

More Things on Heaven and Earth:  
Modernism and Reindeer in the Bering Straits

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## The Scene

On a modern map, the shoulders of Eurasia and North America nearly touch at the Bering Strait, a 52-mile barrier between Old World and New. During the rolling period of ice ages known as the Pleistocene, the Pacific Ocean pulled back leaving the Chukchi Peninsula connected to Alaska's Seward Peninsula by a wide, grassy plain. Two million years ago, the animal we call the reindeer emerged along this continental juncture.<sup>1</sup> As glaciers spread, reindeer followed them southward; by 20,000 years ago, *Rangifer tarandus* had moved deep into Western Europe, forming the base of Neolithic hunters' diets and appearing, antlers lowered in the fall rutting charge, on the walls of Lascaux.<sup>2</sup>

Reindeer, like our human ancestors who appeared a million and a half years after them, are products of the ice age. They are gangly, long-nosed, and knob-kneed, with a ruff of white fur around their deep chests, swooping antlers and nervous ears, and have the capacity to not just survive but thrive in million-strong herds despite the Arctic dark and cold. Like any animal living in the far north, reindeer – or caribou, as they are known in North America – must solve the problem of energy. With the sun gone for months of the year, the photosynthetic transfer of heat into palatable calories is minimal; plants are small, tough, often no more than the rock-like scum of lichens. But reindeer can metabolize scrub willow and shrubs, grazing on over four hundred species during the summer or digging them loose of snow with their spade-like hooves in winter. These hooves, which make a clicking noise at each step, also allow reindeer to swim rivers and run across the alternately lumpy and pulpy surface of the tundra.<sup>3</sup> And movement is important: to find new grazing land, to seek the shelter of valleys in the winter or relief from insects among coastal breezes in summer, and to avoid the ravages of wolves and men.

For humans, who can eat but not survive on lichen and tree bark, and who must borrow the hides of tougher animals to withstand cold, reindeer make the tundra habitable.<sup>4</sup> Reindeer have been eaten by people for as long as our species has lived in northern Asia and North America, some fifteen to twenty thousand years.<sup>5</sup> Reindeer have, therefore, spent a very long time dealing with human predation, providing steady food even as the end of the last ice age wreaked havoc with the mammoths and their megafauna ilk.<sup>6</sup> With the retreat of the last great glaciers ten thousand years ago, reindeer emerged as the dominant herbivore in the still-cold polar world on both sides of the newly separated Eurasian and North American continents. Since ten thousand years is little time for genetic variation, caribou and reindeer are the same species, eating the same things and behaving more or less the same way in landscapes tuned to similar pressures of climate.<sup>7</sup>

People, however, are able to change more quickly than ungulates; we learn from experience and communicate that knowledge between individuals and across generations without modifying our genes. As a result, during the thousands of years that humans have lived along the Bering Strait, the relationship between humans and reindeer has altered more than once.<sup>8</sup> Around eight thousand years ago, people living in Chukotka hunted reindeer on skis, with canine assistance.<sup>9</sup> Three thousand years later, another group crossed the Bering Strait with new tools for the New World, bringing bows and arrows tipped in tiny stone points that made hunting considerably more efficient.<sup>10</sup>

Among the technological adaptations that shaped interactions between humans and deer, one was not about killing reindeer more easily but about keeping them alive and nearby to eat later. Reindeer migrate quite predictably; their trails are etched into hillsides from repeated seasonal use. But circumstances intervene. Warm winters in the Arctic lead to more snowfall,

causing reindeer to starve or migrate late; there are periodic disease outbreaks which decimate herds; and every century or so *Rangifer* populations simply crash.<sup>11</sup> One way to deal with this caprice is to hunt something else; marine mammals have been a staple in the north Pacific for millennia. But maybe a thousand years ago, hunters in the European Arctic came up with a way to rely on reindeer without constantly testing the edge of starvation: they began to domesticate and breed animals that could be handled, herded and stay outside the tent till hunger struck.<sup>12</sup> The early history of this process is dim, but over several centuries the practice of taming wild reindeer reached the Chukchi in the Far East, who learned to protect their stock from wolves and to move them annually from inland fodder in the winter to the insect-reducing breezes of the coasts in summer. Unlike other innovations that crossed into North America from Chukotka, reindeer husbandry never left Eurasia. In the seventeenth century, Russians found the Chukchi herding reindeer in the interior and killing sea mammals on the coast; when the Russians crossed to Alaska in the eighteenth century, they met Inupiat hunters of wild caribou and whales.

The Europeans who came to the North Pacific, first eastward from the Russian Empire and then westward from British territory in what is now Canada, were not aware that reindeer herding among the Chukchi was only a few centuries old, or that the ancestral Inupiat came to the New World not long before the birth of Christ.<sup>13</sup> The land on either side of the Bering Straits is changeable – from year to year, between decades and over centuries – and people have changed with it, but this was not apparent to new arrivals. What they saw was a place where, as the English-born, Russian-hired naturalist Martin Sauer put it, “nature itself seemed to forbid the approach of mankind.”<sup>14</sup> There was, however, mankind indigenous to the Bering arctic, although of a sort Europeans found profoundly strange: prone to such unexpected behavior as sharing their wives, cleaning their bowls with saliva and leaving their dead unburied.<sup>15</sup> Whether

these habits were romantic or barbaric depended on the observer, but the strangeness of the Inupiat and Chukchi left them out of joint with European history – childlike, sometimes warlike, but changeless, possessed of “no conception of time or ages.”<sup>16</sup>

This general impression, of forbidding but grand landscapes and timeless people, did not alter substantially by the end of the nineteenth century. What did change was the number of whalers, fur traders, missionaries, naturalists, prospectors and assorted mercenaries and misfits in the North Pacific. But while there was cash to be had along the Bering Straits, mostly in furs, there was not much of a state to regulate it. The Russian Empire spent decades administering Chukotka at a loss, since the Chukchi were quite adept at ignoring or violently opposing civilization. The United States, owner of Alaska since 1867, was trying to decide if its northern possession was in fact a folly. What could be done with a vast, cold land home to miscreants and, in the words of one Russian poet, the “half-thawed humanity” of native peoples?<sup>17</sup>

In the last decade of the nineteenth century, the United States began to grapple with this question, joined thirty years later by its new Soviet neighbor. The timing was not accidental. The United States had grown to define itself, as Fredrick Jackson Turner argued in his 1893 address on the “Significance of the Frontier in American History,” by the process of taking wild land and turning it into farms and cities. With the closing of the continental frontier in 1890, Alaska began to look like the last space where this critical part of the national character could be enacted. The Soviet Union, meanwhile, inherited from the Russian Empire its substantial northern territories but not its limited aspirations towards the arctic: in the new revolutionary state, where everyone was meant to be materially equal and ideologically dedicated, Marxism could not stop at the tundra’s edge.

Both countries were motivated by a sense that the north needed to become a part of their unique future – a socialist one or a democratic capitalist one, but a future understood by its promoters as fundamentally better than the present. And in both cases, the Inupiat and Chukchi were seen as living in a state very distant from that future, frozen out of civilization, education, and history itself. This was, to a large degree, because of the indigenous peoples' relationship with their territory. For Americans looking north, history was a thing possessed by individuals who transformed land, who took it from wild state to tamed productivity. This act of transformation was the basis of ownership; land was unowned as long as it was unimproved, and improvement meant, in essence, agriculture. Once it became private property, land was both a source of wealth and the guarantor of political freedom; if property could feed the owner and send a surplus to market, the owner could act in society without outside influence. The Inupiat, who did not settle or build upon their land, who therefore had limited or no private property, and who lacked the impulse to accumulate more this year than the year before, seemed to many Americans to exist outside the flow of progress. Inupiat lives were defined by static subsistence activities in which nothing advanced, where they were beholden to an often uncharitable environment, and where they owned nothing they could bequeath to their children or use to guarantee individual political and moral independence.

The Soviet Union, meanwhile, found the Chukchi to be less without time than living in the wrong one. If Marxist history was a progression from feudalism to capitalism to socialism and onward to utopia, the nomads of the far northeast were stuck in a past where human life was unrelentingly restricted by nature. Despite herding reindeer, the Chukchi lacked enough control over the material world to care about more than bare survival, a condition that for good Marxists also restricted social development toward communal freedom, a state freed from linked evils of

material worry and political oppression. The Chukchi, who the Soviets saw as lacking all but the most primitive divisions of labor, existed in a present that was really part of the deep past, out of step with economic relationships of increasing and eventually libratory complexity. To be properly Soviet, the Chukchi had to escape their backward life toward a future unconstrained by the mean logic of nature.

The solution for being either timeless or backward had to do with production. As long as the peoples of the north were confined by bare subsistence, as long as they produced no surplus, they would remain under the boot-heel of necessity and their lives could not change. The introduction of history required altering the relationship between land and people, so that a place hopeless for traditional agriculture, difficult for industry, and often challenging to basic survival would contribute not just to the substance of a few wild people but produce a surplus for the betterment of the general citizenry. In the act of such production, either by obtaining property or obtaining consciousness, indigenous humanity would be thawed out, escaping what seemed to be, in the eyes of their American and Soviet observers, lives of considerable deprivation and exploitation.

Such was certainly the outlook of Sheldon Jackson, Alaska's first Commissioner of Education. In 1890, Jackson sailed up the west coast to visit the Inupiat villages under his jurisdiction, with a brief trip across the Straits to Chukchi country. He was appalled by what he found on the Alaskan side. Indigenous communities, which had lived "since time immemorial" on wildlife that "provided ample food for their people," were now starving, unable to compete with commercial whalers and hunters, whose "breach-loading rifles" had driven away the game.<sup>18</sup> History had arrived in the north, and it was destroying the timeless native and the surrounding land. Jackson, however, found hope with the Chukchi, who he noted were "good-

sized, robust, fleshy, well-fed” and even half-civilized. The key difference, in Jackson’s estimation, was the domesticated reindeer, an animal capable of large-scale production. If imported to Alaska, Jackson argued, these animals could “civilize, build up [Inupiat] manhood, and lift them into self-support.” Moreover, an Alaska stocked with reindeer would “make millions of acres of moss-covered tundra conducive to the wealth of the country.”<sup>19</sup>

Jackson’s ambition for Alaska formed a quarter century before the Soviet Union began its own and considerably more substantial efforts, but for American and Soviet reformers alike, *Rangifer tarandus* was key to bringing the northern wastes and their peoples into history.<sup>20</sup> For both countries the means and the ends of reindeer husbandry shared a broadly high-modernist cadence: through scientific innovations and educational interventions production would expand, human control over nature would increase, and as a result people would live fundamentally better lives. There were considerable and consequential differences in the particulars – was the material world best controlled through private or collective property, was the future capitalist or communist – but on both Bering coasts progress, or history moving toward a self-confidently better future, was considered fact. The ability to command nature was a given. Animals, as part of nature, were objects worked upon by humans. That the reindeer might have their own ability to adapt or be subject to changes beyond the human world were not ideas readily thought by the high-modern mind. The United States and the Soviet Union wanted to make the tundra belong all to one time, one great rush into a better future, and saw history as that which was not nature. The reindeer, meanwhile, acted under the usual prerogatives of their biology: to eat and move and reproduce, to avoid the myriad dangers of the arctic world, to expand and contract their numbers with the bellows of climate. Such imperatives were not always congruent with the desires of their



new human masters, who in the twentieth century reshaped the relationship between people and reindeer in the North Pacific world.

### **Alaska, 1890-1920**

From the deck of a ship moving north through the Pacific, the windswept right shoulder of the Bering Strait emerges from the fog as “a desolate, moss-grown plain” where “no tree, no shrub delights the eye.”<sup>21</sup> In the late nineteenth century, the Europeans and Americans who found themselves on the Seward Peninsula were struck by its barrenness: the flat land, prone to intense ground blizzards during the nine months of winter, the roiling spray and packed ice churned off the shallow Bering Sea by the winds, the distant low hills that roll into mountains away from the coastline. Uninviting as the Peninsula appeared, it supported a diverse fauna – whales, walrus, seals and fish along the coast; caribou, Dall sheep and small game on the tundra, itself rich in lichens, mosses, scrubby grasses and bushes. The land produced enough food that the Inupiat lived in semi-permanent villages along the coastline and up the rivers threading into the interior. The Inupiat shared, and share, a common language and customs but had distinct habits based on geography. Coastal groups harvested more sea mammals and fish, while those living along inland rivers ate more caribou. This produced lean years and abundant years, depending on timing of whale migration or the size of the caribou herds and their successful interception by hunters. But the general Inupiat adaptation to their environment was intermittent mobility – ranging across a large territory when game was scarce or retreating to semi-permanent villages when calories were plentiful. <sup>22</sup>

When Sheldon Jackson took his inaugural tour of northwest Alaska in 1890, the Inupiat along the coast had been trading with Russian, British and American whalers and furriers

directly or indirectly for the better part of a century. This caused substantial changes to Inupiat life, most obviously due to the toll of Old World diseases and alcohol, the combined effects of which nearly halved the Inupiat population in many parts of the Seward Peninsula by the late 1800s. With families thus reduced, many villages recombined and migrated toward the coasts. Despite this turmoil, Inupiat social life maintained considerable consistency; political power was still vested in wealthy individuals capable of giving away a substantial surplus.<sup>23</sup> But for non-native observers, it was European trade, not disease, which was seen as responsible for indigenous decline. Across the North Pacific there was a growing consciousness that animals were imperiled by sustained over-harvesting.<sup>24</sup> Paul Niedieck, a sport hunter in the Teddy Roosevelt mold, blamed the lack of animal life on “wholesale massacre perpetuated by the natives” unable to moderate rifle-enabled killing.<sup>25</sup> Both Jackson and Niedieck saw the American and British “slaughter and destruction of the whales” and walrus as a major cause of Inupiat poverty.<sup>26</sup> The non-native presence, one way or another, had pulled the Inupiat out of their timeless “daily struggle for existence” and put them “on the way to extinction.” But the forces the market, once introduced, could not be reversed: as Niedieck argued, it was impossible to restock the ocean with whales.<sup>27</sup>

While the Inupiat as Inupiat – as “American Stone Age People” in the words of explorer Vladimir Stefansson – were doomed, the Inupiat as potential citizens were not.<sup>28</sup> The key was to find something that would keep native body and soul together without resorting to government charity, which would only “degrade, pauperize, and eventually exterminate” the Inupiat, even if it saved them from outright starvation.<sup>29</sup> The Inupiat needed to eat and they needed to work for their food. The solution, first conceived by U.S. revenue service captain Michael Healy and naturalist Charles Townsend during an 1885 voyage, was the reindeer. Unlike whales, reindeer

could restock the Seward Peninsula, and unlike any untamed animal they would, Townsend wrote, “render a wild people pastoral or agricultural” and “ought to be the first step toward their advancement.”<sup>30</sup> Such a plan was deeply appealing to Jackson’s missionary zeal and his belief that progress was, at root, a function of food production; hunting and gathering had to give way to an agricultural or industrial existence if the Inupiat were to advance socially and culturally toward civilization. What civilization meant, beyond not eating blubber in the good times and starving in the bad, was private resource ownership. Domestic reindeer were thus fundamentally different from wild caribou: they were possessions that created legal and social relations “like any other owner and property.”<sup>31</sup> As possessions, they made the native population independent from natural caprice and governmental support, and both of these things, combined with education in English and Christian conversion would, Healy testified, leave “no reason why the present population [of Inupiat] shall not be increased in numbers and advanced to the position of civilized, wealth-producing American citizens.”<sup>32</sup> And these citizens “will also utilize the hundreds of thousands of square miles of moss-covered tundra of arctic and subarctic Alaska and make those now useless and barren wastes conducive to the wealth and prosperity of the United States.”<sup>33</sup> Reindeer would turn hunters into Jeffersonian yeoman herders and thus into Americans, and Americans would turn the tundra from waste to modern productive space.

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Making Alaska wealthy and productive turned on two points: there needed to be reindeer, and the reindeer needed to be owned and managed efficiently. These objectives, in the first decade of the project, were interrelated; reindeer had to be shipped from Russia and protected so the herd would increase, and protection required knowledge. Inspired by his visit to Chukotka in 1890 with Healy, Jackson petitioned Washington to fund reindeer imports.<sup>34</sup> When a skeptical

Congress turned him down, Jackson raised the funds himself, testifying to the Inupiat plight in newspapers, religious journals and eloquent lectures across the country. In 1891, Jackson returned to Alaska with enough cash to fund a procurement trip to Russia. After considerable negotiation with the Chukchi – who were ill-disposed to endanger their trade in the piebald hides common in domestic deer and prized in Alaska – the revenue cutter *Bear* brought 171 animals across the Straits along with four “barbarous deer men of northeastern Siberia” to teach the Inupiat proper husbandry.<sup>35</sup>

Jackson and Healy were quite convinced that the Inupiat were starving. It seems unlikely that Inupiat themselves were in agreement. Certainly the sea mammal population in general was under considerable pressure from British and American ships seeking hides, blubber and ivory. The caribou were experiencing a periodic natural decline, plummeting from around 300,000 during the latter half of the nineteenth century to only ten or fifteen thousand animals by the 1890s.<sup>36</sup> Yet, there were still caribou to be eaten, along with seals and fish; in the 1880s John Muir recorded that walrus and whales were abundant in some areas and herring or salmon up and down the Alaska coast. Even where provisions were lean, food shortages were frequent enough and usually short enough in Inupiat experience to not produce the despair and suffering that made such good press in the south.<sup>37</sup>

Thus, on July 4<sup>th</sup>, 1892, when Jackson and Healy established the Teller Reindeer Station at Port Clarence, they were addressing a crisis unseen by its supposed victims. What the Inupiat did see were the Chukchi, a group with whom they sustained both a long-term trade relationship and considerable enmity. They also saw the possible loss of their lucrative monopoly over the spotted reindeer hides traded out of Chukotka and through the village of Kingegan (now Wales) near Teller Station.<sup>38</sup> Miner Bruce, Teller’s first manager, reported that the Chukchi were told

“that they would be killed, the white men at the station butchered, and the deer driven away and slaughtered” by their Inupiat neighbors.<sup>39</sup> It was not an ideal social climate in which to convince young Inupiat men to move to the Teller station and take orders from old enemies and new missionary staff.

The Teller station did have the lure of reindeer, however: the Inupiat were promised animals upon completing a term as apprentices. Initial interest in earning deer came from prominent Inupiat families, who attained their position by first amassing and then redistributing wealth. To earn a herd, and augment the networks of prestige and patronage that kept Inupiat social life together, apprentices had to relocate to the Teller Reindeer Station, where missionaries expected them “to rise at certain hours, to go to school regularly, and to observe certain rules about [...] dress and house.”<sup>40</sup> While missionaries could teach English and good grooming to herders and their families, they relied on the Chukchi to convey “every branch of the business” to the Inupiat, from the basics of lassoing a moving deer and herding animals on the tundra to the more refined skills of breaking bulls for harness and castrating fawns.<sup>41</sup> Chukchi methods, however, were often perturbing to the Teller staff. Herding was supposed to civilize the Inupiat, but what if they learned the Chukchi habit of drinking reindeer milk directly from the doe’s udder, “as if it had been pure nectar,” or started to eat warble fly larvae off the animals’ backs?<sup>42</sup> Worst, the Chukchi used the reindeers’ attraction to human urine as a method of guiding the herd, keeping a store of it in special sealskin pouch “large enough at the top to allow a deer to get its head far enough in to lap the bottom.”<sup>43</sup> By the end of the first year, Bruce recommended that new teachers be found.

Jackson already had ideal models of the northern farmer in mind: the Lapps, or Saami from Scandinavia, possessed “superior intelligence,” were often literate, and for the most part

had converted to Christianity. By the spring of 1893, Jackson's tireless lobbying and the survival of the Teller Station in its inaugural year secured federal support, and Jackson raised \$100,000 in private donations to bring sixteen Saami to Alaska. The American press, covering the Saami journey westward from New York, heralded the new instructors as perfect "civilized Natives" and ideal teachers for Alaska's indigenous population.<sup>44</sup> Best of all, the Saami had created a "vast commercial industry" that "supplies the grocery stores of northern Europe" and their influence would hopefully guide the Alaskan land and its natives toward the same productive future.<sup>45</sup>

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This vast commercial industry required vast herds, and vast herds required that humans adapt to reindeer needs. When left to its own devices, the imported Siberian stock wandered into avalanches, broke bones or was eaten by wolves. Fawns froze or suffered from insects if born in the wrong place. Untended animals also simply roamed beyond human reach, seeking preferred shrubs and weeds deeper into the tundra. Herding required constant vigilance and a considerably more mobile existence than most Inupiat preferred, and was done at the expense of other subsistence activities. Thus the social adjustments required to preserve the reindeer as reindeer – rather than letting them become wolf fodder or go feral – often dissuaded apprentices who preferred to fish or see their families from remaining with the herds.<sup>46</sup> The difficulty in keeping human minders did not, however, prevent the reindeer from reproducing admirably; by 1897 the number of domesticated *Rangifer* was over two thousand head, scattered at five reindeer stations and owned, mostly, by the government or mission schools funded by Jackson's largess as Education Commissioner.<sup>47</sup>

Two thousand animals were still well short of the hundreds of thousands Jackson had promised. Importing large numbers of reindeer was expensive and logistically fraught, making the Teller Station subject to the reindeers' biological rate of increase, or about one fawn per doe per year. The "starving Eskimo" were therefore prohibited from eating any of the animals they tended, a situation that strained the apprentices' relationship with non-native management. The last years of the nineteenth century were hard years in Inupiat country – the caribou population had not yet rebounded, and several bad fish runs were followed by low seal harvests. This made the hunger trumpeted in the early 1890s increasingly real, but any native caving to their desire for a fresh steak was punished, even if a dead reindeer prevented starvation.<sup>48</sup> At issue was who deserved to become an owner. Jackson increasingly saw reindeer herding as a commercial endeavor that should be run by the most skilled men available, who were not yet the Eskimo – a group that required years before they could be trusted [...] on their own account."<sup>49</sup> In the meantime, Saami herders were already prepared to take "vast areas of land, otherwise worthless" and "introduce large, permanent, and wealth-producing industries, where none previously existed... [doing so] is certainly a work of national importance."<sup>50</sup> Who owned the reindeer was a loaded question: a bad owner would be bad for the herd, which would be bad for Alaska's productivity and therefore bad for the nation.

The national importance of reindeer would likely have been further neglected by Washington had a trio of Scandinavians not found gold near Nome in 1898. The tide of miners who came to Alaska in the following rush brought with them crime, disease, alcohol, cash, desperation, elation, and the sense that Alaska was on the road to being more than just a cold backwater. With ready money and needy customers, reindeer were suddenly in demand for their meat and as draft animals. Jackson pressed this advantage, convincing Congress to provide

\$200,000 for importing more reindeer and herders from Scandinavia. The booming commerce in Nome was, after all, a sign of large-scale permanent colonization by non-natives, just as gold had opened much of the west. In this new world, Jackson was of the mind that the Inupiat were no longer needed as arctic farmers; that job was best left to the Saami and missionaries. Instead, the Inupiat should be taught how to freight goods on sledges and to raise deer, acting as “helpers and assistants in the development of the country by the white men.”<sup>51</sup> For many Inupiat suddenly confronted with a rapid influx of miners, reindeer herding seemed a more attractive option just at the moment that Jackson made native ownership increasingly difficult. By 1902, nearly fifty percent of the over four thousand reindeer in Alaska were in non-native hands.<sup>52</sup>

Not everyone agreed with Jackson’s plan to make the Inupiat into a wage-labor serving class, and he was eventually forced to resign.<sup>53</sup> In 1907, the federal policy shifted back toward Inupiat ownership as a method of advancing them toward civilization “under [the] competent direction” of secular educators.<sup>54</sup> Government and mission herds were to be distributed among as many Inupiat as possible; by 1916, there were almost 1300 native herders with their own stock. This produced many small herds, about fifty reindeer per owner on average; too few to be economically viable but enough to undermine the social ties between wealthy Inupiat leaders and their patrons that held together village life. The reindeers, meanwhile, preferred to migrate along the routes where they were born and spent their first years, which made splitting herds difficult; Inupiat herders had to expend considerable time and effort keeping their stock on new pastures.<sup>55</sup>

The Bureau of Education understood that dispersed ownership, while desirable from the standpoint of bringing Inupiat into the franchise of private property, fell short of “the successful commercializing of the industry, the advancement of the enterprise from a branch of industrial education to one of the industries of the country.”<sup>56</sup> Private property needed profit to tie it with



the broader national goals of feeding the nation; in 1915, the Department of the Interior called for “a systematic effort to introduce [reindeer meat] throughout the United States” since Alaska could provide an “almost unlimited” supply.<sup>57</sup>

For the Bureau of Education the solution to small, unproductive herds was the formation of joint stock companies where each reindeer counted as share and the combined animals were put under the management of a paid chief herder and his staff. To promote this idea, the Bureau of Education organized a series of reindeer fairs. Starting in 1915, the annual events gave the Bureau contact with herders who were no longer necessarily the recipients of apprentice training. The government emphasized the formation of economically-viable stock companies, urged competition between reindeer corporations and encouraged individual pride in herding techniques through contests in lassoing, sled-pulling and butchering. Evenings were filled with reindeer-themed songs and stories. After a week of meetings, displays of new techniques, and speeches, herders paraded their best animals and winter clothes.<sup>58</sup>

The fairs were hugely popular among the Inupiat, and helped cement the idea that reindeer herding was an integral part of their present culture and future well-being. Then, in 1918, a ship from Seattle brought influenza to Nome. The pandemic spread rapidly through native communities. Reindeer fairs ceased, ending much of the attendant cultural momentum surrounding the industry as well. With many of their herders dead, reindeer that had been shuffled, divided, and recombined over the last decade were left untended to roam northwestern Alaska.

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Herded or not, the reindeer were doing quite well. Introduced when the caribou population was small, the Seward Peninsula offered ample room for expansion. In 1911, there

were 33,629 domestic reindeer in Alaska; four years later, there were over 70,000 mingling and mixing as they ate their way across the tundra.<sup>59</sup> There were more reindeer than Inupiat able and willing to herd them, and more reindeer than the government could easily control. In 1914, Carl Loman, an entrepreneur based in Nome, bought 1200 reindeer from a Saami herder. Loman, like the Bureau of Education, had plans for large-scale industry, but saw the tundra as effectively empty; Loman wrote that to call it “‘the reindeer industry’ was to make it seem more substantial than it really was. At the time we entered it, unfenced public domain was roamed by herds of semiwild docile reindeer.”<sup>60</sup> Moreover, this disorganized, ownerless space had “no outside markets for meats and hides.”<sup>61</sup> Loman spent the years of the reindeer fairs buying up animals owned by missions or other non-natives, gradually amassing a consolidated herd to rival the indigenous corporations.

Loman’s motives, and those of the Bureau of Education, were not vastly different: both believed that Alaska was supposed to feed people, and a lot of them. For non-natives looking at the Arctic space, this would make it modern, first, by combating the whims of nature that produced starvation, and then by tying people “outside of the activities and progress of the world” to the rest of the country through the market.<sup>62</sup> Despite whoever might be the proper owner of Alaska’s reindeer, the industry seemed poised to make of the tundra something great. In 1921, having eaten deer meat in Nome on his way to Chukotka, the Arctic adventurer John Burnham observed:

“Some day [...] when the last great grazing areas of the temperate zones have been broken by the plough for the raising of cereals, fruits and vegetables and the ever increasing population of the earth has turned for much of its meat supply to the colder slopes that will grow nothing but the forage for [reindeer] pasture. This is not a dream, not even a prophecy, but a commonplace statement of the inevitable.”<sup>63</sup>

## **Chukotka, 1917-1940**

When Burnham wrote of the inevitability of a booming North Pacific that fed the world he was sailing to Chukotka, which he described as a country of “low mountain ranges indescribably jumbled [...] a spectacle that is impressive in its wild ruggedness.”<sup>64</sup> This landscape, Burnham noted with pleasure, was a vision “of virgin loveliness,” its barren slopes lonely and timeless.<sup>65</sup> The land was, of course, hardly virgin to its long-time inhabitants, the Chukchi and costal Yup’ik. It also stood within the reach of revolutions and all the history they entail.

In 1921, the revolution on the ground in Chukotka was not yet Bolshevik. The transformation that shaped daily life came from the growth of reindeer pastoralism in Russia’s Far East. The eighteenth century was a cool time in the arctic, good for the cold-loving reindeer, as more does brought their fawns to term without the stress of heat and more fawns survived their first shaky steps. The Chukchi, who had used domesticated reindeer as draft animals for a century but strenuously avoided killing them for food, suddenly had more tame animals than necessary for transport. For the next fifty to eighty years, the domestic herds grew while the annual wild reindeer hunt continued. Then in the early nineteenth century, the climate ceased cooperating with the reindeer, and their population – wild and domestic - crashed. Driven by a need for meat and hides to make tents and clothing, herders began to kill their stock. This was transformative; now reindeer were both food and transport. After this pivot, there were sufficient new and dependable calories on the tundra to quadruple the human population in four or five generations.<sup>66</sup> Thus when Burnham found the “peninsula much more thickly populated [with Chukchi] than we had imagined,” he was witnessing the recent product of human adaptation.<sup>67</sup>

The advent of specialized, nomadic reindeer herders produced a tradable, ambulatory, self-perpetuating surplus of calories and hides. With the surplus came social stratification; reindeer were owned as private property, and not all herds were the same size.<sup>68</sup> There were poor herders, rich herders, struggling families who worked for wealthy herders, and those who turned to the sea, where whales and other mammals thrived in the same warm conditions difficult for reindeer.<sup>69</sup> Fortunes could reverse rapidly, since disease, weather and simple bad luck could fell reindeer as much as their human minds. This happened in Chukotka between 1895 and 1915, when a local Russian official reported that “many natives have lost more than half their herds.”<sup>70</sup> Such disasters served to change who was rich, but not that some herders had more than others. Chukotka in the early twentieth century bore considerable and consequential inequality, with five to ten percent of the herders controlling between half and two-thirds of the reindeer.<sup>71</sup> It was, in Marxist terms, a society of “rich exploiters who... began to seize the reins of power” and left the poorest to bear “the full burden of colonial and class oppression.”<sup>72</sup> It was also a society ready to be washed by the “waves of the socialist revolution” toward a better future.<sup>73</sup>

The Soviets saw class exploitation among the Chukchi, much like Americans saw starvation among the Inupiat, as a social problem; as in America, the Soviet Union found a solution in the human relationship with reindeer. In Chukotka, the socialist form of modernity required taking privately owned herds and transforming them into a collective enterprise that would uplift the abused and exploited herder. Moreover, putting the “backward tribes of the north” on the road to socialism was, in the argument of Chukchi ethnographer Waldemar Bogoras, not merely an act of class solidarity but of national importance: almost one-third of Soviet territory was taiga and tundra, rich in animal wealth best exploited by the indigenous peoples whose knowledge and adaptations could make it fully productive.<sup>74</sup> Among the few, like

Bogoras, concerned with the north, native uplift and national uplift were linked.<sup>75</sup> It would also not happen without prompting; to put the northern wastes and their wasted people on the road to transformation, Bogoras argued that “we must send to the North not scholars but missionaries, missionaries of the new culture and new Soviet statehood...ready to take to the North the burning fire of their enthusiasm born of the Revolution.”<sup>76</sup>

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It would take some time for revolution to break over Chukotka. The Tsarist government had maintained, at best, a tenuous hold among the Chukchi, whose isolation granted them the designation of “aliens not fully conquered” and considerable administrative berth, leaving little organizational capacity for the Soviets to requisition.<sup>77</sup> Not only was Chukotka distant from governmental oversight, it was very close to the United States. Healy and Jackson were but two of the many Americans doing some sort of business on the left edge of the Bering Strait. Most of the foreigners coming to Chukotka were traders out of Nome - a town founded on gold but with visions of being the commercial hub of what one Treasury Department official called “a great American Baltic” where “imports and exports will cross the straits back and forth in numberless vessels.”<sup>78</sup> In the first two decades of the twentieth century the vessels numbered about ten but did a brisk business trading tea, tobacco, rifles, rum, sugar, flour, beads and household goods on the Chukchi Peninsula for furs, walrus ivory, fossilized mammoth tusks and reindeer skins.<sup>79</sup> When the first *Revkom* (revolutionary committee) was established in Anadyr in 1919, it was overthrown by merchants less than keen to have their storehouses nationalized; this group, some of whom apparently based out of Nome, claimed to be the new face of Soviet power in Anadyr. This ruse did not fool revolutionary leaders in Kamchatka, who promised retribution, and after a mere forty days of peddling tobacco for profit under an assumed Soviet banner, the merchants-

cum-communists fled back to Alaska.<sup>80</sup> But full Soviet control did not readily follow: two years after the false *Revkom* was disbanded, American ships still made birth along the Chukotka coast, the British Hudson's Bay Company was expanding north from Kamchatka, and Japanese miners wandered the Peninsula in search of precious metals.<sup>81</sup> Not until 1923 did the Soviets stop competing with American traders for Chukchi souls, or at least who filled Chukchi stomachs and pipes.<sup>82</sup>

The representatives of the revolution, when not contenting with the merchants, were "first of all struck by the backwardness of the [Chukchi] population."<sup>83</sup> Although committed to bringing a gradual and protected change, the first Soviets in the Far East were as disconcerted by the Chukchi as were the Americans employing them in Alaska: both were particularly appalled by the eating of lice and habit of using the same bowls for human waste and human food.<sup>84</sup> The smoke of the Chukchi tents, the lack of laundering or bathing, and the general "primitive mode of life" had carried no romance of an innocent Marxist past; instead, in the words of a teacher, Chukotka was a country with "no schools, no medical services" where the people were "steeped in superstitions and ignorance."<sup>85</sup> It was possible to be too primitive a communist. Education, indeed transformation, was required.

This was a delicate process, however. The few Soviet representatives in Chukotka in the 1920s and 1930s arrived with missionary zeal to assist, but did not speak Chukchi or possess the skills to contend with the "severe winter, which lasts almost all year long."<sup>86</sup> Many came prepared to find the classless, proto-communist societies described by Marx, exploited by "avaricious wolfish hucksters of diverse nationalities, for the most part Americans" and happily awaiting salvation through collectivization.<sup>87</sup> Instead they found that the Chukchi social order tolerated considerable inequity but was politically so decentralized that efforts to organize local

soviets was repelled by the “absolute lack of any form of self-government.”<sup>88</sup> Equally delicate was the question of reindeer. The fight against backwardness required making the arctic landscape more productive and more equal. By the late 1920s, this meant collectivization, an experiment originating out of ideological commitment and grain procurement efforts in the south and exported north more or less wholesale. Small-scale herders were to pool their deer, and the rich “exploiting” class would relinquish their stock for the common good. The purpose was dramatic social and economic transformation: collective farms, in the words of Anatolii Skachko, a vocal advocate of northern peoples and their development, “must not simply be conceived of as a strong manufacturing enterprise creating mass output of commercial reindeer products, must not just become an important source of raw materials” but must be seen as the chief way to stimulate “the collective action of poor and middling herders, assisting in their liberation from material dependency on the kulaks.”<sup>89</sup>

The instigators of this transformation, however, knew very little about reindeer.<sup>90</sup> Ivan Druri, who arrived in Chukotka in 1929 to found the first reindeer collective, recalled how “It was necessary to prove to the Chukchi that we wanted to organize a large Soviet enterprise” but doing so “required the advice and help of the local experienced herders.”<sup>91</sup> As a result, the first task of the *sovkhos* was to “research the most important examples and methods of regarding reindeer herding, developed by local workers” and create a plan for further communist development from their observations.<sup>92</sup> Although the First Five Year Plan called for the Soviet Union to speed history up, reindeer collectivizers started back in hot smelly tents, helping with the deer “when we were able.”<sup>93</sup> Developing the north might be of national importance, but the nation knew little about the north they were developing, leaving the transformers of backwardness to become a little backward themselves.

Druri spent the next three years building the Snezhnoe *sovkhov* – the first collective in the region and one of the first in the Soviet Union, the location apparently chosen in the belief that if collectivization could happen among the Chukchi it could happen anywhere.<sup>94</sup> Starting from “regular first-hand observations in the nomad camps,” Druri and his colleagues began to assemble an understanding of reindeer production.<sup>95</sup> Across the north “the local population” was surveyed “to determine the pasture requirements of the reindeer during various seasons, the grazing technique, the size and the composition of the teams of the herdsmen and the state of the zoo-veterinary services.”<sup>96</sup> The communist missionaries noticed that the Chukchi with large herds valued fecund does especially, and “never once gave” female deer to poorer herders, only providing bucks for “sustenance and clothing.”<sup>97</sup> This kept valuable breeders out of the hands of the oppressed and maximized the ratio of females to males in the large herds, which in turn kept the annual meat production high. The Chukchi deliberately interbred their domestic animals with wild stock “to improve the qualities of their reindeer.”<sup>98</sup> Small herds, it seemed, had little leftover meat or skin after household use; only large numbers of animals offered a commercially significant surplus.<sup>99</sup> Since surplus was the goal, Druri and other Soviets in the north concluded that state and collective farms needed large herds.

While Druri was among the *yaranga* (tents) learning from the Chukchi how to drive a sleigh and dress properly, the Chukchi were learning from him what, exactly, collectivization meant: relinquishing their private property to the control of the state farm. As a *sovkhov*, Snezhnoe had the mission of nationalizing the wealth of the richest herders, a charge even more fraught than organizing a *kolkhoz*, or collective farms of smaller herders. Druri initially tried to buy deer from wealthy herders, but by 1932 this had netted the Snezhnoe *sovkhov* a mere “herd



of 236 does,” far short of the forty thousand head he had been tasked with collectivizing by 1933.<sup>100</sup>

As the ideological climate of the 1930s increased the pressure to collectivize across the country, buying reindeer was replaced with outright requisitioning. In response, wealthier Chukchi, or in the words of one veterinarian, “hostile class elements,” started the “mass destruction of reindeer, burning of pastures etc” rather than hand their animals over to the state.<sup>101</sup> Other herders went to ground, moving deeper into the tundra. “The reindeer has many enemies,” one *kolkhoz* director wrote, “blizzards, wolves, warble flies and hoof-rot (*kopytka*) can bring considerable damage” and “much effort and persistence is required of herders to protect and increase the stock of reindeer.”<sup>102</sup> In the chaos of collectivization, there was not sufficient Chukchi persistence to go around or non-native expertise to compensate. Although the Soviets primarily blamed reactive kulaks for harming reindeer, the animals had to contend with disrupted migration routes, which put stress on pregnant cows and left the herd open to predation and even starvation. Untended reindeer rapidly became half-wild. Tamelessness was not a heritable trait, but one born of exposure; with human affairs in disarray the advantages of hanging around camp were considerably diminished. Revolution became another enemy of the reindeer, at least in tamed form: the Chukhokan herds lost over 100,000 animals – about a fifth of the total – before 1940.<sup>103</sup>

The Soviets were aware that having the Chukchi kill their own stock was hardly conducive to the goals of socialism. While full collectivization – the commitment to which had become a sort of loyalty test for rural officials across the Soviet Union in the 1930s – was still the goal, the pressure to collectivize every living thing and practical object on the tundra was reduced. Organizers emphasized enrolling in voluntary *kolkhozy* over the formation of state-run

*sovkhoz* in the later 1930s.<sup>104</sup> Families were allowed to privately own up to six hundred animals. These changes eased the resistance to collective herding, and by 1940 over 80% of Chukotkan reindeer were running in collective herds managed by dozens of *kolkhozy* and a few state farms.<sup>105</sup>

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The presence of numerous small collectives did not signal the end to backwardness. Part of this was lack of education: as nomads, Chukchi children were raised in “miserable conditions” that precluded literacy, proper hygiene, and food more wholesome than warble fly larvae.<sup>106</sup> The result, in the words of one teacher newly arrived from the west, was that “the children are utterly savage.”<sup>107</sup> Schools were constructed around the Peninsula starting in the 1920s, but mobile Chukchi parents had to leave their children with non-native teachers for months at a time, a situation that led to low enrollment and runaways uninterested in haircuts, baths, reading and the other vestiges of “civilized behavior.”<sup>108</sup> Enlightening the backward habits of the Chukchi required that they settle, but reindeer had to move; as one theorist of development pointed out, “fighting against migration as a productive system in reindeer herding would mean the annihilation of tundra husbandry.”<sup>109</sup> But, based on the observation that larger herds produced more surpluses, the journal *Sovetskii sever* (*Soviet North*) and an emerging group of reindeer specialists proposed a solution. With proper collectivization, the necessarily peripatetic work of reindeer herding could be shifted from many families of varied wealth and uniform misery to specialized, mostly male brigades that “would liberate women and children from the burdens of nomadic life.”<sup>110</sup>

Collectivization would also solve the problem of the reindeer. In the era of five year plans, surpluses were supposed to become more astonishing regardless of demand or the ability

of distant provinces like Chukotka to meet it. However, the herd numbers were not cooperating: in the 1930s and 1940s, the head count was crawling downward, reaching a low of 408,422 head in the early 1950s.<sup>111</sup> The reindeer needed stable climatic conditions and good fodder to regain the body fat necessary to birth healthy fawns, a process that can take a generation at least to nudge the number of fawns born above the number of deer killed annually. As a result, the deer's reproduction rate was literally lagging.<sup>112</sup> Even so, for the engineers of northern advancement, the answer to low herd numbers was not related to the biological condition of their herds so much as the herd's form: more animals would be the result of consolidation, since large herds could be minded by specialized brigades, and this would facilitate "better protection of the animals, timely discovery of their desertion from the herd, successful mustering of the stock" and would keep pastures in good condition.<sup>113</sup> The tundra as a whole could then become more productive; as Skachko argued, without large collectives there was "a conflict of interest between herding and hunting on the tundra. In order to protect reindeer in winter, it is necessary to move south to the tree line while for winter hunting it is best to head north to the open tundra."<sup>114</sup> Once labor was freed from the demands of herding it could turn to hunting and trapping. By the 1940s, the tent-squatting of Druri's early years was over; the Soviet Union had learned what it needed in order to create a "short road to socialism" out of the "rule of poverty, darkness and ignorance."<sup>115</sup> It was now a matter of "ensuring a continuous increase of reindeer livestock in the USSR, both with regard to quantity and quality."<sup>116</sup>

### **The Seward and Chukchi Peninsulas, 1930-1960**

While the Soviet reindeer spent the 1920s and 1930s being reordered, re-imagined and reduced, the herds in Alaska were flourishing: by 1929 northwestern Alaska was home to

400,000 head.<sup>117</sup> As the total number of reindeer grew, so did the size of individual herds. Following the construction of a federal reindeer experiment station at Unalakeet in 1920, the Bureau of Biological Survey argued that small closely watched herds were inefficient; it was better to run many head in open groups. In order to modernize, the Biological Survey recommended that reindeer be treated like cattle on the western prairies, where centralized ranches allowed for settled life while animals grazed “on a system of allotted ranges” that, with “improvement of herd management, enactment and enforcement of a brand registry law, and the control of diseases and parasites” would increase reindeer productivity.<sup>118</sup>

Finding a rational method of allotting range space – which in the 1920s was federal, technically owned by everyone and thus, in practice, effectively owned by no one – was critical for the Biological Survey. Without ordered control over who grazed their animals where, some parts of the tundra were over-used and others left fallow. This inefficiency, arising from “poor distribution of reindeer, close herding and mishandling” - mistakes the biologists saw as usually Inupiat in origin – lowered the number of reindeer the tundra could support.<sup>119</sup> Such a problem could be corrected through planned and clearly allocated ranges. L.J. Palmer, a senior biologist at the Bureau, based his analysis of herding inefficiency on the emerging ecological concept of carrying capacity, or “the number of animals that can find sufficient palatable forage [...] year after year, without injuring the plants.”<sup>120</sup> In Alaska, Palmer calculated that each reindeer required thirty acres of good range, if managed so as to protect lichen growth and combat overgrazing. Thus with proper – meaning efficient – administration of the tundra, Alaska’s reindeer should run three to four million head.<sup>121</sup> This was welcome news to some in the 1920s, when major U.S. cities worried that meat was in increasingly short supply; William Randolph

Hearst cited the reindeer as a solution to New York's booming, potentially protein-starved population.<sup>122</sup>

While reindeer could be "a large factor in the development of the [Alaska] Territory," and feed the mouths of New York, who would own this development was still up for debate.<sup>123</sup> There were, leading into the Great Depression, two groups with claim to Alaskan herds: the increasingly consolidated Inupiat cooperatives and the Loman Reindeer and Trading Corporation. Both needed markets for what was now an undeniable surplus. To keep the peace, Carl Loman sold reindeer products only outside of Alaska, leaving local concessions to native herders. Loman was an aggressive and creative marketer, courting food critics, pet-food manufacturers, and the armed services as potential consumers.<sup>124</sup> Reindeer meat was promoted, sometimes with a live-animal prop, as healthful and pure, raised outside the socially and hygienically suspect packing plants revealed in Upton Sinclair's *The Jungle*.<sup>125</sup> This met with some success; by 1929 almost 6.5 million pounds of reindeer products had been sold to cities in the continental United States.<sup>126</sup>

Reindeer meat, no matter how praised by food critics, could not avoid the ravages of the Depression or the campaigning of the beef lobby. Loman's enterprise lurched toward bankruptcy in the 1930s. The market for reindeer meat within Alaska was already minimal, as the gold rush boom years ended. This left the Inupiat with little market and much product, a situation that caused enough stress between native herders to create a wild-west like atmosphere of theft between herds. When reindeer oversight passed from the Bureau of Education to the Alaska Governor in 1929, the federal government appointed a Reindeer Committee to audit the industry. The first report, issued in 1931, was blatantly pro-Loman, and produced considerable political agitation on the part of the Inupiat and Indian activists. The Department of the Interior called for

a new investigation; this time the Lomans were denounced for invading Inupiat ranges, “forcing Eskimos to run their reindeer with those of the corporation; piling up huge herding and management costs; taking restricted Indian property to reimburse themselves for whatever they considered the Eskimos’ share of those costs.”<sup>127</sup>

This brought Alaska reindeer to the attention of Roosevelt’s Indian affairs commissioner, John Collier, a stark critic of the assimilation-through-property ethos that had reigned in the Bureau of Indian Affairs since the Dawes Allotment Act of 1887. Collier’s policies emphasized cultural pluralism and the need for indigenous peoples to engage in traditional economic practices, and were threaded with a romantic understanding of indigenous life as separate from, and indeed an antidote to, the disenchantments of the modern industrial economy.<sup>128</sup> After examining the Alaska case, Collier concluded that reindeer herding was a traditional part of Inupiat existence and that the practice should be protected and promoted exclusively for Inupiat economic and social well-being.<sup>129</sup> Non-natives, therefore, had to be removed from the reindeer business, thus “preserving the native character” of the industry, which could then develop in a “native way” on “native lands.”<sup>130</sup> After considerable political wrangling, the 1937 Reindeer Act bought out the failing Loman enterprise and made non-native ownership of reindeer illegal in order to “establish and maintain for the said natives of Alaska a self-sustaining economy.”<sup>131</sup>

The United States government had first created a tradition and then had to protect it. This new tradition, however, was subject to very modern laws: the Bureau of Indian Affairs wanted to disband large collective herds for “individual enterprisers and their herder-partners” who would keep “vigilant custody of such breeding stock as they can manage.”<sup>132</sup> With the government overseeing the effective use of rangeland, herd management techniques, and new markets for reindeer products, the herders would be motivated by “fear of losing money by losing strays, by

hope of extra rewards for especially good management, and the end result would be an efficient, productive system in which “the number and size of herds will be limited by the rewards which herders are able to obtain from herd crops: supply and demand.” Combined with scientific expertise on “efficient techniques” provided by the government, the laws of economics and biology would produce social self-sufficiency, and “give [native] owners freedom to do what they ought with regard to the rights of others.”<sup>133</sup> The invented tradition was that of Jackson’s idealized Saami: good free citizens filling grocery stores while “advancing in civilization.”<sup>134</sup>

All reindeer were now Inupiat-owned, not all Inupiat were owners. After three decades of apprenticeships, non-native competitors and changing government directives, the whims of reindeer policy and the marketplace made herding look no more stable than the whims of nature. Herding had become, for many Inupiat, one possible means among many for obtaining food and cash, a part of the diversified range of activities that had always allowed for survival in the northern climate. But the reindeer experiment created more than part-time herders; it created a great many reindeer. Having outpaced the demand for their meat and hides, many animals spent the Depression years in a state of uncertain ownership, of little market worth, and spread across open ranges and thus often escaped both human oversight and the dinner plate.<sup>135</sup> Left alone, the reindeer followed their own imperatives; they migrated, grazed, and above all, bred. By the early 1930s, there were 640,000 domestic *Rangifer* in Alaska. They were not ignored by wolves, or by caribou whose ranks they joined, going feral into the deep interior. In their vast numbers, “Alaska’s food,” the Territory’s Congressional delegate noted, was “eating up Alaska.”<sup>136</sup>

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In North America, reindeer were eating the future state of Alaska, while in the Soviet Union the state was eating reindeer to save its future. Or at least this was the idea in Chukotka,

where reindeer became part of the war effort: “Comrade Mivet donated 100 reindeer for the creation of a tank convoy. Comrade Vatirgin donated 15 reindeer and 1070 rubles [...] the successful collection of aid continues everywhere.”<sup>137</sup> Besides making donations to buy equipment for the front, Chukotka sent 4.8 million rubles’ worth of reindeer meat out of the district during the Second World War, along with considerable shoe leather.<sup>138</sup> The drive to defeat fascism made the Chukchi “fervently strive to achieve new successes in the construction of *kolkhozes*, in order to prove again their support of our war.”<sup>139</sup>

A more successful *kolkhoz*, in the 1940s and into the 1950s, was increasingly seen as a *sovkhos*, a collective enterprise in which the Ministry of Agriculture, not the members, set production quotas and property was held by the state rather than shared among herders. Although both *kolkhozy* and *sovkhozy* were organized during and after WWII, the trend was for fewer, larger collectives with the private control of reindeer dropping from 20% in the 1940s to 6% by 1960.<sup>140</sup> These farms, according to the head of the Scientific Research Institute of Arctic Agriculture F. Gul’chak, “insured uninterrupted growth of reindeer breeding,” and were responsible for “reindeer in the Soviet Union increas[ing] by 46.7%” from 1933 to 1951.<sup>141</sup>

Such dramatic increase was owed, in the view of the new generation of reindeer experts, to new “technical equipment” for herding, including not just the transition to large herds but the use of “permanent or transferable enclosures for counting and veterinary and zoo-technical treatment of animals.”<sup>142</sup> These advances were meant, quite simply, to create more reindeer, since “Socialistic reindeer breeding could not agree to numerous losses and predations.” To protect against disease, animals were, in the ideal scenario, rounded into a corral for veterinary inspection every three months, provided with sun shades in the summer, vaccinated to “liquidate” anthrax, and doused with chemical insecticides to reduce warble flies and other



parasites.<sup>143</sup> Because wolf predation forced herders to cluster their deer in a manner damaging to the animals and the rangeland, “the extermination of wolves [...] would considerably increase productivity.”<sup>144</sup> Once predators were off the range, more fawns would survive, allowing for the selection of breeding stock. One veterinary manual advocated branding does and keeping breeding records of each animal, for base of “objective information on the ability of reindeer does to transfer useful economic features to their progeny” – knowledge that with selective breeding would produce “considerable improvement of the animals’ quality [...] and increased productivity of the farm.”<sup>145</sup>

Reindeer experts were also intent on the “rational planning of pasturing.”<sup>146</sup> Following aerial surveys and hand inspections of the Chukotkan tundra in the 1930s, which assessed the composition of lichens, grasses and scrub, one scientist wrote that “the reindeer pastures of each *kolkhoz* and *sovkhos* [were] divided and allotted to brigades in accordance with the head count of reindeer. As a result of this work, the necessary conditions exist for organizing the correct use of range land with a calculated reserve for regenerating range fodder.”<sup>147</sup> With each farm assigned a territory, and each territory partitioned according to which “seasonal utilization” offered the best reindeer nutrition, and each parcel then rotated periodically to avoid overgrazing, reindeer scientists had planned a standard tundra.<sup>148</sup>

A standardized tundra was a productive one, a space edited of inefficiencies. This was important, since “Collectivization,” in Gul’chak’s words, “put before reindeer breeding higher requirements” and made quantity “the basis of correct organization.”<sup>149</sup> It was important, therefore, to know the maximum number of reindeer that each collective’s allotted territory could raise, so maximum efficiency could be assured. For many Soviet scientists, there existed a “reindeer carrying capacity,” a fixed maximum that could be determined, as in the U.S., from

surveys of plant types and reindeer grazing habits.<sup>150</sup> V. Ustinov, a specialist in the Magadan land-use office, however, saw set carrying capacity as an “incorrect opinion of certain managers,” and argued that herd size could continue to grow with “new forms of organizing the reindeer herd.”<sup>151</sup> But whether or not the modern arctic could be measured by a fixed number of reindeer or was visible in an ever-expanding bounty of meat and hides, it was the consensus among reindeer experts in the 1950s and 1960s that there was still work to be done; Gul’chak contended that the Soviet Union’s total stock could increase by two and a half to three times. And whether or not the arctic was infinitely productive or merely capable of supporting millions more deer, by the late 1950s the consolidation of farms and the partitioning of allotted territories were fully underway. A new reindeer, bred for the maximum quantity of meat, now grazed on a newly organized pasture and led onto prescribed migration routes, and was meant to support the maximum number of animals.

Overseeing the new reindeer was a new herder, no longer part of a nomad family group, but a member of a brigade that included “a foreman, 4-5 herdsmen [...] a learner, and a woman who takes care of the ‘chum’ (herdsmen’s tent).”<sup>152</sup> These brigades worked on the tundra for several months at a time, where they worked in shifts to monitor deer, pastures, diseases and predators; after twelve or twenty-four hours of this vigilance, herders would return to camp for a few days rest. Camps themselves were “huts...dragged by tractor to the necessary location, where the herds need to graze” and were often linked with the central *sovkhos* manager by radio.<sup>153</sup> Most members of the brigade were not related, with families now moved into apartments in villages around the Peninsula, where they were educated in “secondary schools, Teachers’ Training Schools, vocational schools and all kinds of courses” including reindeer herding and veterinary practice.<sup>154</sup> Reindeer work had become like factory work, run in shifts

and with production quotas set nationally, “based on the projected plan of economic development” and requiring specialized classroom education along with practical field instruction from experienced herders and veterinary personnel.<sup>155</sup> This produced not just better “organization of land exploitation” and “technical equipment for reindeer breeding” but left time for the “liquidation of illiteracy [...], organization of the zoo-veterinary network, measures taken for training and improvement of the training of reindeer breeding personnel, and also the work of the ‘red tents’ – the political instructional institutes in the tundra.”<sup>156</sup> A rationally organized arctic, made productive for the greater good of the Soviet Union also created Soviet citizens, “first-rank workers of the tundra, people of a new type, who unflinchingly and every year achieve high indices in the field of reindeer breeding.”<sup>157</sup> And the people of a new type were presiding over growing herds. There were over 500,000 reindeer in Chukotka by 1960, slightly surpassing the population in the early 1920s.<sup>158</sup> New reindeer and newly forged herders were signs that the construction of socialism, according to T. Semushkin in his Stalin-prize winning novel about Chukotka, had “regenerated life on the cold land and conquered the dead wastes.”<sup>159</sup>

## **Conclusion**

In the last years of the nineteenth century and the first half of the twentieth, the relationship between human beings and *Rangifer tarandus* was transformed on both sides of the Bering Strait. In both countries, a handful of bureaucrats, educators, missionaries, and cadres dreamed high modernist dreams about what the arctic could become, and in the quest to populate their northern territories with citizens and bring from them a surplus that would aid the nation, the United States and the Soviet Union created new forms of reindeer practice. Semi-sedentary Inupiat became peripatetic owners of private property, while nomadic Chukchi became settled

shift-working herders of collectivized reindeer. People, both native and otherwise, ate reindeer meat. A few Chukchi and Inupiat had roles in politics, either in the Communist Party or advocating the native ownership of reindeer. A great many learned to read. A greater number, perhaps, forgot the multitude of subsistence tasks that comprised the annual round before the state arrived with dreams of a tundra that would feed the world.

In the abstract, this dream of a productive tundra had a common plot on both sides of the Bering Straits: with the modernist tools of measurement and reform, each country would transform the static and cruel cycles of nature into a predictable and productive space. Reindeer were the enabling object in this scenario; through their increase the people in the arctic would be freed from material want and social deprivation while joining their countrymen in progress toward a better future. It mattered, however, for native people and for reindeer if they were journeying from timelessness to capitalist history or from backwardness to socialist utopia. In the United States, Sheldon Jackson and the Bureaus of Education, Indian Affairs and the Interior worked to bring the Inupiat closer to the market economy. Commercial production required that at least some Inupiat trade their diverse and constantly shifting subsistence activities for the specialized labor of owning and herding reindeer; in periods when many Inupiat owned herds, production for a market outside the village undermined traditional patronage hierarchies. And as an agricultural commodity rather than one of many animals eaten in the course of a year, *Rangifer* became a form of property while alive rather than following the hunter's kill. For reindeer, being the object of capitalist accumulation meant that sometimes they were in demand and sometimes not – left open to predators and disease when the markets were down or carefully tended in periods of higher demand.

For Soviet reindeer, being owned by the state was initially tumultuous and, in some locations, disastrous, but eventually produced a fairly constant relationship between themselves and humans. There was always demand for more animals in the Soviet Union even if there was no one to eat them, so once collective farms were established reindeer were husbanded with more consistency than their capitalist neighbors, and often protected at the expense of wild *Rangifer* and other species. However, this level of attention, organized by collective farms rather than private owners, required a fundamental reorientation of Chukchi existence. Rather than a way of life, nomadism became the temporary condition of shift work in what was, essentially, the tundra as reindeer factory. The scope of social change was, for the most part, greater in the U.S.S.R. than in the United States; the Soviet Union had more arctic territory and therefore was more concerned with investing in it, not to mention a greater commitment to transforming people's lives with a very visible hand, one that closed entire villages, rearranged ethnic communities, and packed suspected class enemies off to hard labor. The Inupiat faced disease, alcoholism, and the social disruptions brought by miners and missionaries, but overt force was not the United States' method of choice for dealing with indigenous Alaskans. There were moments in the 1930s Soviet Union when the pressure to advance was fierce enough to make violence a possibility. As a result, the Inupiat could often add reindeer herding to their list of economic activities without fundamentally altering how they understood the world or organized their social lives, while Chukchi herders could not opt to own private reindeer or travel behind herds with their families as they had done for generations. However, the very act of herding tamed reindeer was new in the United States even when selectively practiced, just as collectivization remade the human-reindeer relationship even if it never produced the herd sizes

anticipated. The ambitions of Jackson, Druri and the other scattered champions of northern development did create something new under the midnight sun.

This is not to say that everything went according to plan. In both countries, the plan itself was usually in a state of revision, particularly when it came to who should control the reindeer. In Alaska, the initial goal was for the government to cede ownership gradually, once the correct level of civilization was achieved by the Inupiat; this shifted during the gold rush to include non-native entrepreneurs and then returned to Inupiat-only ownership, where it stayed. In Chukotka, collectivization began rapidly, too rapidly, and had to be scaled back to allow some private control of deer in the early years. The zigs and zags of policy were often not beneficial for reindeer, left untended among wolves and their wild kin or deliberately killed, and did little to enlist native support. In the end, however, Chukotkan reindeer were exclusively collectivized by a small number of state farms and Alaskan reindeer exclusively owned by a small number of indigenous herders.

The right sort of ownership did not necessarily yield the expected results. Some Inupiat did become deer owners and engaged with the market by selling reindeer commodities, but there was no protein crisis in the United States or at least not one large enough that the beef lobby could not avert it; as a result, reindeer meat in the United States reached markets beyond Alaska for only a few years. Moreover, herding reindeer did not fundamentally reorder Inupiat society. Not every household came to own reindeer, and those that did mostly incorporated herds into a worldview and social milieu governed by decidedly Inupiat rules, not those of supply and demand, or even life, liberty and the pursuit of happiness.<sup>160</sup> The Soviet Union, having dramatically roiled its agricultural production in the 1930s, had more need for meat than the United States, and more dramatically changed social life among the Chukchi in producing it. The

desire to make work equal, to collapse the differences between urban factory work and rural tundra herding as much as possible, changed the form of reindeer husbandry. However, the passing of rich herders in collectives did not manufacture equality. By the postwar period, the Chukchi were increasingly pushed into second-class menial husbandry jobs; and while education and a life spent as much in town as on the tundra did produce some local Party leaders and writers, the Chukchi were never masters of their own brand of communism.<sup>161</sup>

High modernist visions, then, radically, if unpredictably, reformed a great many human lives and succeeded in this cold corner of the world in changing history. Doing so had consequences for reindeer as they were bought, sold, collected, dispersed, and otherwise moved in space. The reindeer were not moved in time, not completely separated from the land around them and placed on a fully human-driven progression. What neither the U.S. nor the U.S.S.R. managed was a fundamental alteration to natural history, or more precisely, to *Rangifer tarandus* and the host of non-human forces which let them breed, thrive, and grow or go barren, starve, and perish. Both states arrived in the arctic convinced of the region's backwardness, its timeless position outside the flow of progress. The job of the state was, in many ways, to remove the state of nature and replace it with pure social will. Both the U.S. and U.S.S.R. brought new technologies to the arctic meant to do just this, to speed things up, to make men of a new type on land with new potential - starting, most obviously, with the introduction of domestic animals in Alaska and extending to the use of vaccines, pesticides, new herding methods and new education for herders. What would let the tundra escape backwardness was productivity, and new husbanding technologies were meant to not just make Beringia more productive but make it maximally so; the ideal which informed U.S. policy in the 1920s and 1930s and Soviet

management for the duration was to reach the largest number of reindeer possible by bringing reindeer herds to the threshold of the land's carrying capacity.

In theory, this seemed like a straightforward proposition. Carrying capacity was, and is, understood as the number of animals a given parcel of land can support in perpetuity, a balance between the growth of one population via the consumption of another – or many others, since reindeer eat over four hundred species in their wanderings. In practice this required a great many aerial photographs and scientists bent over the tundra to survey plant densities and the growth patterns of lichen. But, with the tonnage each reindeer needed to eat known, and the composition of pastures surveyed, and with predators subtracted – quite literally – from the equation, at least ideally, and diseases managed, at least significantly, humans were the only thing left to act upon the reindeer. *Rangifer* had been effectively isolated in a space perfect for creating more *Rangifer*. It was also a space profoundly, and ironically, outside of history: once carrying capacity was reached, unless the weather was unusually terrible or some new disease arose among the mosses, there would be no change on the tundra; reindeer would simply reproduce to fill those eaten every year, and the vegetation would likewise grow up to replenish the grazed stubble. In order to make the tundra modern it had to become completely timeless, absolutely unchanging.

That the reindeer might behave according to a more complicated calculus was not immediately clear. In both countries, the herd numbers wavered and then expanded, reaching a high of over 600,000 in northwestern Alaska in the 1930s and nearly 600,000 in Chukotka by 1970.<sup>162</sup> It seemed that socialism had revived the tundra and that capitalism could produce meat from the barrens. Then the herds crashed. In Alaska, domestic reindeer were in crisis by 1940, when herd fell to 250,000 head; by 1950 there were a mere 25,000 left.<sup>163</sup> And across the Pacific, Soviet reindeer herds never reached the dramatic number forecasted by scientists. The high of



580,500 animals seen in the 1970s was already falling, to the mid-400,000s by 1980 and it continued to wane, to less than 150,000 head in the early 1990s.<sup>164</sup> The reasons for the decline are varied and complex. In Alaska, the wolf population expanded along with the reindeer, and in periods when the herds were left untended or grazed on large open ranges, predation rates were high. It is possible that reindeer starved; many herded animals were pastured close to the ocean, where the Inupiat lived and where markets were accessible, so the range may have been overused.<sup>165</sup> The reindeer also arrived at a moment when caribou stocks were low, and as wild *Rangifer* returned to the Seward Peninsula, many reindeer went feral.<sup>166</sup> The collapse of the Soviet Union, which left herders without salaries or equipment, likewise meant the reindeer were exposed to wolf predation, feral wandering and poaching. Periodically, reindeer herds simply decline, do so rapidly, and then regain numbers slowly.<sup>167</sup> Not surprisingly, human error has been blamed for these declines, from the Inupiat being inattentive herders to the sheer grandiosity of making reindeer into a large-scale commodity dependent on state-funded technology.

What undermined reindeer husbandry were neither simply wolves nor simply men, just as it were not only men that allowed reindeer domestication to flourish thousands of years ago. Of course, human activity played a role in increasing – or introducing – reindeer stock, and certainly the twentieth century saw particular adaptations to reindeer use by modern states, particularly the standardized use of rangeland in order to reach maximum herd size. This resulted in a good deal of high-modernist planning in order to carve up the tundra into regular pastures. However, the herds did not decline because of human miscalculations, just as the herds would not increase simply to meet human calculations. Or not solely: even humans lack the raw force of will to be the only thing acting on the tundra. There are humans and wolves, weather and insects, disease

and other reindeer, and the tangled results of all these various things interacting at once, and over time.<sup>168</sup> The Soviets and Americans sought to control this, to keep environmental shifts from causing social changes. It did not exactly work, but knowledge of all the shifting, often unexpected, deeply contingent forces which kept or killed reindeer were hardly transparent to the indigenous populations that predated modern states. These populations had simply adapted by changing themselves, and did so regularly, shifting in response to the confluences of climate, animal habits, plant growth, and the other variances of the arctic world.

Models of carrying capacity were meant to introduce the historical processes of development and improvement, but they did so in an ecological context that, frozen appearance aside, is in fact always changing. It is not possible to make the non-human world static – in part because the human world adapts more quickly; our large brains allow us to bypass the generations-long process of genetic alteration required to fundamentally remake reindeer into the dependably tame specimens that Americans and Soviets sought. This leaves the reindeer out of step, moving back to their old migration patterns even as *kolkhozy* and new owners drag them in a different direction. Moreover, reindeer adapt to, and are subject to, things other than human actions: climate, other animals, and even other reindeer. Perhaps this is what the ambitions of reindeer planners missed. There are more things on heaven and earth than even the most perceptive state or nomad has the power to rush, stop, or remove. Even if every wolf on the tundra was exterminated and every disease vaccinated against, the reindeer population still declines every sixty to one hundred years. High modernism is, if nothing else, a narrative of humans making history – whether Socialist utopia or capitalist plenty, it is invention-fueled change for a better future. However, in the arctic, there is no escape from timelessness into history simply through technological adaptation, because there is no line between history and

ecology: the world is always changing, although on different scales of time and at different levels of adaptation. The reindeer could be, and can be, dramatically reshaped by human endeavor, but reindeer populations are subject to a host of other drives and constraints. History in the arctic, like history anywhere, is both deeply human and trans-human; the land itself has a past and is changing under hoof and foot.

- <sup>1</sup> E. Anderson, "Who's Who in the Pleistocene: A Mammalian Bestiary," in *Quaternary Extinctions: A Prehistoric Revolution*, ed. P. S. Martin and R. G. Klein (Tucson: University of Arizona Press, 1984), 40–89.
- <sup>2</sup> B. C. Forbes and T. Kumpula, "The Ecological Role and Geography of Reindeer (*Rangifer tarandus*) in Northern Eurasia," *Geography Compass* no. 3 (2009): 1356–1380.
- <sup>3</sup> Tim Ingold, *Hunters, Pastoralists and Ranchers: Reindeer economies and their transformations*, (Cambridge, UK: Cambridge University Press, 1980), 18-20.
- <sup>4</sup> The environmental scientist Valarius Geist believes that reindeer also allowed the late Pleistocene takeover of *Homo sapiens* from Neanderthals in Europe; he argues we owe our humanity, literally, to this species. See "Of Reindeer and Man, Human and Neanderthal," *Rangifer* Special Issue no. 14 (2003): 57-63.
- <sup>5</sup> Stuart Fiedel, "The Peopling of the New World: Present Evidence, New Theories, and Future Directions" *Journal of Archaeological Research* Vol. 8 No. 1 (2000): 39-103. See also John F. Hoffecker and Scott Elias, "Environment and Archeology in Beringia," *Evolutionary Anthropology* Vol. 12 (2003): 34-49.
- <sup>6</sup> Vladimir Pitul'ko, "Ancient Humans in Eurasian Arctic Ecosystems: Environmental Dynamics and Changing Subsistence," *World Archeology* Vol. 30 no. 3 (1999): 421-436.
- <sup>7</sup> The primary adaptive difference between *Rangifer* populations on both continents comes from where they live: in woodlands they migrate little, while the tundra reindeer discussed here are seasonally peripatetic. There are also differences in size and coloration between domesticated and wild animals.
- <sup>8</sup> The dating of human habitation in the Bering Straits and in North America is hotly debated by archeologists; current research points toward multiple migrations into northeast Eurasia and across the Straits. For an excellent summary, see Charles C. Mann, *1491: New Revelations of the Americas Before Columbus* (New York: Knopf, 2005).
- <sup>9</sup> N. Dikov *Naskal'nye zagadki dreveny Chukotki: Petroglify Pegtymelya* (Moscow: Nauka, 1971).
- <sup>10</sup> Igor Krupnik, *Arctic Adaptations: Native Whalers and Reindeer Herders of Northern Eurasia*, trans. Marcia Levenson (Hanover: Dartmouth College Press, 1993), 144-147.
- <sup>11</sup> Igor Krupnik, "Prirodnaya sreda i evolutsiya tundrovogo severnogo olenevodstva" in *Karta, skhema i chislo v etnicheskoy geografii*, ed. S. A. Arutyunov et al. (Moscow: Moskovskii filial Geograficheskogo obshchestva, 1975), 26-43. For the climate issue, see Forbes and Kumpula, "The Ecological Role and Geography of Reindeer," 1358–1370.
- <sup>12</sup> Leonid Baskin, "Reindeer Husbandry/Hunting in Russia in the Past, Present and Future," *Polar Research* Vol. 19. No. 1 (2000): 23-29 and Krupnik, *Arctic Adaptations*, 166-168.
- <sup>13</sup> Don E. Dumond, "A Reexamination of Eskimo-Aleut Prehistory," *American Anthropologist* Vol. 89 No. 1 (1987): 32-56.
- <sup>14</sup> Martin Sauer, *An Account of a Geographical Expedition to the Northern Parts of Russia...* (London: T. Cadell and W. Davies, 1802), 46.
- <sup>15</sup> Waldemar Bogoras, *The Chukchee* (New York: E. J. Brill, Ltd, 1904), 480-485; Charles Madsen, *Arctic Trader* (New York: Dodd, Mead & Company, 1957), 133-150; Olaf Swenson, *Northwest of the World: Forty Years Trading and Hunting in Northern Siberia* (New York: Dodd, Mead & Company, 1944), 26-28.
- <sup>16</sup> Richard Bush, *Reindeer, Dogs, and Snow-Shoes: A journal of Siberian travel and explorations* (New York: Harper & Brothers, 1871), 460. For the image of indigenous people, see Yuri Slezkine, *Arctic Mirrors: Russia and the Small Peoples of the North* (New York: Cornell University Press, 1994) and Robert Berkhofer Jr., *White Man's Indian: Images of the American Indian from Columbus to the Present* (New York: Vintage, 1978).
- <sup>17</sup> A.A. Bestuzhev-Marlinskii, *Polnoe sobranie stikhotvorenii* (Leningrad: Sovetskii pisatel, 1961), 294.
- <sup>18</sup> Sheldon Jackson, *The Introduction of Reindeer into Alaska, preliminary report of the General Agent of Education in Alaska to the Commissioner of Education 1890* (Washington: Government Printing Office, 1891), 4.
- <sup>19</sup> *Ibid.*, 7.
- <sup>20</sup> Roxanne Willis places Sheldon Jackson's reindeer project at the beginning of a long line of development efforts in Alaska. See Willis, *Alaska's Place in the West: From the last frontier to the last great wilderness* (Kansas: University Press of Kansas, 2010), 23-47.
- <sup>21</sup> Paul Niedieck, *Cruises in the Bering Sea: being records of further sport and travel* trans. R.A. Ploetz (London: Rowland Ward, 1909), 171.
- <sup>22</sup> Richard Stern et al, *Eskimos, Reindeer and Land* (Fairbanks: Agricultural Experiment Station, School of Agriculture and Land Resources Management, University of Alaska-Fairbanks, Bulletin 59, 1980), 11-13 and Ernest S. Burch Jr., *Eskimo Kinsmen: Changing Family Relationships in Northwest Alaska* (New York: West Publishing, 1975), 17-20.
- <sup>23</sup> Burch Jr., *Eskimo Kinship*, 32-33.

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- <sup>24</sup> This was not a new discovery – the Russians had been concerned about dropping seal, sea otter and beaver numbers for decades. Indeed European interest in the Bering Straits was predicated on the prior near-extinctions of valuable species in more accessible territory. See Ryan Jones, “A ‘Havock Made among Them’: Animals, Empire, and Extinction in the Russian North Pacific, 1741–1810,” *Environmental History* Vol. 16 no. 4 (2011): 585-609.
- <sup>25</sup> Niedieck, *Cruises in the Bering Sea*, 115.
- <sup>26</sup> Sheldon Jackson, *Report of the Commissioner of Education For the Year 1894-95, Vol. 2* (Washington: Government Printing Office, 1896), 1437.
- <sup>27</sup> Niedieck, *Cruises in the Bering Sea*, 173.
- <sup>28</sup> Vilhjalmur Stefansson, *Discovery: The Autobiography of Vilhjalmur Stefansson* (New York: McGraw-Hill, 1964), 115.
- <sup>29</sup> In this, Jackson and Townsend were clearly influenced by the recently published and highly influential polemic *A Century of Dishonor*, by Helen Hunt Jackson, which outlined the consequences of U.S. Indian policy in the west and cited welfare dependence on reservations as one of the many negative outcomes.
- <sup>30</sup> Charles Townsend, *The Reports of the Committees of the House of Representatives, 52<sup>nd</sup> Congress 2<sup>nd</sup> Session 1890-1891* (Washington: Government Printing Office, 1891), 12.
- <sup>31</sup> Sheldon Jackson, *Annual Report on the Introduction of Domestic Reindeer into Alaska, 1892*. Senate Miscellaneous Document No. 22, 52<sup>nd</sup> Congress 2<sup>nd</sup> Session (Washington: Government Printing Office, 1893), 14.
- <sup>32</sup> *Ibid.*, 9.
- <sup>33</sup> Sheldon Jackson, *Report of the Commissioner of Education For the Year 1894-5*, 1438.
- <sup>34</sup> During the first decades after the Civil War, the use of missionaries to make citizens of Indians was regular federal practice, but was in decline by Garfield administration. Jackson’s efforts in Alaska, which included founding a large network of mission schools supported by his reindeer work was something of an uphill course.
- <sup>35</sup> Sheldon Jackson, *Report of the Commissioner of Education For the Year 1894-5*, 1440.
- <sup>36</sup> Ernest Burch Jr., “The Caribou / Wild Reindeer as a Human Resource,” *American Antiquity*, Vol. 37 No.3 (1972): 339-368. Burch contends that the Seward caribou population increased in the early twentieth century despite of greater hunting pressure with firearms than was experienced anywhere in Alaska during the nineteenth century.
- <sup>37</sup> Dean F. Olsen, *Alaska Reindeer Herdsmen: A Study of Native Management in Transition*, SEG Report No. 18, (Fairbanks: Institute of Social, Economic and Government Research, University of Alaska Fairbanks, 1969), 21.
- <sup>38</sup> Stern argues that by this period reindeer and caribou hides were seen more as status symbols than as a basic necessity, and that the multicolored skins more common in reindeer were especially prized.
- <sup>39</sup> Sheldon Jackson, *Report on Introduction of Domestic Reindeer into Alaska 1894*, Senate Document No. 92, 53<sup>rd</sup> Congress (Washington: Government Printing Office, 1895), 58.
- <sup>40</sup> *Ibid.*, 72. The exact terms of how the Inupiat would earn their animals changed frequently. At first successful apprentices would receive ten head after two years. In 1893, the reindeer station began giving each apprentice a few deer per year, and in 1894 the term of apprenticeship was extended to three years; by 1896, the term had grown to five years with the possibility, rather than the guarantee, of receiving a starter herd at the end.
- <sup>41</sup> Sheldon Jackson, *Report on Introduction of Domestic Reindeer into Alaska 1894* p. 72.
- <sup>42</sup> *Ibid.*, 42.
- <sup>43</sup> *Ibid.*, 63.
- <sup>44</sup> *The Record* (Chicago), September 11, 1894. Quoted in Roxanne Willis, *Alaska’s Place in the West*, 31.
- <sup>45</sup> Sheldon Jackson, (*Fifth Annual*) *Report on the Introduction of Reindeer into Alaska*, 54<sup>th</sup> Congress, 1<sup>st</sup> Session, Senate Executive Document No. 111 (Washington: Government Printing Office, 1896), 17.
- <sup>46</sup> *Ibid.*
- <sup>47</sup> In this period, Jackson’s role as Education Commissioner was effectively channeling federal money into mission schools, a policy common earlier in the nineteenth century but increasingly out of favor.
- <sup>48</sup> Linda Ellanna and George Sherrod. *From Hunters to Herders: the transformation of earth, society, and heaven among the Inupiat of Beringia* (Anchorage: U.S. Department of the Interior, National Park Service, 2004), 85.
- <sup>49</sup> Sheldon Jackson, *Report on the Introduction of Reindeer into Alaska*, Senate Document 111, 54<sup>th</sup> Congress, 1<sup>st</sup> Session (Washington: Government Printing Office, 1896), 17-18. This was not a unanimous position; Healy for one was still of the mind that the Inupiat should be in charge of the herds.
- <sup>50</sup> Sheldon Jackson, (*Fifth Annual*) *Report on the Introduction of Reindeer into Alaska*, 10-11.
- <sup>51</sup> Sheldon Jackson, (*Fourteenth Annual*) *Report on Introduction of Domestic Reindeer into Alaska*, Senate Document No. 61, 58<sup>th</sup> Congress 3<sup>rd</sup> Session (Washington: Government Printing Office, 1905), 20.
- <sup>52</sup> Stern, et al., *Eskimos Reindeer and Land*, 25-26.

- <sup>53</sup> This was in large part due to Jackson's use of federal funds to support mission schools; by the early 1900s the separation of church and state was increasingly important in Washington.
- <sup>54</sup> U.S. Bureau of Education, *Report on the Alaska School Service and on the Alaska Reindeer Service*, Whole No. 394, Reprint of Chapter XV from the Report of the Commissioner of Education for 1907, (Washington: Government Printing Office, 1908), 386.
- <sup>55</sup> Olsen, *Alaska Reindeer Herdsmen*, 7.
- <sup>56</sup> U.S. Bureau of Education, *Report on the Work of the Bureau of Education for the Natives of Alaska, 1914-1915*, (Washington: Government Printing Office, 1917), 8. Herds under 1000 to 2000 are usually not viable economically.
- <sup>57</sup> Department of the Interior, *Reports of the Department of Interior for the Fiscal Year Ended June 30, 1915* (Washington: Government Printing Office, 1916), 98.
- <sup>58</sup> Roxanne Willis, *Alaska's Place in the West*, 37.
- <sup>59</sup> U.S. Bureau of Education, *Report on the Education of the Natives of Alaska and the Reindeer Service 1910-11*, Alaska School Service Whole No. 484 (Washington: Government Printing Office, 1912), 23; U.S. Bureau of Education, *Report on Work of the Bureau of Education for the Natives of Alaska 1913-1914*, Bulletin No. 48 (Washington: Government Printing Office, 1915), 7.
- <sup>60</sup> Carl J. Lomen, *Fifty Years in Alaska* (New York: David McKay Company, 1956), 76.
- <sup>61</sup> *Ibid.*
- <sup>62</sup> Sheldon Jackson, *Annual Report on the Introduction of Domestic Reindeer into Alaska 1892*, 8.
- <sup>63</sup> John B. Burnham, *The Rim of Mystery: A Hunter's Wanderings in Unknown Siberian Asia* (New York: G.P. Putnam's Sons, 1929), 281.
- <sup>64</sup> *Ibid.*, 82-83.
- <sup>65</sup> *Ibid.*, 179-80.
- <sup>66</sup> This paragraph is a synthesis drawn primarily from Krupnik, *Arctic Adaptations*, especially chapters four and five.
- <sup>67</sup> Burnham, *The Rim of Mystery*, 87-88.
- <sup>68</sup> Krupnik, *Arctic Adaptations*, 93-95.
- <sup>69</sup> L. M. Baskin, *Severnyi olen: upravlenie povedeniem i populiatsiiami olenevodstvo okhota* (Moskva: Tovari shchestvo nauchnykh izdaniy, 2009), 182-188.
- <sup>70</sup> Administrator of the Anadyr region. Quoted in A.N. Krushanov ed, *Istoria i kultura chukchei* (Leningrad: izdatel'stvo nauka, 1987), 60.
- <sup>71</sup> L. M. Baskin, *Severnyi olen*, 186-187.
- <sup>72</sup> V. N. Uvachan, *The Peoples of the North and Their Road to Socialism* (Moscow: Progress Publishers, 1975), 45.
- <sup>73</sup> *Ibid.*, 67.
- <sup>74</sup> Waldemar Bogoras, "Ob izuchenii i okhrane okrainnykh narodov," *Zhizn' natsional'nostei* no. 3-4 (1923): 169.
- <sup>75</sup> Slezkine, *Arctic Mirrors*, 138.
- <sup>76</sup> Waldemar Bogoras, quoted in Slezkine, *Arctic Mirrors*, 159.
- <sup>77</sup> I.S. Vdovin, *Ocherki istorii i etnografii chukchei* (Moskva: Nauka, 1965), 251.
- <sup>78</sup> Joseph F. Evans to Secretary of the Treasury. Quoted in Preston Jones, *Empire's Edge: American society in Nome, Alaska, 1898-1934* (Fairbanks : University of Alaska Press, 2007), 38.
- <sup>79</sup> William R. Hunt, *Arctic Passage: The Turbulent History of the Land and People 1697-1975* (New York: Charles Scribner's Sons, 1975), 266.
- <sup>80</sup> N.A. Zhikharev, *Ocherki istorii severo-vostoka R.S.F.S.R.*, (Magadan: Magadanskoe Knizhnoe Izdatel'stvo, 1961), 63; Burnham, *Rim of Mystery*, 212-217; N.N. Dikov, *Ocherki istorii chukotki s drevneiskikh vremen do nashikh dnei* (Novosibirsk: Nauka, 1974), 152.
- <sup>81</sup> See Burnham, *Rim of Mystery* and Bogoras, *The Chukchee*. Under the NEP, the Hudson's Bay Company was contracted to trade furs for supplies in Kamchatka and Chukotka, but this dissolved after Lenin's death.
- <sup>82</sup> Dikov, *Ocherki istorii chukotki*, 156.
- <sup>83</sup> B.I Mukhachev, *Bor'ba za vlast' sovetov na Chukotke (1919-1923): Sbornik dokumentov i materialov*, (Magadan: Magadanskoe Knizhnoe Izdatel'stvo, 1967), 62.
- <sup>84</sup> N. Galkin, *V zemle polunochnogo solntsa* (Moskva: Molodaia gvardiia, 1929), 80-82, 113-4.
- <sup>85</sup> Tikhon Semushkin (Syomushkin) *Alitet Goes to the Hills* (Moscow: Foreign Languages Publishing House, 1952), 9.
- <sup>86</sup> B.I Mukhachev, *Bor'ba za vlast' sovetov na Chukotke*, 124.
- <sup>87</sup> Semushkin, *Alitet Goes to the Hills*, 9.

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- <sup>88</sup> V.S. Flerov, ed., *Revkomu Severo-voskotka S.S.S.R. (1922-1928 gg): Sbornik dokumentov i materialov* (Magadan: Magadanskoe Knizhnoe Izdatel'stvo, 1973), 197.
- <sup>89</sup> M. Solomonov, "Stroitel'stvo olenevodcheskikh covkhozov" *Soveskii sever* no. 9 (1931): 153.
- <sup>90</sup> Baskin, "Reindeer Husbandry/Hunting in Russia in the Past, Present and Future," 25.
- <sup>91</sup> I.V. Druri, "Kak byl sozdan pervyi olenesovkhoz na Chukotke," *Kraevedcheskie Zapiski* (Magadan) XVI (1989): 7.
- <sup>92</sup> Ibid.
- <sup>93</sup> Ibid., 8.
- <sup>94</sup> Patty Gray, *The Predicament of Chukotka's Indigenous Movement* (Cambridge UK: Cambridge University Press, 2005), 93.
- <sup>95</sup> Druri, "Kak byl sozdan pervyi olenesovkhoz na Chukotke," 7.
- <sup>96</sup> P.S. Zhigunov, ed. *Reindeer Husbandry*, trans. Israel Program for Scientific Translations, (Springfield, VA: U.S. Department of Commerce, 1968), 177.
- <sup>97</sup> Druri, "Kak byl sozdan pervyi olenesovkhoz na Chukotke," 10.
- <sup>98</sup> F. Ia. Gul'chak, *Reindeer Breeding*, trans. Canadian Wildlife Service (Ottawa: Department of the Secretary of State, Bureau for Translations, 1967), 25.
- <sup>99</sup> Baskin, *Severnyi olen*, 185-186 and I. Druri, *Olenevodstvo* (Moskva: Izdatel'stvo selkhoz literatury, zhurnalov i plakatov, 1963), 39.
- <sup>100</sup> Druri, "Kak byl sozdan pervyi olenesovkhoz na Chukotke," 9.
- <sup>101</sup> Gul'chak, *Reindeer Breeding*, 32.
- <sup>102</sup> V. Kozlov, "Khoziaictvo idet v goru," in *30 let Chukoskogo natsional'nogo okruga* (Magadan: Magadanskoe Knizhnoe Izdatel'stvo, 1960), 66.
- <sup>103</sup> Patty Gray, "Chukotkan Reindeer Husbandry in the Twentieth Century," in David Anderson and Mark Nutall ed., *Cultivating Arctic Landscapes: Knowing and Managing Animals in the Circumpolar North* (New York: Berghahn Books, 2004), 143.
- <sup>104</sup> Slezkine, *Arctic Mirrors*, 195.
- <sup>105</sup> Gray, "Chukotkan Reindeer Husbandry in the Twentieth Century," 143.
- <sup>106</sup> Semushkin, *Alitet Goes to the Hills*, 9.
- <sup>107</sup> T.Z. Semushkin, *Chukotka* (Moscow: Sovetskii pisatel', 1941), 48.
- <sup>108</sup> T. Z. Semushkin, *Children of the Soviet Arctic*, (London: Travel Book Club, 1947), 35; T.Z. Semushkin, "Oryt raboty po organizatsii shkoly-internata chukotskoi kul'tbazy DVK," *Soveskii sever* no. 3-4 (1931): 177-82.
- <sup>109</sup> Anatolii Skachko, "Problemy Severa," *Soveskii sever* no. 1 (1930): 26.
- <sup>110</sup> Ibid.
- <sup>111</sup> Gray, "Chukotkan Reindeer Husbandry in the Twentieth Century," 143.
- <sup>112</sup> Anne Gunn, "Voles, Lemmings and Caribou – population cycles revisited?" *Rangifer* Special Issue No. 14 (2003):105-111. Female calves born to mothers who came of age with decreased access to good nutrition often produce smaller and weaker offspring themselves, delaying the rebounds from population crashes and disruptions.
- <sup>113</sup> Zhigunov, *Reindeer Husbandry*, 80.
- <sup>114</sup> Skachko, "Problemy Severa," 29.
- <sup>115</sup> I. Rul'tyegin, "V velikoi sem'e narodov," in *30 let Chukoskogo natsional'nogo okruga* (Magadan: Magadanskoe Knizhnoe Izdatel'stvo, 1960), 24.
- <sup>116</sup> Gul'chak, *Reindeer Breeding*, 35.
- <sup>117</sup> Olsen, *Alaska Reindeer Herdsmen*, 14.
- <sup>118</sup> Seymour Hadwen and Lawrence Palmer, *Reindeer in Alaska* (Washington: Government Printing Office, 1922), 69.
- <sup>119</sup> Hadwin and Palmer, *Reindeer in Alaska*, 30.
- <sup>120</sup> Lawrence Palmer, *Raising Reindeer in Alaska* (Washington: United States Department of Agriculture Miscellaneous Publication No. 207, 1934), 23.
- <sup>121</sup> Hadwin and Palmer, *Reindeer in Alaska*, 4.
- <sup>122</sup> Hunt, *Arctic Passage*, 219.
- <sup>123</sup> Hadwin and Palmer, *Reindeer in Alaska*, 70.
- <sup>124</sup> Willis, *Alaska's Place in the West*, 41.
- <sup>125</sup> Loman, *Fifty Years in Alaska*, 99.
- <sup>126</sup> Olsen, *Alaska Reindeer Herdsmen*, 14.

- <sup>127</sup> R. Nash, "Report Adverse to the Loman Corporation," 1934. Quoted in Stern et al., *Eskimos, Reindeer and Land*, 33. The politics surrounding the reindeer investigations and the eventual creation of the Reindeer Service are complex; for a thorough treatment see Stern, *Eskimos, Reindeer and Land*.
- <sup>128</sup> Berkhofer Jr., *The White Man's Indian*, 178-9.
- <sup>129</sup> Willis, *Alaska's Place in the West*, 44.
- <sup>130</sup> 75<sup>th</sup> Congress, First Session, June 15<sup>th</sup> and 22<sup>nd</sup> 1937 (Washington, D.C: Government Printing Office, 1937), 2. See also, Therese Dillingham, "Playing Reindeer Games: Native Alaskans and the Federal Trust Doctrine," *Boston College Environmental Affairs Law Review* Vol. 26 no. 3 (1999): 650.
- <sup>131</sup> 75<sup>th</sup> Congress, First Session, June 15<sup>th</sup> and 22<sup>nd</sup> 1937 (Washington, D.C: Government Printing Office, 1937), 2.
- <sup>132</sup> J.S. Rood, "Narrative re: Alaska Reindeer Herds for Calendar Year 1942, with supplementary data," U.S. Bureau of Indian Affairs (Alaska: Nome, 1943), 151.
- <sup>133</sup> *Ibid.*
- <sup>134</sup> 75<sup>th</sup> Congress, 23.
- <sup>135</sup> Olsen, *Alaska Reindeer Herdsmen*, 14.
- <sup>136</sup> Judge James Wickersham. Quoted in Willis, *Alaska's Place in the West*, 41.
- <sup>137</sup> "Sovetskia chukotka" February 23<sup>th</sup> 1943, in *Soveti severo-vostoka SSSR 1941-1961: sbornik dokumentov i materialov chast' 2* (Magadan: Magadanskoe knizhnoe izdatel'stvo, 1982), 87.
- <sup>138</sup> Dikov, *Ocherki istorii chukotki*, 252-3.
- <sup>139</sup> "Sovetskia chukotka" February 5<sup>th</sup> 1944, in *Soveti severo-vostoka SSSR 1941-1961*, 91.
- <sup>140</sup> Gray, "Chukotkan Reindeer Husbandry in the Twentieth Century," 143. Gray points out that Chukotka was an experimental region for the move from kolkhoz to sovkhos – not only was the first sovkhos established in 1929, but all the kolkhozy had been consolidated by 1980, while in the southern Soviet Union the farm types remained mixed until the collapse of the Soviet Union.
- <sup>141</sup> Gul'chak *Reindeer Breeding*, 32.
- <sup>142</sup> *Ibid.*, 191.
- <sup>143</sup> *Ibid.*, 192.
- <sup>144</sup> Zhigunov, *Reindeer Husbandry*, 311.
- <sup>145</sup> *Ibid.*, 125–26.
- <sup>146</sup> Gul'chak *Reindeer Breeding*, 82.
- <sup>147</sup> Druri, *Olenevodstvo*, 39.
- <sup>148</sup> Zhigunov, *Reindeer Husbandry*, 187.
- <sup>149</sup> Gul'chak, *Reindeer Breeding*, 191.
- <sup>150</sup> Zhigunov, *Reindeer Husbandry*, 3.
- <sup>151</sup> V. Ustinov, *Olenevodstvo na Chukotke* (Magadan: Magadanskoe Knizhnoe Izdatel'stvo, 1956), 18.
- <sup>152</sup> Zhigunov, *Reindeer Husbandry*, 82.
- <sup>153</sup> V. Kozlov, "Khoziaictvo idet v goru," 44.
- <sup>154</sup> Semushkin, *Alitet Goes to the Hills*, 12.
- <sup>155</sup> Zhigunov, *Reindeer Husbandry*, 87.
- <sup>156</sup> Gul'chak, *Reindeer Breeding*, 259-260.
- <sup>157</sup> *Ibid.*
- <sup>158</sup> Gray, "Chukotkan Reindeer Husbandry in the Twentieth Century," 143.
- <sup>159</sup> Semushkin, *Alitet Goes to the Hills*, 12.
- <sup>160</sup> For a discussion of Inupiat cosmology and social structure and how it adapted to reindeer herding, see Ellanna and Sherrod, *From Hunters to Herders*, 191-194.
- <sup>161</sup> For a discussion of educational attainment and political involvement in the late Soviet and immediate post-Soviet periods, see Gray, *The Predicament of Chukotka's Indigenous Movement*, 103-116 and 131-153.
- <sup>162</sup> Gray, "Chukotkan Reindeer Husbandry in the Twentieth Century," 143 and Olsen, *Alaska Native Herdsmen*, 14.
- <sup>163</sup> Olsen, *Alaska Reindeer Herdsmen*, 14-15.
- <sup>164</sup> Gray, "Chukotkan Reindeer Husbandry in the Twentieth Century," 143.
- <sup>165</sup> Stern et al, *Eskimos, Reindeer and Land*, 37.
- <sup>166</sup> David R. Klein, "Limiting Factors in Caribou Population Ecology," *Rangifer* Special Issue No. 7 (1991): 30-35.
- <sup>167</sup> Igor Krupnik, "Reindeer Pastoralism in the Time of the Crash," *Polar Research* Vol. 19 No. 1 (2000): 49-56.
- <sup>168</sup> Some modern ecologists see the local contexts in the arctic as so variable they are nearly impossible to document accurately. See Atle Mysterud, "The Concept of Overgrazing and its Role in the Management of Large Herbivores," *Wildlife Biology* Vol. 12 No. 2 (2006): 129-141.