The American Hereford Record*, vol. 1 (Beecher, Ill.: Breeders' Live-Stock Association, 1880), p. 1.

<sup>181</sup> *Ibid.*

<sup>182</sup> *Ibid.* The tendency in the British *Herd Book* to "give only the dam's name and the name and number of her sire, and after carrying these dams back for three or four generations, omit the name of the dam" was criticized in the preface to the first volume of the *American Hereford Record*, despite the fact that this was in keeping with the *Herd Book*'s own rules for entry. At the same time, the editors stipulated that "the lack of further information is no discredit to the pedigree," which seemed to negate the very basis of their own complaint. *Ibid.*

<sup>183</sup> T. L. Miller to J. H. Arkwright, 21 July 1883. Hereford Record Office, A63/IV/42/31.

<sup>184</sup> *Herd Book of Hereford Cattle*, vol. 10, p. viii.

<sup>185</sup> T. L. Miller to S. W. Urwick n.d. [1883], Hereford Record Office, A63/IV/42/31.

“examinations of pedigrees” was “a duty that the managers of the Herd Book owe to the breeders,” and tempering his criticism of British standards, suggested that more attention to documentation would suffice to eliminate “the majority of short pedigrees.”<sup>186</sup>

When the American Association tightened its own rules for entry to the *American Hereford Record* in 1883, the apparent discrepancies between the management of purity on either side of the Atlantic became even more problematic. In February of that year, the American Hereford Cattle Breeders’ Association resolved to clamp down on deficient genealogies. New entries to the *Record* “and their produce” would be required to “show *first*—For the Sires of such animals, *5 Sires*; or for the dams of such animal. *4 Dams*.”<sup>187</sup> Given the nature of the export trade, and the blood ties between Hereford cattle in Britain and America, the American Association charged Miller with the task of “confer[ring] with your Society,” as he wrote in an official missive to S. W. Urwick, Secretary to the Hereford Herd Book Society, “with a view to securing uniform action as to the rules governing the Entry of Animals in your Herd Book, and the American Hereford record.”<sup>188</sup> Under the Association’s new resolution, the first thirteen volumes of the English Herd Book would remain “as a standard, unless there should appear to be errors or fraud,” but “all animals not entered in the first 13 Volumes of your Herd Book” would have to meet the new, elevated requirements, just like any American-born Hereford.<sup>189</sup>

Miller’s proposal was proffered as a polite but firm invitation to join the American Hereford Cattle Breeders’ Association in their effort to “frame” their rules “so as to give

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<sup>186</sup> Miller to Arkwright, 21 July 1883.

<sup>187</sup> *American Hereford Record*, vol. 1, p. 1.

<sup>188</sup> Miller to Urwick, [1883].

<sup>189</sup> *Ibid.*

the guarantee of purity,” but the Association’s terms left the Herd Book Society with little choice.<sup>190</sup> “If however the English Hereford Herd Book Society elect to enter animals showing only two dams without giving any explanation,” Miller remarked to John Hungerford Arkwright, “they of course have the right to do it. But it will subject them to criticism that it would be well to avoid,” he cautioned, and moreover, registering “animals [that] may be 1/2 and 3/4 bloods” as purebred would “have a tendency to lessen the value of full blood animals.”<sup>191</sup> The implied threat was, of course, the loss of the American export market: as far as the American Association was concerned, British breeders could either measure up to their new standards, or do without their business.

Not surprisingly, this came as something of an affront to breeders in Great Britain, and they resisted such pressure. According to Joseph Russell Bailey, a member of the Hereford Herd Book Society’s editing committee for much of the 1880s and 1890s, Hereford men in Britain had enough trouble as it was in meeting the existing standards. “Tinkering with the rules” so shortly after having made them would be, in his estimation, “a distinct disadvantage” to the Society’s authority in the eyes of Hereford breeders, and a “disturb[ance] to public confidence.”<sup>192</sup> Entry to the *Herd Book* had only recently ceased to be *ad hoc*, and “there are some breeders (Herbert Cranshaw for instance),” Bailey remarked to Arkwright in 1883, “who are missing...this pedigree until they reach the third or fourth cross.”<sup>193</sup> If the Society “made this rule more stringent,” Bailey argued, “it would be disheartening for anyone in this position.” Given that there had been “a lapse of only

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<sup>190</sup> Ibid.

<sup>191</sup> T. L. Miller to J. H. Arkwright, 25 July 1883. Hereford Record Office, A63/IV/42/31.

<sup>192</sup> Ibid.

<sup>193</sup> Bailey to J. H. Arkwright [1883]. Hereford Record Office, A63/IV/42/31.

four years since the rule was made,” he felt it was “almost a breach of faith on the part of the Society” to attempt to so tighten entry to the *Herd Book*.<sup>194</sup>

More to the point, four crosses of “named Hereford blood” seemed perfectly sufficient to Bailey and to his compatriots.<sup>195</sup> For example, after four crosses the descendants of a cross between a Shorthorn and a Hereford would be “1/16 Shorthorn blood, 15/16 Hereford which,” Bailey argued, “should be pure enough for anything.” Even the third cross produced an animal that was “7/8 pure,” “beyond which,” by his calculation, “the stain of blood is not carried.” In a rare explicit reference to the racial typing of his own species, Bailey continued, if “in America a man with this amount of black blood would I believe be considered absolutely white,” then so, too, ought a Hereford be considered absolutely pure.<sup>196</sup>

*The breed on which the sun never sets*

In point of fact, what counted as white or not in parts of nineteenth-century America rested on the “one drop rule,” or the theory of “hypodescent”—that any African ancestry, of any proportion, precluded an individual from being recognized as “white.” This was, of course, subject to great variation across time and place in nineteenth-century America, and was open to a range of social, legal, and cultural interpretations, but in theory, at least, was much more stringent (though no less arbitrary) than the measures that governed the purity

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<sup>194</sup> Ibid.

<sup>195</sup> *Herd Book of Hereford Cattle*, vol. 10, p. viii.

<sup>196</sup> J. R. Bailey to J. H. Arkwright, 26 May 1881. Hereford Record Office, A61/IV/42/26. The “stain of blood” in the United States was in fact carried to 1/32 in the case of African-American heritage.

of “thoroughbred” livestock.<sup>197</sup> Hypodescent, in fact, ran directly counter to the kind of production of purity that Bailey and others argued was necessary for the Hereford breed in the 1870s and 1880s. Nothing about this comparison seems to have struck Bailey—or Arkwright, for that matter—as absurd, inappropriate, or in any way irrelevant. Believing that the American Hereford Cattle Breeders’ Association wished to enact regulations for pedigreed cattle more strict than those imposed upon the people of their own land, Bailey and others in Britain interpreted their strict rules for pedigree as unjust, and an insult to their own bloodstock, and to themselves. The 1881 letter in which Bailey literally drew parallels between pure and crossbred cattle (figure 7) and the racial classification that ruled contemporaneously in some parts of the United States is a rare but nonetheless compelling reminder of what is more often an unstated aspect of this subject: that discourse surrounding type could be as easily applied to people as to animals.<sup>198</sup>

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<sup>197</sup> Policing racial boundaries in the United States in the nineteenth century was complicated, as in fact what “race”—or “black” or “white”—was (and is), was subject of constant question. Teresa Zackodnik argues that the assumed binary between black and white was called into question by competing understandings of race as a social category and a biological one. See Teresa Zackodnik, “Fixing the Color Line: The Mulatto, Southern Courts, and Racial Identity,” *American Quarterly* 53, no. 3 (September 1, 2001), pp. 420–451. For the stakes—political and social—of ethnoracial mixture (“miscegenation” and “amalgamation”) in the United States in the nineteenth and twentieth centuries, see

David A. Hollinger, “Amalgamation and Hypodescent: The Question of Ethnoracial Mixture in the History of the United States,” *American Historical Review* 108, no. 5 (December 2003), pp. 1363–1390; also Martha Elizabeth Hodes, ed., *Sex, Love, Race: Crossing Boundaries in North American History* (New York: New York University Press, 1999). Finally, for a thorough overview of the legal permutations of the concept of hypodescent, see Christine B. Hickman, “The Devil and the One Drop Rule: Racial Categories, African Americans, and the U.S. Census,” *Michigan Law Review* 95, no. 5 (March 1997), pp. 1161–1265.

<sup>198</sup> This kind of comparison, of course, has a very specific history and politics in nineteenth-century America, and was a characteristic of American slavery. See Walter Johnson, *Soul by Soul: Life Inside the Antebellum Slave Market* (Cambridge: Harvard University Press, 1999). It also has much broader applicability, and was part of the wider discourse of classification and speciation in the nineteenth century. See Harriet Ritvo, *The Platypus and the Mermaid and Other Figments of the Classifying Imagination* (Cambridge: Harvard University Press, 1997), especially p. 77, 120–130. For racial classification in the context of colonial Brazil, see Renato G. Mazzolini, “Las Castas: Interracial Crossing and Social Structure, 1770–1835,” in *Heredity Produced: At the Crossroads of Biology, Politics, and Culture, 1500–1870*, edited by Staffan Müller-Wille and Hans-Jörg Rheinberger (Cambridge and London: MIT Press, 2007), pp. 349–374.

It is also an indication of the significance of the “Volume 13 Rule,” which marks a watershed in the history of the breed. The late 1880s were both the dawn of the heyday of Hereford cattle, and the moment at which the influence of its original breeders based in Great Britain began to wane. After the loss of the American market, the export trade in Hereford cattle dwindled. Demand in South America—tied, as in the case of New Zealand’s frozen mutton trade, to the growth of the refrigerated shipping industry—rose, and exports to Canada continued more or less unabated, but even combined, these sources could not make up for the American demand at its peak.<sup>199</sup> British Hereford breeders would have another day in the sun in the early post-war years, when Britain’s Milk Marketing Board made the semen of Hereford bulls widely available and wildly popular for use on dairy herds through artificial insemination,<sup>200</sup> but after the institution of the infamous “Volume 13 rule,” they never again benefited from the material and symbolic benefits that came from their earlier monopoly over the breed.

Meanwhile, the Hereford stock exported from Britain generated and regenerated, proliferated and altered beyond the control of its original stewards. In their haste to profit from the overseas demand for Hereford cattle, British breeders had forgotten the lesson of Robert Bakewell, and allowed the “genetic template” embodied in their breeding stock to escape their grasp.<sup>201</sup> Moreover, the transatlantic conflict over purity had eroded some of

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<sup>199</sup> Grundy, “Hereford Bull,” p. 79.

<sup>200</sup> Ibid, p. 81. Grundy notes that the Hereford’s color-marking ability was as significant in accounting for its popularity in twentieth-century Britain’s artificial insemination industry as it had been on the nineteenth-century new world range. Ibid, p. 83. For the growing popularity of the Hereford breed in postwar Britain, see also Cincinnatus, “Farming Notes: Breed-preference Changes,” *Country Life* 130 (6 July 1961), p. 43; Simba, “Farming Notes: Breeding for Beef,” *Country Life* 131 (8 March 1962), p. 555.

<sup>201</sup> Harriet Ritvo, “Possessing Mother Nature: Genetic Capital in Eighteenth-Century Britain,” in *Early Modern Conceptions of Property*, edited by John Brewer and Susan Staves, pp. 413–26 (London and New York: Routledge, 1995).

the genealogical connections between cattle on either shore, thereby laying the early material foundations for the English variety's later imperilment. Consequently, by the 1980s and 1990s, when "native" British breeds fell into the crosshairs of the Rare Breeds Survival Trust, a substantial proportion of the breed's last 100 years of development had taken place beyond the shores of the British Isles, in the context of British imperial, or quasi-imperial, expansion. Unlike a number of other British breeds—Lincoln Reds, or even Devon cattle, for instance—whose circulation beyond the United Kingdom was more limited, Herefords were exported so widely and in such great numbers, that global circulation became a hallmark of the breed (figure 8). A necessary condition for the breed's eventual conservation—without the widespread exportation of Hereford cattle in the nineteenth century, there would have been no "foreign" Hereford genetics to threaten the "pure English" type—it also became the defining characteristic of the breed. Even proponents of the traditional variety acknowledge and celebrate the breed's global dominance. Without a trace of irony, Traditional Herefords are touted as both the quintessential native British breed, and the ultimate world traveler. At once "pure English," descended from "entirely *British Bloodlines*," and "the universal beef breed," Traditional Herefords, in an unapologetic nod to the erstwhile Empire, are described as "the breed on which the sun never sets."<sup>202</sup>

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<sup>202</sup> Interview with Les Cook, 4 January 2010; "Llandinabo Farms Home Page", n.d. <http://www.llandinabofarms.co.uk/home.asp>, accessed 22 December 2011; "Traditional Hereford Beef", n.d. [http://www.traditionalherefords.org/hereford\\_beef.html](http://www.traditionalherefords.org/hereford_beef.html), accessed 9 December 2011. Emphasis original.





Figure 4. The headquarters of the Hereford Cattle Society at 6 Offa Street, Hereford, United Kingdom, a visual representation of the breed's global dominance.

Yet the course of conservation for the Traditional Hereford has worked to eliminate, or at least to implicitly obscure, the imperial legacy of the breed. In defending “pure English Herefords” from the tidal wave of returning postcolonial Hereford pedigrees that threatened to overwhelm indigenous English ones, proponents of this type redrew the bounds of the Hereford breed, carving out a breed within a breed that could be construed and defended as native. In so doing, they implicitly privileged environmental factors over shared genetic roots: time spent outside Britain and in the hands of unfamiliar breeders, not common origins in nineteenth-century British stock, came to define the re-imported former colonial varieties. Identifying generations spent on foreign lands, in unfamiliar climates, and in the hands of unfamiliar breeders as the primary defining factors—rather than shared genetic and historical roots—thus redefined certain Hereford cattle returned to their

erstwhile native land in such a way as to deny their claim, such as it might be, to regional and national belonging within Britain.

At the same time, Traditional Herefords were set apart as an environmentally and culturally autochthonous sub-breed, or breed within a breed, celebrated as *the* ultimate English breed—perfectly adapted to its climate, its environment, its particular system of production. Emphasizing the connection between breed, beef and patrimony, “it may not be too long,” the RBST’s Peter King wrote in 1996 of their native British cattle initiative, “before British pastures are [again] filled with beef cattle that not only are part of our history and heritage, but also produce the quality of meat that the discerning British palate will appreciate.”<sup>203</sup> In drawing such connections, and by implicitly disinheriting modern pedigrees, efforts to conserve the Traditional Hereford also disinherited the legacy of Britain’s imperial history—the reciprocal return of the erstwhile colonial, in this case clad in the red coat (and white face) of the Hereford breed.<sup>204</sup> As a celebration of the notion of a specific interpretation of cultural heritage and England’s shared rural past, the idea (and the existence) of the Hereford as a “traditional” breed, by its very nature, denied its own uneasy history of colonial expansion.

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<sup>203</sup> Ibid.

<sup>204</sup> The controversy over imported Canadian Herefords was only slightly later than several waves of postcolonial human immigration to Great Britain, and if the commentary surrounding the “Traditional” Hereford was less explicit than Bailey’s remarks in the 1880s, the implied parallels between human and animal were no less salient.

## Conclusion

In 1892, an article in the British *Agricultural Gazette* (reprinted in the *New Zealand Farmer*) boasted that Britain had recently “attained the leading place as a breeding and distributing centre” for sheep stock.<sup>1</sup> While other places—Spain, Australia, New Zealand—had the advantage of climate over Great Britain, according to this author, “careful attention to breeding and general management,” supported by Britain’s “favourable condition in regard to commerce” had allowed it to rise to the top of the world of livestock breeding. Such a position was hard won, but easily lost: Spain’s precipitous fall from glory in the eighteenth-century after centuries of dominance as the world’s repository of merino sheep was a handy lesson if Britons were tempted to “get a little elevated over our position” (Chapter 2).<sup>2</sup> Moreover, British sheepbreeders only had to recall that their “best blood” (indeed, their only blood) was not, by at least some measures, British, having come from elsewhere: all writers on the subject, according to the

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<sup>1</sup> “Origin and Distribution of the Sheep,” *New Zealand Farmer* 12, no. 6 (June 1892), p. 237. Reprinted from the *Agricultural Gazette*.

<sup>2</sup> *Ibid.*

*Agricultural Gazette*, “point[ed] with one finger to Asia” as the locus of *Ovis aries*’s domestication.<sup>3</sup>

Furthermore, by the 1890s, some of Britain’s “best blood” had already left the British Isles. Australasia had “drawn on us for breeding Leicester, Lincoln, Southdown, Shropshire, and Cheviot blood.”<sup>4</sup> Canada, the United States, Patagonia, the Falkands, and the “Plate River,” too, had siphoned off their share. Many of these places had drawn upon Britain’s reserves of thoroughbred cattle as well (Chapter 5). These regions, according to this commentator, needed watching. New South Wales, Queensland, and New Zealand were “making rapid strides towards the lead in breeding and distributing” sheep, and had “already begun to send out blood towards the Cape, South America, and California.”<sup>5</sup> Indeed, New Zealand cherished just such hopes of supplying its neighbors with stud stock. Only quarantine stood in the way, according to a report of the colony’s Livestock Commission in 1891, and were this hindrance removed, “in a few years New Zealand would become the source from which the Australian colonies would draw their supplies of highly-bred sheep and cattle.”<sup>6</sup>

Despite mild anxiety over the gestures of such colonial and quasi-colonial upstarts in this direction, Britain remained largely secure in its position as the locus of “the production of animals of the highest class” until at least the mid-twentieth century (Introduction).<sup>7</sup> By then, however, changing global patterns of production had motivated new developments in

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<sup>3</sup> Contemporary archeozoology supports this proposition. See Juliet Clutton-Brock, *A Natural History of Domesticated Mammals* (Cambridge: Cambridge University Press, 1999 [1987]), p. 74.

<sup>4</sup> “Origins and Distribution,” p. 237.

<sup>5</sup> *Ibid.*

<sup>6</sup> “Livestock Committee’s Report,” *New Zealand Farmer* 11, no. 11 (November 1891), p. 461.

<sup>7</sup> Halifax, “Forward,” in *Britain Can Breed It* (London: Farmer and Stockbreeder, 1949), p. 5.

breeding away from longstanding British aims. High yields and high productivity became the watch words of post-war farming, and many of the British types, developed for a different set of market imperatives in the nineteenth century, fell from favor. Already by the 1960s, people in Britain—some of them livestock breeders themselves, but many of them simply concerned or interested supporters of the countryside—became alarmed at a general loss of breed diversity within the nation’s herds and flocks. Changes to British agricultural production and policy reflecting generalized anxiety over food security in the aftermath of World War II induced a preference for foreign or “continental” breeds: Holsteins increasingly took the place of Guernseys and Jerseys in the milking stall; and beef breeds like Limousins, Charolais, and Belgian Blues replaced Devons and Lincoln Reds in the paddock.<sup>8</sup>

A number of seemingly sensible rationales backed changes in this direction. Under the accelerated pace of post-war production, the ability of continental breeds to put flesh on quickly was an asset, not only to pedigree breeders, but to the whole chain of meat production in Britain, from finishing to butchering to marketing. At the same time, consumer tastes were changing, and the low butterfat content of Holstein milk, for instance, as compared with that of Alderney or Gurnsey cows, likewise came to be seen as an advantage to the imported European breed. Moreover, livestock agriculture in Britain at this time was intensifying, and the abundance of fertilizers, feeds, and supplements meant that many of the characteristics that had made a “traditional” breed like the English

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\* Abigail Woods explores some of the impetus to breed livestock for higher yields in “Breeding Cows, Maximising Milk: British Veterinarians and the Livestock Economy, 1930-50,” in *Healing the Herds: Disease, Livestock Economies, and the Globalization of Veterinary Medicine*, edited by Karen Brown and Daniel Gilfoyle (Athens: Ohio University Press, 2010), pp. 59-75.

Hereford or the Lincoln Red desirable—hardiness, independence, ability to forage, and so on—were no longer as relevant as they had been. As “continental” varieties moved into British pastures, they also increasingly took the place of British types in their erstwhile overseas territory. Even where “British” breeds continued to dominate as, for example, the Hereford breed did in the North and South American cattle industries, they did so largely outside the grasp and influence of British breeders. If, in the nineteenth century, adjusting to the fact that “word-wide is now the field whence [foodstuffs] comes to our markets” was a difficult pill to swallow (Chapter 4),<sup>9</sup> in the latter twentieth century, the fact that the “blood” that supplied the world’s livestock industry was increasingly sourced from elsewhere was, for the former champion, bitter medicine.

In the arc of this story can be seen the changing significance and consequences of so-called native breeds. Central to the development of Britain’s status at the top of the world of stud stock in the nineteenth century, regional and local types “native” to parts of Great Britain were first the raw material used by agricultural “improvers” to forge such titans of improved livestock as the New Leicester Longwool and the Shorthorn breed of cattle. Connection to place—to soil, climature, terrain, temperature, and conditions—was important: it was the first measure of distinction in a type, conferring the identity and “character” essential to its recognition as a breed. Later, it conferred antiquity, purity of descent, and an elevated status relative to other breeds (Chapter 3). As Great Britain’s “favourable condition in regard to commerce” developed over the course of the nineteenth century, and in particular as “space and time [were] annihilated” under an expanding

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<sup>9</sup> Craigie, P. G. “Twenty Years’ Change in Our Foreign Meat Supplies.” *Journal of the Royal Agricultural Society of England* 23. 2nd series (1887), p. 465.

system of steam transport,<sup>10</sup> drawing together the four corners of the Empire, “the tinge of origin” that adhered to types of stock was an important measure of new lands.<sup>11</sup> Their various fates added to basic observation, teaching colonial breeders about the commensurability of unfamiliar lands, the intimacy of understanding thus developing over time as breeders molded existing types to new lands, and the lands to their types (Chapter 4).

Too stubborn a connection to locality marked a breed as a loser in the nineteenth century: this was the heyday of ovine and bovine transposition, where types and breeds were moved about from one distant place to another, in great numbers, and with much enthusiasm. A breed like the Hereford, able to “retain its character” while simultaneously prospering across a range of climates and conditions, succeeded where more strongly localized types were not even tried, and where a more finicky type like the Shorthorn languished. Transposability had to be carefully balanced by “character,” and both were produced by means of selective methods over the course of the nineteenth century (Chapter 3).

There were limits, of course, to transposability, and they were most starkly encountered in the colonies, where unfamiliar lands demanded adjustment on the part of breeds. New types like the Corriedale were forged according to tried and true means and aims: produced by cross- and in-breeding methods, the Corriedale claimed to embody the elusive goal of an earlier generation of British improvers—an English sheep in Spanish wool (Chapters 2 and 4). The aim and outcome of these efforts was a hybrid type,

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<sup>10</sup> “Naval and Submarine Exhibit,” *British Trade Journal* (1 May 1882). Derbyshire Records Office, D1333 Z/Z 2.

calibrated to both distant consumer demand and the realities of colonial topographies. New breeds like this, and existing types modified for colonial conditions, performed an essential function. Aided by the technologies of industrial transport, especially refrigeration, they satisfied the burgeoning appetites of Britain's "urban carnivores" for British meat produced by the "ghost acres" of the colonies.<sup>12</sup>

In this, the link between pursuits agricultural agricultural and pastoral, and the good of the nation that underpinned the rhetoric of improvement in the early nineteenth century was given free range on an imperial scale. The connections between power and prosperity, population and sustenance, patriotic pastoralism and national security moved beyond Britain's shores. The trade in frozen colonial mutton that arose in the last decade of the nineteenth century rescued "the home food supply in the shape of meat" from dependence on "America and the Continent of Europe."<sup>13</sup> Of no small consequence for a people for whom the consumption of animal flesh was central to their collective identity, such commerce and traffic was understood to be mutually beneficial: "British ships could not only bring meat from the colonies," but take in return manufactured goods, thereby conferring mutual advantage."<sup>14</sup>

Notions of rosy symbiosis obscured a more complicated, more conflicted reality. Almost any imperial traffic rested on a legacy of the violence of conquest, and the frozen meat trade was no exception. A breed like the Corriedale, with its genetically British roots and its colonial "character," aspired to an embodiment of the mutual advantages of

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<sup>11</sup> William Brown, *British Sheep Farming* (Edinburgh: Adam and Charles Black, 1870), p. 29.

<sup>12</sup> Belich pp. 437-451.

<sup>13</sup> "Sir Alfred Haslam, K.T., J.P.: A Sketch of his Career," in *The Queen's State Visit to Derby May 21st, 1891* (Derby: W. Hobson, 1891), p. 144. Derbyshire Record Office, D1333 Z/Z 8.



colonialism, but its significance as a both a colonial and a “native” breed reveals the darker side of imperial ties. While nativeness with respect to livestock could mean many things, in the colonies it was handmaiden to colonial dispossession. European colonialism—across time and place and nearly without exception—relied on the dispossession of indigenous peoples. The particulars varied, but rarely (if ever) was violent conquest not part of the process. In New Zealand, the process of Maori dispossession—what Evelyn Stokes calls a “tenurial revolution” in New Zealand—was piecemeal, periodically peaceful, but also violent, the bloodiest and most sustained moment of conflict the Land Wars of the 1860s.<sup>15</sup> To call a breed “native” in such a setting was thus a political claim as well as an environmental one: whether consciously or not, the establishment of “native” colonial breeds rhetorically bolstered claims to imperial dominion.

Imperialism, as many scholars remind us, though, was a two-way street, and as with so many other aspects of the Empire, the colonial breeds eventually came home to roost.<sup>16</sup> Anxiety over the purity and the future of the “Traditional” Hereford breed coincided not only with the disintegration of the former empire, but also with the successive waves of

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<sup>14</sup> Ibid.

<sup>15</sup> Evelyn Stokes, “Contesting Resources: Maori, Pakeha, and a Tenurial Revolution.” In *Environmental Histories of New Zealand*, edited by Eric Pawson and Tom Brooking (Oxford and New York: Oxford University Press, 2002), especially p. 48.

<sup>16</sup> The degree to which British imperialism can be said to have been reciprocal is a subject of historiographical debate. For an overview, see Andrew S. Thompson, *The Empire Strikes Back? The Impact of Imperialism on Britain from the Mid-Nineteenth Century* (Harlow, England; New York: Pearson Longman, 2005). For other facets, such as domestic consumption, identity, and popular culture, see Catherine Hall, *Civilising Subjects: Colony and Metropole in the English Imagination, 1830-1867* (Chicago: University of Chicago Press, 2002); John M. MacKenzie, *Imperialism and Popular Culture* (Manchester and Dover, NH: Manchester University Press, 1986); Catherine Hall, *At Home with the Empire: Metropolitan Culture and the Imperial World* (Cambridge and New York: Cambridge University Press, 2006); Kathleen Wilson, *A New Imperial History: Culture, Identity, and Modernity in Britain and the Empire, 1660-1840* (Cambridge and New York: Cambridge University Press, 2004).

immigration of former colonial subjects to Great Britain.<sup>17</sup> Concern over the impact of postcolonial creole breeds upon native British breeds of cattle mirrored disquietude over the effects of widespread human immigration on British society and culture.<sup>18</sup> Unlike in an earlier moment, where breeders in Britain felt free to discuss openly the parallels between breed and race, between the animal and the human conditions (Chapter 5), such connections remained submerged in this case. As the more racially and culturally diverse population of Britain evolved in the late twentieth century, the realm of breed conservation remained an unusual discursive space in which conversations about English purity and nativeness continued to take place unapologetically. Here, claims to native belonging or indigeneity were rolled out in an opposing fashion to their deployment in colonial settings. Where the plasticity of the concept—and of the animals themselves—supported colonial breeders working to establish their claim to foreign lands in the face of people with obvious prior claim, in post-imperial Britain, that very possibility for evolution and adaptation—or creolization—was the ground upon which to deny the right of belonging and the claims of blood. Where Herefords in the nineteenth century “claimed each other as one family,”<sup>19</sup> breeders in the late twentieth century maintained that the legacy of

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<sup>17</sup> For post-WWII British immigration, particularly from the colonies and former colonies, see the following: Randall Hansen, *Citizenship and Immigration in Post-War Britain: The Institutional Origins of a Multicultural Nation* (Oxford and New York: Oxford University Press, 2000); Rieko Karatani, *Defining British Citizenship: Empire, Commonwealth, and Modern Britain* (London and Portland: Frank Cass, 2003); Louise Ryan and Wendy Webster, *Gendering Migration: Masculinity, Femininity and Ethnicity in Post-War Britain* (Aldershot UK and Burlington VT: Ashgate, 2008).

<sup>18</sup> For some of the cultural effects of colonial and postcolonial immigration, see Lars Ole Saurberg, *Intercultural Voices in Contemporary British Literature: The Implosion of Empire* (Houndmills UK and New York: Palgrave 2001); and Ashley Dawson, *Mongrel Nation: Diasporic Culture and the Making of Postcolonial Britain* (Ann Arbor: University of Michigan Press, 2007).

<sup>19</sup> T. Duckham, “A Lecture on the History, Progress, and Comparative Merits of the Hereford Breed of Cattle” (London: Rogerson & Tuxford, 1863. Reprinted in T. Duckham, *Eyton's Herd Book of Hereford Cattle*, vol. 6 (Hereford and London: Longman and Co., 1868), p. 0. Paper originally given at the Royal Agricultural College at Cirencester, 4 December 1863.

expansion had pulled it assunder. In a last stand for Britain's superiority as the stud stock capital of the world, defenders of the Traditional Hereford, and breed conservationists in general, redefined "native" as the repository of crucial national heritage.

Claims on behalf of a breed to nativeness were thus never simple, nor were they innocent. Such rhetoric always transcended the merely geographical, and spoke to a concern for status, to political imperatives, to ecological anxiety. The pliability of the concept ensured its long shelf-life: for each case, at each time, in each setting, what native signified was redirected, what it included or excluded was re-inscribed. Charting its course reveals the inner workings of colonialism—the material and figurative production and sustenance of ties between colony and metropole which, in the cases explored here, took “the shape of meat.”<sup>20</sup> It also reveals the cost of this endeavor. Following the invention, reinvention, and transformation of British breeds from cradle to grave—from home county, to distant land, to icy tomb, and eventually to British table—exposes the foundations of a globalizing industrial apparatus for meat-making, one that profoundly influenced the shape of distant societies and ecologies, and whose legacy supplies the tables of the developed world to this day. Enabled by the modernized, standardized British breeds that emerged from a national mania for agricultural “improvement” at the end of the eighteenth century, the cost of such has been the concurrent standardization of place—the erosion of local distinction and biotic variability the world over, the consequences of which we continue to wrestle with today.

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<sup>20</sup> “Alfred Haslam,” p. 144.

## **Bibliography**

### **Unpublished Archival Sources**

#### Herefordshire Record Office

Hampton Court Estate

Hereford Herd Book Society, A63/IV/46

John Hungerford Arkwright, correspondence, A63/IV/21/3

Unnamed subcollection, A63/III/65

#### Derbyshire Record Office

Haslam Foundry and Engineering Company Limited Papers, 1882-1912,  
GB 0026 D1333

#### Hereford Cattle Association

Export Ledger, 1890-1901

Export Ledger, 1901-1915

### **Online Archival Sources**

Darwin Correspondence Project,

<http://www.darwinproject.ac.uk/>

National Library of New Zealand Papers Past,

<http://paperspast.natlib.govt.nz/cgi-bin/paperspast>

National Library of Australia Trove Digitised Newspapers,

<http://trove.nla.gov.au/newspaper>

### **Published Periodicals**

*Agricultural Magazine, or Farmers' Monthly Journal of Husbandry and Rural Affairs*

*All the Year Round*  
*Annals of Agriculture*  
*The Ark*  
*Australasian Pastoralists' Review*  
*Chambers's Journal of Popular Literature, Science and Arts*  
*Commercial and Agricultural Magazine*  
*Country Life*  
*Farmer's Magazine*  
*Good Words*  
*Leisure Hour*  
*Livestock Journal and Fancier's Gazette*  
*New Zealand Country Journal*  
*New Zealand Farmer, Bee, and Poultry Journal*  
*Quarterly Review*  
*Saturday Review of Politics, Literature, Science and Art*

#### **Published Sources**

*A Project for Extending the Breed of Fine-Wooled Spanish Sheep, Now in the Possession of His Majesty, Into All Parts of Great Britain, Where the Growth of Fine Clothing Wools Is Found to Be Profitable.* London: W. Bulmer & Co., 1804.

Anderson, Virginia DeJohn. *Creatures of Empire: How Domestic Animals Transformed Early America.* Oxford and New York: Oxford University Press, 2004.

Anderson, Warwick. "Climates of Opinion: Acclimatization in Nineteenth-Century France and England." *Victorian Studies* 35, no. 2 (Winter 1992): 135–157.

———. *The Cultivation of Whiteness: Science, Health, and Racial Destiny in Australia.* Durham: Duke University Press, 2006.

*American Hereford Record.* Vol. 1. Beecher, Ill.: Breeders' Live-Stock Association, 1880.

Archer, A.H., and James Sinclair. *Domestic Breeds and Their Treatment.* New. London: Vinton and Co., 1896.

Armstrong, Albert Stapleton, and George Ord Campbell. *Australian Sheep Husbandry: A Handbook of the Breeding and Treatment of Sheep, and Station Management, with Concise Instructions for Tank and Well-Sinking, Fencing, Dam-Making, &c.* Melbourne, Sydney, and Adelaide: George Roberston, 1882.

Austin, H. B. *The Merino: Past, Present and Probable.* Sydney: Grahame Book Co., 1947.

- Banks, Joseph. "Address to the Members." In *The Second Report of the Merino Society*, 5–8. London: Evans & Ruffy, 1812.
- . *Some Circumstances Relative to Merino Sheep: Chiefly Collected From the Spanish Shepherds, Who Attended Those of the Flock Paular, Lately Presented to His Majesty By the Government of Spain; with Particulars Respecting that Great National Acquisition; and Also Respecting the Sheep of the Flock of Negrete*. London: W. Bulmer & Co., 1809.
- Beinart, William. *The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770-1950*. Oxford and New York: Oxford University Press, 2003.
- Belich, James. *Replenishing the Earth: The Settler Revolution and the Rise of the Anglo-World, 1783-1939*. Oxford and New York: Oxford University Press, 2009.
- Bischoff, James. *A Comprehensive History of the Woollen and Worsted Manufactures: And the Natural and Commercial History of Sheep, from the Earliest Records to the Present Period*. London: Smith, Elder and Co., 1842.
- . *The Wool Question Considered, Being an Examination of The Report from the Select Committee of the House of Lords, Appointed to Take into Consideration the State of the British Wool Trade, and an Answer to Earl Stanhope's Letter to the Owners & Occupiers of Sheep Farms*. London: J. Richardson, 1828.
- Britain Can Breed It*. 2nd ed. London: Farmer and Stockbreeder, 1949.
- Broodbank, Joseph G. "The Development of Refrigerated Accommodation in British Ports." In *Proceedings of the Fourth International Congress of Refrigeration, Held Under the Auspices of the International Institute of Refrigeration, 16-21 June, 1924*. Vol. 2, 1705-1720. London: International Refrigerating Congress Movement, 1924.
- Brooking, Tom, and Eric Pawson, eds. *Seeds of Empire: The Environmental Transformation of New Zealand*. London and New York: I.B. Tauris, 2011.
- . "The Contours of Transformation." In *Seeds of Empire: The Environmental Transformation of New Zealand*, edited by Tom Brooking and Eric Pawson, 13–33. London and New York: I.B. Tauris, 2011.
- Brown, William. *British Sheep Farming*. Edinburgh: Adam and Charles Black, 1870.
- Browne, Janet E. *The Secular Ark: Studies in the History of Biogeography*. New Haven: Yale University Press, 1983.

- Bucke, Thomas George. "Observations on the Quality of the Mutton." In *Second Report of the Merino Society*, 10–14. London: Evans & Ruffy, 1812.
- . "Report." In *Third Report of the Merino Society*, 5–89. London: Evans & Ruffy, 1813.
- Campbell, R. N. "St Kilda and Its Sheep." In *Island Survivors: The Ecology of the Soay Sheep of St Kilda*, edited by P.A. Jewell, C. Milner and J. Morton Boyd, 8–35. London: The Athlone Press of the University of London, 1974.
- Canizares-Esguerra, Jorge. "Creole Colonial Spanish America." In *Creolization: History, Ethnography, Theory*, edited by Charles Stewart, 26–45. Walnut Creek, CA: Left Coast Press, 2007.
- Carter, H. B. *His Majesty's Spanish Flock; Sir Joseph Banks and the Merinos of George III of England*. Sydney: Angus & Robertson, 1964.
- Cassidy, Rebecca. *The Sport of Kings: Kinship, Class, and Thoroughbred Breeding in Newmarket*. Cambridge: Cambridge University Press, 2002.
- Chaplin, Joyce E. "Creoles in British America: From Denial to Acceptance." In *Creolization: History, Ethnography, Theory*, edited by Charles Stewart, 46–65. Walnut Creek, CA: Left Coast Press, 2007.
- Clutton-Brock, Juliet. *A Natural History of Domesticated Mammals*. Cambridge: Cambridge University Press, 1999 [1987].
- Clutton-Brock, Juliet, and Steven G. J. Hall. *Two Hundred Years of British Farm Livestock*. London: Natural History Museum, 1995.
- Clutton-Brock, T. H., and Josephine Pemberton. *Soay Sheep: Dynamics and Selection in an Island Population*. Cambridge, U.K.: Cambridge University Press, 2004.
- Clutton-Brock, T. H., B. T. Grenfell, T. Coulson, A. D. C. MacColl, A. W. Illius, M. C. Fordchhammer, K. Wilson, J. Lindström, M. J. Crawley, and S. D. Albon. "Population Dynamics in Soay Sheep." In *Soay Sheep: Dynamics and Selection in an Island Population*, edited by T. H. Clutton-Brock and Josephine Pemberton, 52–88. Cambridge: Cambridge University Press, 2004.
- Clutton-Brock, T. H., and J. M. Pemberton. "Individuals and Populations." In *Soay Sheep: Dynamics and Selection in an Island Population*, edited by T. H. Clutton-Brock and Josephine Pemberton, 1–16. Cambridge: Cambridge University Press, 2004.



- Clutton-Brock, T. H., J. M. Pemberton, T. Coulson, I. R. Stevenson, and A. D. C. MacColl. "The Sheep of St Kilda." In *Soay Sheep: Dynamics and Selection in an Island Population*, edited by T. H. Clutton-Brock and Josephine Pemberton, 17–51. Cambridge: Cambridge University Press, 2004.
- Coates, George. *The General Short-Horned Herd-Book: Containing the Pedigrees of Short-horned Bulls, Cows, etc. of the Improved Durham Breed, from the Earliest Account to the Year 1822*. Otley: W. Walker, 1822.
- Colley, Linda. *Britons: Forging the Nation, 1707-1837*. New Haven: Yale University Press, 1992.
- Collins, E. J. T. "Food Supplies and Food Policy." In *The Agrarian History of England and Wales*, edited by E. J. T. Collins, Vol. 7, Part I, 33–71. Cambridge: Cambridge University Press, 2000.
- . "Rural and Agricultural Change." In *The Agrarian History of England and Wales*, edited by E. J. T. Collins, Vol. 7, Part I, 72–223. Cambridge: Cambridge University Press, 2000.
- The Corriedale. New Zealand's Own Breed: History and Development*. Christchurch, N.Z.: The Corriedale Sheep Society, 1936.
- Coventry, Andrew. *Remarks on Live Stock and Relative Subjects*. Edinburgh and London: Archibald Constable and Co., and John Murray, 1806.
- Craigie, P. G. "Twenty Years' Change in Our Foreign Meat Supplies." *Journal of the Royal Agricultural Society of England* 23, 2nd series (1887): 465-500.
- Critchell, James Troubridge, and Joseph Raymond. *A History of the Frozen Meat Trade: An Account of the Development and Present Day Methods of Preparation, Transport, and Marketing of Frozen and Chilled Meats*. London: Constable & Company, 1912.
- Cronon, William. *Changes in the Land: Indians, Colonists, and the Ecology of New England*. New York: Hill and Wang, 1983.
- . *Nature's Metropolis: Chicago and the Great West*. New York: W.W. Norton, 1991.
- Crosby, Alfred W. *Ecological Imperialism: The Biological Expansion of Europe, 900-1900*. Cambridge: Cambridge University Press, 1986.
- Culley, George. *Observations on Live Stock: Containing Hints for Choosing and*

- Improving the Best Breeds of the Most Useful Kinds of Domestic Animals*. London: G. Wilkie & J. Robnson, 1807.
- . *Observations on Livestock, Containing Hints for Choosing and Improving the Best Breeds of the Most Useful Kinds of Domestic Animals*. London: G. G. & J. Robinson, 1786.
- Cyclopedia of New Zealand*. Wellington Provincial District. Wellington, N.Z.: The Cyclopedia Company, Limited, 1897.
- Darwin, Charles. *On the Origin of Species by Means of Natural Selection, or, the Preservation of Favored Races in the Struggle for Life*. London: John Murray, 1859.
- . *The Variation of Animals and Plants Under Domestication*. Vol. 1. London: John Murray, 1868.
- Davidson, William Soltau. *The Establishment of the Frozen-Meat Trade, of the Dairying System, and of the Corriedale Breed of Sheep in New Zealand*. Edinburgh: New Zealand and Australian Land Company, 1918.
- . *William Soltau Davidson, 1846-1924. A Sketch of His Life Covering a Period of Fifty-two Years, 1864-1916, in the Employment of the New Zealand and Australian Land Company Limited*. Edinburgh: Oliver and Boyd, 1930.
- Dawson, Ashley. *Mongrel Nation: Diasporic Culture and the Making of Postcolonial Britain*. Ann Arbor: University of Michigan Press, 2007.
- Derry, Margaret Elsinor. *Bred for Perfection: Shorthorn Cattle, Collies, and Arabian Horses Since 1800*. Baltimore: Johns Hopkins University Press, 2003.
- . *Ontario's Cattle Kingdom: Purebred Breeders and Their World, 1870-1920*. Toronto: University of Toronto Press, 2001.
- Duckham, T. "A Lecture on the Breeding and Management of Hereford Cattle." In *Eyton's Herd Book of Hereford Cattle*. Vol. 7. Hereford and London: Longman and Co., 1869.
- . "A Lecture on the History, Progress, and Comparative Merits of the Hereford Breed of Cattle." In *Eyton's Herd Book of Hereford Cattle*. Vol. 6. Hereford and London: Longman and Co., 1868.
- . *Eyton's Herd Book of Hereford Cattle*. Vol. 3. Hereford and London: William Phillips and Longman and Co., 1858.

- . *Eyton's Herd Book of Hereford Cattle*. Vol. 6. Hereford, UK: The Times, 1865.
- Duncumb, John. *General View of the Agriculture of the County of Hereford; Drawn up for the Consideration of the Board of Agriculture and Internal Improvement*. London: Bulmer and Co., 1805.
- Evans, B. L. *Agricultural and Pastoral Statistics of New Zealand, 1861-1954*. Wellington, N.Z.: R. E. Owen, Government Printer, 1956.
- “Extracts from the Minutes of the Smithfield Club from 1798 to 1900.” In *History of the Smithfield Club, from 1798 to 1900*, by Edwin James Powell. London: Smithfield Club, 1900.
- Eyton, T. C. *A History of the Rarer British Birds*. London: Longman, Rees, Brown, and Green, 1836.
- Eyton, T.C. *The Herd Book of Hereford Cattle*. Vol. 1. London: Longman and Co., 1846.
- . *The Herd Book of Hereford Cattle*. Vol. 2. London: Longman and Co., 1853.
- Flannery, Tim F. *The Future Eaters: An Ecological History of the Australasian Lands and People*. Chatswood, N.S.W.: Reed, 1994.
- First Report of the Merino Society*. London: Evans & Ruffy, 1811.
- Fowler, J. Kersley. *Records of Old Times: Historical, Social, Political, Sporting and Agricultural*. London: Chatto & Windus, 1898.
- Franklin, Sarah. *Dolly Mixtures: The Remaking of Genealogy*. Durham: Duke University Press, 2007.
- Freeman, Sarah. *Mutton and Oysters: The Victorians and Their Food*. London: V. Gollancz, 1989.
- The Frozen and Chilled Meat Trade: A Practical Treatise by Specialists in the Meat Trade*, 2 vols. London: Gresham Publishing Company Ltd., 1929.
- Fussell, G. E. “Four Centuries of Lincolnshire Farming.” *Reports of Papers of the Lincolnshire Art and Archaeological Society* 4, no. part 2 (n.d.).
- Golley, Frank Benjamin. *A History of the Ecosystem Concept in Ecology: More Than the Sum of the Parts*. New Haven and London: Yale University Press, 1993.

- Gooch, William. *General View of the Agriculture of the County of Cambridge*. London: Richard Phillips, 1811.
- Grant, Ross. "The Australian Meat Industry." In *The Frozen and Chilled Meat Trade: A Practical Treatise by Specialists in the Trade*, Vol. 1, 31–100. London: Gresham Publishing Company, Ltd., 1929.
- Grasseni, Christina. *Skilled Visions: Between Apprenticeship and Standards*. New York: Berghahn Books, 2007.
- Grosse, Pascal. "Turning Native? Anthropology, German Colonialism, and the Paradoxes of the 'Acclimatization Question,' 1885-1914." In *Worldly Provincialism: German Anthropology in the Age of Empire*, edited by Matti Bunzl and H. Glenn Penny, 179–197. Ann Arbor: University of Michigan Press, 2003.
- Grundy, Joan E. "The Hereford Bull: His Contribution to New World and Domestic Beef Supplies." *Agricultural History Review* 50, no. 1 (2002): 69–88.
- Hall, Catherine and Sonya O. Rose, eds. *At Home with the Empire: Metropolitan Culture and the Imperial World*. Cambridge and New York: 2006.
- Hall, Catherine. *Civilising Subjects: Colony and Metropole in the English Imagination, 1830-1867*. Chicago and London: Chicago University Press, 2002.
- Hall, George Webb. "Observations on the Growth and Management of Merino Wool." In *The Second Report of the Merino Society*, 36–65. London: Evans & Ruffy, 1812.
- Hansen, Randall. *Citizenship and Immigration in Post-War Britain: The Institutional Origins of a Multicultural Nation*. Oxford and New York: Oxford University Press, 2000.
- Harley, C. Knick. "Steers Afloat: The North Atlantic Meat Trade, Liner Predominance, and Freight Rates, 1870-1913." *Journal of Economic History* 68, no. 4 (December 2008): 1028–1058.
- Harman, Mary. *An Isle Called Hirte: History and Culture of the St Kildans to 1930*. Waterish, Isle of Skye: Maclean Press, 1997.
- Heath-Agnew, E. *A History of Hereford Cattle: And Their Breeders*. London: Duckworth, 1983.
- Henson, Elizabeth. *Rare Breeds in History*. Cheltenham, UK: Olivant & Son Ltd, 1982.
- Herd Book of Hereford Cattle*. Vol. 10. Hereford: Hereford Herd Book Society, 1879.

- Herd Book of Hereford Cattle*. Vol. 11. Hereford: Hereford Herd Book Society, 1880.
- Higgins, David M. "'Mutton Dressed as Lamb?' The Misrepresentation of Australian and New Zealand Meat in the British Market, c. 1890-1914." *Australasian Economic History Review* 44, no. 2 (July 2004): 161–184.
- Holford, G. H. *The Corriedale: New Zealand's Own Breed*. Christchurch: Corriedale Sheep Society, 1928.
- . *The Corriedale: New Zealand's Contribution to the Sheep World*. Christchurch: The Corriedale Sheep Society, 1924.
- Holland, Peter, Jim Williams, and Vaughan Wood. "Learning About the Environment in Early Colonial New Zealand." In *Seeds of Empire: The Environmental Transformation of New Zealand*, edited by Tom Brooking and Eric Pawson, 34–50. London and New York: I.B. Tauris, 2011.
- House of Lords. *Report from the Select Committee on Marking of Foreign Meat, &c.; Together with the Preceedings of the Committee, Minutes of Evidence, and Appendix*. Select Committee, House of Lords. Great Britain, Parliament, August 24, 1893.
- Hunt, Charles Henry. *A Practical Treatise on the Merino and Anglo-Merino Breeds of Sheep: In Which the Advantages to the Farmer and Grazier, Peculiar to These Breeds, Are Clearly Demonstrated*. London: Printed for W.P. Piercy, 1809.
- Hunt, John. *Agricultural Memoirs; or History of the Dishley System. In Answer to Sir John Saunders Sebright, Bart. M.P.* Nottingham: Printed for the author by H. Barnett, 1812.
- Isenberg, Andrew C. *The Destruction of the Bison: An Environmental History 1750-1920*. Cambridge and New York: Cambridge University Press, 2000.
- Jacoby, Karl. *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation*. Berkeley: University of California Press, 2001.
- Jardine, N., J. A. Secord, and E. C. Spary, eds. *Cultures of Natural History*. Cambridge and New York: Cambridge University Press, 1996.
- Jewell, P. A., C. Milner, and J. Morton Boyd, eds. *Island Survivors: The Ecology of the Soay Sheep of St Kilda*. London: The Athlone Press of the University of London, 1974.

- John Ryrie Graham. *A Treatise on the Australian Merino*. Melbourne: Clarson, Massina, and Co., 1870.
- Johnson, Walter. *Soul by Soul: Life Inside the Antebellum Slave Market*. Cambridge: Harvard University Press, 1999.
- Jones, David. "New Zealand Trade." In *The Frozen and Chilled Meat Trade: A Practical Treatise by Specialists in the Trade*, Vol. 1, 101–158. London: Gresham Publishing Company, Ltd., 1929.
- Jordan, Terry G. *North American Cattle-Ranching Frontiers: Origins, Diffusion, and Differentiation*. Albuquerque: University of New Mexico Press, 1993.
- Jordanova, Ludmilla. *Lamarck*. Oxford and New York: Oxford University Press, 1984.
- Karsatani, Rieko. *Defining British Citizenship: Empire, Commonwealth, and Modern Britain*. London and Portland: Frank Cass, 2003.
- Kingsland, Sharon E. *The Evolution of American Ecology, 1890-2000*. Baltimore: Johns Hopkins University Press, 2005.
- Langford, Paul. "The Eighteenth Century." In *The Oxford History of Britain*, edited by Kenneth O. Morgan, 399-469. Oxford and New York: Oxford University Press, 2010.
- Lee, Paula Young, ed. *Meat, Modernity, and the Rise of the Slaughterhouse*. Durham, NH: University of New Hampshire Press, 2008.
- Lever, Christopher. *They Dined on Eland: The Story of the Acclimatisation Societies*. London: Quiller Press, 1992.
- Lipson, E. *A Short History of Wool and Its Manufacture, Mainly in England*. Melbourne and London: William Heinemann, Ltd., 1953.
- Little, James. *The Story of the Corriedale: Also a Few Suggestions as to the Possible Cause of Black Sheep*. Willis and Aitken, 1917.
- Low, David. *The Breeds of the Domestic Animals of the British Islands: Comprehending the Natural and Economical History of Species and Varieties; the Description of the Properties of External Form; and Observations on the Principles and Practice of Breeding*. London: Longman, Brown, Green & Longmans, 1845.
- MacDonald, James. *Food from the Far West*. London and Edinburgh: W. P. Nimmo, 1878.

- MacDonald, James, and James Sinclair. *History of Hereford Cattle*. London: Vinton & Company, Ltd., 1909.
- MacKenzie, John M., ed. *Imperialism and Popular Culture*. Manchester and Dover, NH: Manchester University Press, 1986.
- Mandler, Peter. *The English National Character ; the History of an Idea from Edmund Burke to Tony Blair*. New Haven: Yale University Press, 2006.
- Marshall, William. *The Rural Economy of Gloucestershire; Including Its Dairy: Together with the Dairy Management of North Wiltshire; and the Management of Orchards and Fruit Liquor, in Herefordshire*. Vol. 2. 2nd ed. London: G. Nicol, 1789.
- Marshall, William Humphrey. *The Rural Economy of the West of England: Including Minutes of Practice, in That Department*. Vol. 1. 2nd ed. London: G. & W. Nicol, 1805.
- . *The Rural Economy of Yorkshire, Comprizing the Management of Landed Estates, and the Present Practice of Husbandry in the Agricultural Districts of the Country*. Vol. 2. 2nd ed. London, 1796.
- McLintock, A. H. *An Encyclopedia of New Zealand*. 3 vols. Wellington: R. E. Owen, Government Printer, 1966.
- Melville, Elinor G. K. *A Plague of Sheep: Environmental Consequences of the Conquest of Mexico*. Cambridge: Cambridge University Press, 1994.
- Metcalf, Robyn S. *Meat, Commerce and the City: The London Food Market, 1800-1855*. London: Pickering and Chatto, 2012.
- Montalivet. "Report of Hte Minister of the Interior." *The First Report of the Merino Society*. London: Evans & Ruffy, 1811.
- Morgan, Raine, and G. E. Mingay. "Root Crops." In *Agrarian History of England and Wales*. Vol. 6, 1750–1850. Cambridge: Cambridge University Press, 1989.
- Morton Boyd, J., and P. A. Jewell. "The Soay Sheep and Their Environment: A Synthesis." In *Island Survivors: The Ecology of the Soay Sheep of St Kilda*, edited by P. A. Jewell, C. Milner, and J. Morton Boyd, 360–373. London: The Athlone Press of the University of London, 1974.
- Müller-Wille, Staffan, and Hans-Jörg Rheinberger. "Heredity - The Formation of an Epistemic Space." In *Heredity Produced: At the Crossroads of Biology, Politics, and Culture, 1500-1870*, edited by Staffan Müller-Wille and Hans-Jörg

- Rheinberger, 3–33. Cambridge MA and London: MIT Press, 2007.
- New Zealand Herd Book: Containing the Pedigrees of Improved Short-Horned Cattle.* Vol. 1. New Series. Christchurch: The Canterbury Agricultural and Pastoral Association, 1884.
- Osborne, Michael A. *Nature, the Exotic, and the Science of French Colonialism.* Bloomington: Indiana University Press, 1994.
- Otter, Chris. “Civilizing Slaughter: The Development of the British Public Abattoir, 1850–1910.” In *Meat, Modernity, and the Rise of the Slaughterhouse*, edited by Paula Young Lee, 89–106. Durham, NH: University of New Hampshire Press, 2008.
- Parkinson, Richard. *Treatise on the Breeding and Management of Live Stock, in Which the Principles and Proceedings of the New School of Breeders Are Fully and Experimentally Discussed.* Vol. 1. London: Cadell and Davies, 1810.
- Parry, Caleb Hillier. *Facts and Observations Tending to Shew the Practicability and Advantage, to the Individual and the Nation, of Producing in the British Isles Clothing Wool, Equal to That of Spain: Together with Some Hints Towards the Management of Fine-Woolled Sheep.* London: Cadell and Davies, 1800.
- Pawson, Eric, and Tom Brooking. “Introduction.” In *Seeds of Empire: The Environmental Transformation of New Zealand*, edited by Tom Brooking and Eric Pawson, 1–12. London and New York: I.B. Tauris, 2011.
- , eds. *Environmental Histories of New Zealand.* Oxford and Melbourne: Oxford University Press, 2002.
- Pearce, William. *General View of the County of Berkshire.* London: W. Bulmer, 1794.
- Peden, Robert L. “Pastoralism and the Transformation of the Open Grasslands.” In *Seeds of Empire: The Environmental Transformation of New Zealand*, edited by Tom Brooking and Eric Pawson, 73–93. London and New York: I.B. Tauris, 2011.
- Perren, Richard. *The Meat Trade in Britain, 1840-1914.* London and Boston: Routledge and Kegan Paul, 1978.
- Pomeranz, Kenneth. *The Great Divergence: China, Europe, and the Making of the Modern World Economy.* Princeton and Oxford: Princeton University Press, 2000.
- Powell, Edwin James. *History of the Smithfield Club from 1798 to 1900.* London: The Smithfield Club, 1902.



- Pratt, Mary Louise. *Imperial Eyes: Travel Writing and Transculturation*. 2nd ed. London: Routledge, 2008.
- Prince, Hugh C. "The Changing Rural Landscape, 1750-1850." In *Agrarian History of England and Wales*, edited by G. E. Mingay. Vol. 6, 1750–1850. Cambridge: Cambridge University Press, 1989.
- Rackham, Oliver. *The History of the Countryside*. London: J.M. Dent, 1986.
- Ramsay, R. "The Rise of the World's Refrigerated Meat Traffic, and Its Effect on the Resources of the Various Countries of Meat Supply." In *Proceedings of the Fourth International Congress of Refrigeration, Held Under the Auspices of the International Institute of Refrigeration, 16-21 June, 1924*. Vol. 2, 1720-33. London: International Refrigerating Congress Movement, 1924.
- . "The World's Frozen and Chilled Meat Trade." In *The Frozen and Chilled Meat Trade: A Practical Treatise by Specialists in the Trade*, 3-30. London: Gresham Publishing Company, Ltd., 1929.
- Real, Leslie A., and James H. Brown. *Foundations of Ecology: Classic Papers with Commentaries*. Chicago and London: University of Chicago Press, 1991.
- Richards, Eric. *From Hirta to Port Phillip: The Story of the Ill-fated Emigration from St Kilda to Australia in 1852*. Ravenspoint: Islands Book Trust, 2010.
- Ritvo, Harriet. "Mad Cow Mysteries." In *Noble Cows and Hybrid Zebras: Essays on Animals and History*. Charlottesville and London: University of Virginia Press, 2010.
- . "Possessing Mother Nature: Genetic Capital in Eighteenth-Century Britain." In *Early Modern Conceptions of Property*, edited by John Brewer and Susan Staves, 413–26. London and New York: Routledge, 1995.
- . "Race, Breed, and Myths of Origin: Chillingham Cattle as Ancient Britons." In *Noble Cows and Hybrid Zebras: Essays on Animals and History*, 132–156. Charlottesville and London: University of Virginia Press, 2010.
- . *The Animal Estate: The English and Other Creatures in the Victorian Age*. Cambridge, Mass: Harvard University Press, 1987.
- . *The Platypus and the Mermaid and Other Figments of the Classifying Imagination*. Cambridge, Mass: Harvard University Press, 1997.
- Robin, Libby. *How a Continent Created a Nation*. Sydney: University of New South

- Wales Press, 2007.
- Rogers, Ben. *Beef and Liberty*. London: Chatto & Windus, 2003.
- Rudge, Thomas. *General View of the Agriculture of the County of Gloucester*. London: Richard Phillips, 1807.
- Russell, Nicholas. *Like Engend'ring Like: Heredity and Animal Breeding in Early Modern England*. Cambridge: Cambridge University Press, 1986.
- Ryan, Louise, and Wendy Webster. *Gendering Migration: Masculinity, Femininity and Ethnicity in Post-War Britain*. Aldershot UK and Burlington VT: Ashgate, 2008.
- Ryder, M. L. "Some Unusual Outgrowths from Secondary Follicles in Soay Sheep." *Nature* 183, no. 4678 (1959): 1831–1832.
- Samuel Butler. *A First Year in Canterbury Settlement With Other Early Essays*. Edited by R.A. Streatfeild. London: A.C. Fifield, 1914.
- Saurberg, Lars Ole. *Intercultural Voices in Contemporary British Literature: The Implosion of Empire*. Houndmills UK and New York: Palgrave, 2001.
- Schivelbusch, Wolfgang. *The Railway Journey: The Industrialization of Space and Time in the Nineteenth Century*. Berkeley: University of California Press, 1986.
- Second Report of the Merino Society*. London: Evans & Ruffy, 1812.
- Sebright, John Saunders. *The Art of Improving the Breeds of Domestic Animals: In a Letter Addressed to the Right Hon. Sir Joseph Banks, K.B.* London: Printed for J. Harding, 1809.
- Shukin, Nicole. *Animal Capital: Rendering Life in Biopolitical Times*. Minneapolis: University of Minnesota Press, 2009.
- Sinclair, John. *Observations on the Different Breeds of Sheep, and the State of Sheep Farming in Some of the Principal Counties of England*. Edinburgh: W. Smellie, 1792.
- "Sir Alfred S. Haslam, KT., J.P.: A Sketch of His Career." In *The Queen's State Visit to Derby May 21st, 1891*. Derby: W. Hobson, 1891.
- Somerville, John Southey. *Facts and Observations Relative to Sheep, Wool, Ploughs and Oxen: In Which the Importance of Improving the Short-Wooled Breeds of Sheep, by a Mixture of the Merino Blood, Is Demonstrated from Actual Practice*. 3rd ed.

London: Printed for J. Harding, 1809.

———. *Lord Somerville's Address to the Board of Agriculture: On the Subject of Sheep and Wool, on the 14th of May 1799*. Sussex: John Lord Sheffield for the Board of Agriculture, 1799.

*Statistical Abstract for the British Empire in Each Year from 1889 to 1903*. London: His Majesty's Stationery Office, 1905.

*Statistical Abstract for the Several Colonial and Other Possessions of the United Kingdom in Each Year from 1876 to 1890*. Vol. 28. London: Her Majesty's Stationery Office, 1891.

Steel, Frances. *Oceania Under Steam: Sea Transport and the Cultures of Colonialism, c. 1870-1914*. Manchester: Manchester University Press, 2012.

Theunissen, Bert. "Breeding Without Mendelism: Theory and Practice of Dairy Cattle Breeding in the Netherlands, 1900-1950." *Journal of the History of Biology* 41 (2008): 637–676.

*Third Report of the Merino Society*. London: Evans & Ruffy, 1813.

Thompson, Andrew S. *The Empire Strikes Back? The Impact of Imperialism on Britain from the Mid-Nineteenth Century*. Harlow and New York: Pearson Longman, 2005.

Thompson, Benjamin. "Appendix: Letter from B. Thompson, Esq., to Sir Joseph Banks." In *The Second Report of the Merino Society*, 117–161. London: Evans & Ruffy, 1812.

Trow-Smith, Robert. *A History of British Livestock Husbandry*. Vol. 2. London: Routledge and K. Paul, 1957.

Vernon, James. *Hunger: A Modern History*. Cambridge and London: Belknap and Harvard University Press, 2007.

Wallis-Taylor, A. J. *Refrigeration, Cold Storage and Ice-Making: A Practical Treatise on the Art and Science of Refrigeration*. 5th ed. London: Crosby Lockwood and Son, 1917.

Waters, Sydney D. *Clipper Ship to Motor Liner: The Story of the New Zealand Shipping Company 1873-1939*. London: The New Zealand Shipping Company Ltd, 1939.

Welles, E. F. *Remarks and Suggestions on the Form of Cattle, with Illustrations Indicative*

- of the True and the Defective*. Hereford: J. Head, n. d.
- White, Richard. *Railroaded: The Transcontinentals and the Making of Modern America*. New York: W. W. Norton, 2011.
- Wild, Trevor. *Village England: A Social History of the Countryside*. London and New York: I.B. Tauris, 2004.
- Williams, Ernest E. "The Foreigner in the Farmyard." *The New Review* 16, no. 93 (February 1897): 143–158.
- Wilson, Kathleen, ed. *A New Imperial History: Culture, Identity, and Modernity in Britain and the Empire, 1600-1850*. Cambridge and New York: Cambridge University Press, 2004.
- Wood, Roger J. *Genetic Prehistory in Selective Breeding: A Prelude to Mendel*. Oxford [England]: Oxford University Press, 2001.
- . "The Sheep Breeders' View of Heredity Before and After 1800." In *Heredity Produced: At the Crossroads of Biology, Politics, and Culture, 1500-1870*, edited by Staffan Müller-Wille and Hans-Jörg Rheinberger, 229–49. Cambridge MA and London: MIT Press, 2007.
- Woods, Abigail. "Breeding Cows, Maximising Milk: British Veterinarians and the Livestock Economy, 1930-50." In *Healing the Herds: Disease, Livestock Economies, and the Globalization of Veterinary Medicine*, edited by Karen Brown and Daniel Gilfoyle, 59–75. Athens: Ohio University Press, 2010.
- Worcester, Donald E. *The Texas Longhorn, Relic of the Past, Asset for the Future*. College Station: Texas A & M University Press, 1987.
- Worgan, George B. *General View of the Agriculture of the County of Cornwall*. London: B. McMillan, 1807.
- Worster, Donald. *Dust Bowl: The Southern Plains in the 1930s*. New York: Oxford University Press, 1979.
- Youatt, William. *Cattle: Their Breeds, Management, and Diseases*. London: Baldwin and Craddock, 1834.
- . *The Complete Grazier: Or, Farmer's and Cattle Breeder's and Dealer's Assistant*. 6th ed. London: Baldwin and Craddock, 1833.
- Young, Arthur. *A Six Week's Tour through the Southern Counties of England and Wales*.

London: W. Strahan and W. Nicoll, 1769.