

The Historical Development of Cattle Production in Canada

Ian MacLachlan

The country is in a transitionary stage, a stage when ranching is changing to mixed farming, and in order to practise mixed farming successfully, a proper system of winter feeding must be adopted. When the rancher was asked why he did not feed his stock in winter for spring delivery the invariable answer was: "It won't pay."

We find that the average stockman is very reluctant in changing to this new method, perhaps because it involves work and permits restriction on the free life of the rancher (Alberta 1907: 34)

The Staples Theory of Harold Adams Innis describes Canadian economic history as a development sequence driven by staple exports (crude or semi-processed resource products) which were dominant in different regions at different times (Innis, 1967). The traditional staples approach includes the cod fishery (coastal settlements of Newfoundland), the fur trade (river mouth trading posts in Quebec and Ontario), logging (waterpower sites in New Brunswick, Quebec and Ontario), wheat (agricultural areas and transport nodes in Ontario and later the Prairies), and minerals (mineralization zones of the Canadian shield, the cordillera and fossil fuels of the Prairies). In focussing on only the largest staples flows of national significance, Innis and his students have rarely noted the many historically brief but nevertheless regionally important staples such as the beef cattle of South-Western Ontario, Western plains and the plateau country of British Columbia. The staples model is useful, however, because it emphasizes the importance of export markets in explaining the timing of growth and development in the cattle industry at different times and different regions.

The Staple Theory proposes that the exploitation and crude processing of the staple product creates new markets for consumer goods and ultimately for the manufacturing of capital goods for use in the prosecution of the staple. Shipbuilding in the Maritimes and the production of agricultural machinery in Ontario are good examples. But there were also close links between staple industries. The logging trade demanded close links with agriculture to feed the horses and oxen upon which forest work depended. In turn the logging industry sold a significant portion of its output to the mining industry to provide the timbers required to shore up underground mines and build head frames at the surface.

The earliest customer for Canadian cattle producers was the labour force required by other staple extraction industries on the European settlement frontier. Eighteenth century fur traders imported cattle to provide a source of fresh food and in the vain hope that such mercantile outposts might also become the nucleus for agricultural settlement. When the Civil War drove up the price of salt pork packed in Cincinnati, the lumber jacks of the Ottawa Valley substituted fresh beef in their diets. In the 1860s cattle laden with bags of oats, salt and beans were driven up the Ottawa Valley to provide protein on the hoof to the lumber shanties of Renfrew and Pembroke (Jones 1946:281). Though some cattle were exported from Ontario to the U.S. for grain feeding in the 1860s, the first major export client was the United Kingdom. The UK market was the driving force in the growth of the cattle industry in Ontario in the 1870s and 1880s and in Western Canada from the late 1880s into the first decade of the twentieth century. By the turn of the century live cattle ranked third among Canada's exports to the United Kingdom, accounting for 20 percent of the total value (Foran 2003; Evans 1979a:750). Just as exports to the UK began to plummet about 1910, the United States opened its borders to Canadian cattle and the U.S. became the next major purchaser of Canadian beef until tariffs on live cattle were restored in 1920, ending the trade almost overnight. Cattle production grew rapidly when trading conditions were favourable and languished when it was only able to serve domestic requirements.

EARLY CATTLE PRODUCTION IN EASTERN CANADA

The production of beef cattle in Canada has been dominated by specialized western producers since the late nineteenth century. However, the historical roots of cattle production can be traced back to the import of French and British cattle as foodstuff for the trading posts. By the seventeenth century cattle were raised as a source of draft power and dairy products by *habitants* on mixed subsistence farms in the St Lawrence Valley and Fundy shore and later by British colonials of the present day Maritimes and Southern Ontario.

Beef on the Hoof

The earliest cattle in Canada supplied northern fur trading posts as a living food source for employees of the trading companies and in a vain attempt to create the nucleus of breeding stock to turn trading posts into self-sustaining agricultural colonies. These efforts were not successful and livestock intended for breeding inevitably ended up being slaughtered and consumed.

The earliest colonization attempts in Atlantic Canada saw cattle imported to relatively inhospitable grazing environments as fresh rations on the hoof. Portuguese cattle were brought to Sable Island off the east coast of Nova Scotia as early as 1518 in an abortive attempt to establish an agricultural settlement. Jacques Cartier brought the first cattle to Quebec in 1541 when he equipped his settlement at Cap Rouge, just upstream of present day Quebec City, with 20 cows and four bulls as the nucleus for a breeding herd. The ill-fated colonization effort was abandoned less than a year later and it seems that all the livestock were consumed. Cattle were brought from Britain to an agricultural colony established at Port de Grave on the west side of Conception Bay, Newfoundland in 1612 (Rasmussen 1995:8, 95) with similar results.

In 1731 a cow and a bull from the Scottish Orkney Islands arrived at the Hudson's Bay Company post at York Factory, the present day site of Churchill, among the earliest cattle to arrive in present day Manitoba. Despite optimism about the ability to maintain cattle on hay cut from the natural grassland fringing the Hudson Bay shoreline, they did not fare well. The York Factory journal for March 2, 1733 contains the following entry:

This morning we Kild our Bull he having been out of Order 5 Days Past, & upon Opening him we found he had Eat Something that had Eaten a hole in his Maw of which he would certainly have Dyed had we not kild him which I did to make the Best of him.
(Rasmussen 1995: 159)

Six months later the cow too was adjudged old and unfit so she too was "Kild ...to make the Best of her." Cattle were later reported at Hudson's Bay Company posts at Fort William on Lake Superior and at Fort La Souris near the present site of Brandon, Manitoba (Morton 1938: 10). Hudson's Bay Company trading posts in the Pacific Northwest such as Fort Langley on the lower Fraser River were stocked with Ibero-Californian black cattle driven up the fur brigade trails from the Fort Vancouver herd in the Washington Territory beginning in 1831 (Jordan 1993: 242-45). Within the next decade the Hudson's Bay company supplied many of its posts in the BC interior with cattle and by 1848 it maintained over 5,000 head of cattle at Fort Kamloops (Jordan 1993: 292).

Spaniards brought the first "black cattle" (Longhorns) to Western Canada by ship from California to provision their northernmost colonial settlement at Nootka Sound, on the north-west coast of Vancouver Island in 1790 (Jordan 1993:243; Rasmussen 1995:233). This was the first herd of Iberian Longhorn cattle to graze in Canada. Apparently all were slaughtered for food.

Benign Neglect: Subsistence Cattle Husbandry in the 17th Century

Samuel de Champlain imported cattle from France in the early seventeenth century and by 1623 the *habitants* at Cap Tourmente were cutting a considerable quantity of hay from natural grassland along the St Lawrence River to winter-feed cattle (Rasmussen 1995:97). Cattle were imported from Brittany in the 1660s and later from Gascony. These Breton and Norman cattle were the genetic roots of the dark brown *Canadien* breed which survives in small numbers to the present day (Porter 1991, 338).

At almost the same time as cattle were established along the St Lawrence, cattle were also imported from France to Port Royal in what is now Nova Scotia. By the 1630s Acadian cattle herds had become well established, grazing on the tidal marsh lands of the Annapolis, Minas and Chignecto basins along the Fundy shore in much the same manner as in Spain's Andalusian salt marshes along the Mediterranean, or the low lying Gulf of Mexico coastline of what is now the Mexican state of Veracruz and the American state of Louisiana (Jordan 1993). While North Americans typically picture cattle at home on the high arid plains, the marshlands of ocean coasts, Great Lakes shorelines, and river banks are ideally suited to grazing. Salt marsh grasses offer the added benefit of salt which cattle crave. Indeed, the Acadians found that the grasslands fringing the Fundy salt flats were so well suited to agriculture that they avoided clearing the uplands of forest cover, preferring to dyke the marshes and plow up the marsh grasses. When soil fertility needed to be restored, they simply opened the dykes to allow incoming silt-laden tides to restore crop land, closed the dykes and then waited for rainfall to effect natural desalinization before planting the next crop.

The most distinctive trait of cattle husbandry in seventeenth and eighteenth century Eastern Canada was benign neglect. European observers of the Canadian scene were almost universally contemptuous of the rough and ready agricultural techniques used by rude colonials. They remarked on the limited care, food and shelter that were provided for the relatively poor quality of cattle in the Canadas. The minimalist attitude of the eighteenth century colonials towards animal husbandry persists to the present day among calf producers. Cattle are expected to be robust and self-reliant if they are to survive. Those which do survive will be better adapted to remain healthy and well fed through the rigours of the Canadian winter. There are no resources to mollycoddle those beasts too weak to rise to the challenge. "The ideal cattle for Upper Canada, thought the farmers, were those which would 'stand starvation best'" (Jones 1946: 76).

Esteemed horses and milk cows were stabled in winter to feed on the little cured hay that could be gathered. But steers and calves were so little appreciated that they were left to fend for themselves, grazing in the open or browsing in the woods. Little more than straw or wild hay was provided as feed and nothing but a crude windbreak as shelter. Beef cattle nearly starved in mild winters and in severe winter conditions many perished. Some 1,500 cattle died of starvation and exposure in Ontario's Middlesex County in the arduous winter of 1822 (Jones 1946: 76).

The first cattle in Eastern Canada were imported from French and British breeding stock yet they never gained the full size or strength of European cattle. Mature oxen could seldom be fed to a weight of much greater than 500 pounds. Their small size was attributed to the severity of the Eastern Canadian winter and the generally low quality of husbandry. According to a report on agricultural capabilities in New Brunswick by one J.F.W. Johnston in 1850:

"The working ox, when the spring arrives, has not sufficient strength to do all the work which the urgency of the season requires, while the animal which is sold for beef has so small a weight of muscle and fat, compared with that of its bone, and the quality of the meat is so inferior, that it is comparatively worthless in the market" (Rasmussen 1995: 70).

Unlike European feeding practices, the cattle ration in the colonies was not supplemented with root crops

such as potatoes or turnip – these products were too urgently needed for human consumption. The experience of a visitor to Prince Edward Island about 1820 provides a good example:

Their black cattle are all horned, and some of them are stunted in appearance; but it is no wonder, for they are fed upon wheat straw the greater part of the winter, and often allowed only a scanty portion of the same. When they have to drive them early in the summer to the woods in their weakened condition, they are in danger of getting mired in the swampy places, and in this way several are lost. They are obliged to keep all the calves sucking at home, to entice the cows to return from the woods at night, but they have to wander so far before the cravings of nature are satisfied, that even this inducement fails to draw them home sometimes for a night or two together. When this happens, their milk is greatly injured or altogether lost. To remedy this they hang a bell to the neck of the one they have the most dependence upon, and if she leads the way home, the rest will generally follow. This bell serves also another valuable purpose, namely to find out their retreat in the woods, when the people are obliged to go in search of them themselves.

(Rasmussen 1995: 82)

According to Adam Fergusson-Blair, one of Canada's leading agriculturalists in the middle nineteenth century and later one of Canada's first Senators, the neglect of cattle welfare was manifest not only by a lack of food but insufficient water as well.

It is impossible to visit any settled parts of Canada, especially in those seasons where care is particularly required, without having to lament the neglected condition of cows and other stock. No doubt our extensive forests afford food and shelter to a considerable extent; but yet it is too visible in the stunted growth of the young, and in the sunken eye and attenuated carcass of the older cattle that water, that prime necessary of existence, is wanting or scarce.

(Fergusson-Blair 1840 quoted in MacKenzie 1974: 117)

With the arrival of United Empire Loyalists at the end of the eighteenth century, came livestock imports from the nascent United States, capital to purchase livestock and the middle Atlantic folk wisdom of tending and breeding cattle. Thus stock keeping methods adapted to conditions in New York, Pennsylvania and New England were superimposed over existing cattle technologies with roots in Britain and France. For all that, the cattle population in Ontario was quite low in the early nineteenth century. There was only just enough to supply the demand for milk and motive power and the number of cattle coming to market was relatively small given the population (Jones 1943: 129). Cattle played a limited role in early nineteenth century agriculture in Ontario and Quebec mainly because cattle were not nearly as profitable as wheat. Having invested the labour and time in clearing land, farmers quite naturally were not interested in wasting wheat fields on cattle.

The farms of Eastern Canada had to be carved out of primeval forest, in seventeenth century New France, a farmer could only clear an acre and a half of forest land a year for the plough (Rasmussen 1995:101). In nineteenth century Ontario, the best that farmer settlers could manage was 4-5 acres per year (McCalla 1993:68-69). This huge investment of labour could only be repaid if the resulting fields were cropped intensively. Pasture and forage are relatively extensive land uses (they generate low returns per unit of land area) and were thus not favoured by pioneer agriculturalists. Even in the Carolinian hardwood forests of Southern Ontario, Canadian cattle producers could not compete with the lower priced cattle from the superb free grazing lands of the American Midwest (Jones 1941: 531-532; McCallum 1980: 11).

In addition, Eastern Canadian winters were comparatively severe with snow so deep that foraging

was difficult at best. To thrive in any numbers, cattle had to be provided with winter feed, requiring a large investment in cutting and growing hay in the busy summer months using fields that had been hard won from the forest. In Ontario, no less than the Maritimes and Quebec, the provision of winter feed for cattle was a problem until settlers had the time and resources to establish tame hay pastures. Corn stalks, wheat straw and even pumpkins were sometimes used as supplements. Thus the principal source of pastoral protein in rural areas tended to be hogs which could forage for themselves on broken and forested terrain and scavenge from a wide range of agricultural, milling, brewing, and distilling wastes as well as on domestic refuse.

The great cost in forage of maintaining cattle could only be justified for dairy cows and draft oxen and even then, they fed mainly on natural marshy meadows along watercourses and browsed in the deciduous woodlands of southeastern Canada. The woods, not the fields, were the domain of farm animals such as cattle (Kelly 1971:97). Thus calf production in Eastern Canada was primarily an interim step in the production of dairy cows and draft oxen, not beef. Some young beef was a product of surplus bull calves and infertile dairy heifers but most came from aged and emaciated milch cows and draught oxen.

Oxen were preferred to horses in the earliest phase of settlement because they were more docile and tractable, could work without the expense of shoeing, and were easier to manage in amongst the stumps. While slower than horses, they had many other advantages: they could be put to work while still young, they did not require grain feeding, a yoke cost less than a horse collar and traces, and at the end of its working life, the ox provided beef and hide while the horse carcass was a dead loss (MacKenzie 1974: 119). Oxen remained the most common agricultural draft animals until about 1850 when they were gradually displaced by horses. Despite their importance to early agricultural operations, oxen were no better cared for than any other type of cattle. They were worked virtually from dawn to dusk without food and then were simply turned into the woods to browse at night. The oxen were worked from 8-10 years before they were fattened for slaughter as was the case in Britain. While they may have been tougher at that age, it was claimed that they "tallowed" better and were more full-flavoured (Rasmussen 1995:40; Trow-Smith 1959: 166-176).

In nineteenth century Ontario, what little beef cattle production there was - was confined to the relatively mild Thames River valley and on the grazing lands of the "barrens" flanking the south shore of Lake St Clair and Lake Erie in Southwestern Ontario (McCallum 1980: 11; Reaman 1970:44). Cattle were left in the open to forage for themselves year round thus they were cheap to raise but like western range animals of the 1880s, became semi-feral due to the lack of care and attention from human handlers.

Ontario's Wheat Boom Gives Way to Cattle

From the late eighteenth century to the 1870s, the principal export crop for Ontario farmers was winter wheat and the trade was sufficiently lucrative that there was no incentive to diversify. Indeed wheat contributed proportionally more to the Ontario farmer's income in 1850 than it did to the Saskatchewan farmer's income in 1980 (McCallum 1980: 24). Ontario's wheat boom peaked in the 1850s and began to decline in the late 1860s.

Why did Ontario farmers not raise cattle to complement and diversify their wheat farms? Jones (1941: 531-32) argues that wheat production was so profitable relative to the small investment required, that there was no incentive to diversify into livestock. The low cost of imported American beef had discouraged domestic cattle production for any purpose except draft work by oxen and perishable dairy products. Ontario cattle prices were vulnerable to sudden market disruption whenever cheap American cattle were dumped into Canada. Feeding Canadian cattle to market weight was discouraged by the uncertainties of the Montreal market and the possibility that at any time a glut of American cattle might

cause such a sudden reduction in prices that the extra costs of stall feeding could not be recovered (Jones 1941: 533). Some Canadian calves and feeder cattle were exported to the United States via border points such as Detroit. Feeding and finishing of these young cattle took place in the United States and in some cases, the very same animals might then be driven back into Canada as finished four year old slaughter cattle for sale to local butchers (Jones 1941:532; 1946:279).

Three factors account for the demise of wheat as the principal product of nineteenth century agriculture in Ontario and increased cattle production: soil exhaustion, competition from Midwestern wheat, and improving cattle prices. Wheat was cropped in a biannual cycle known as “wheat-fallow-wheat” (Kelly 1971). Soil exhaustion was the inevitable result following decades of wheat monoculture, lack of crop rotation and failure to reinvest in soil tilth and fertility.

Cattle herds would have required farmers to rotate wheat with hay crops to provide forage and cattle would have generated manure as a source of nitrogen and organic matter for depleted soils. However, the farmers of nineteenth century Eastern Canada, like many farmers in Western Canada today, regarded manure as a nuisance to be discarded rather than as a soil fortifying nutrient. Manure was seldom used as a fertilizer. It was thought to cause rust in wheat. Since manure was applied fresh and before it had a chance to “rot down,” viable seeds from woodland grazing remained in the excrement. Thus fresh manure encouraged the growth of weeds, a disincentive to the use of manure as a fertilizer. In 1832 by William Dunlop, a surgeon, founder of Goderich, Ontario and sometime member of Canada’s Legislative Assembly commented on the use of manure in Upper Canada.

It is only in some parts of the province that manure is used at all; and it is not an uncommon occurrence, when the stable-litter has accumulated in front of the building called the barn (which generally contains all the farm offices) to such a degree as to have become a nuisance, that a man invites his neighbours to assist in removing the barn, which is always a frame building, away from the dunghill, instead of transporting the dunghill to the wheat field. (Dunlop 1967:128)

Moving the barn instead of spreading the manure seems almost too ludicrous to believe. But it was in fact, a common practice of eighteenth and nineteenth century agriculture (Spencer 1913: 76), observed in Acadian Nova Scotia and in Lower Canada’s St Lawrence Valley. Cattle manure was not highly regarded as a fertilizer resource.

Occasionally a *habitant* would put little piles of manure on the idle land in the summer, where it would leach till fall before it was ploughed in, but even this practice was certainly far from general. In fact, as late as 1860, the custom of carting manure on to the ice of a neighbouring river to be washed away in the spring, or of removing the barns when the manure accumulated, still prevailed to a considerable extent. (Jones 1942: 141)

The failure to broadcast manure and wheat-fallow-wheat monoculture inevitably caused soil exhaustion and falling yields . Wheat yields of 25-30 bushels per acre in the 1820s dropped to an average of 16 bushels per acre by the census of 1851 (McCallum 1980: 20) as wheat mining took its toll on the land. But this destructive style of extensive agriculture was cheaper than alternatives and the only rational course of action over the short term. More intensive agriculture techniques such as crop rotation or application of manure would have made costs so high that Ontario farmers could not compete with those of the United States. Land degradation and falling yields created a powerful incentive to shift to mixed farming with cattle as an integrated part of total farm management.

The second factor which brought Ontario’s wheat boom to a close was intensified competition with wheat from the American Midwest which drove prices down and made imported American wheat increasingly attractive in Quebec and Maritime markets. The repeal of Britain’s Corn Laws in 1846 (a

tariff on grain imports) removed the advantage enjoyed by Canadian producers over their American counterparts in British markets. By 1871 Ontario's wheat boom had run its course (McCallum 1980: 47).

The third factor in the decline of wheat was improving market conditions for beef cattle. The combined effect of rising prices in the U.S., the Reciprocity Treaty of 1854, and new railway links opened the U.S. market to Canadian agricultural products in general and Canadian cattle in particular. The increase in cattle exports to the U.S. accelerated as the Civil War boosted cattle and pork prices. Although the abrogation of the reciprocity treaty in 1866 reduced the trade sharply, American demand for stockers was sufficient to overcome the renewal of the tariff barrier. For finished cattle, attention began to shift to the cattle markets of the United Kingdom.

Ontario's Cattle Boom

After 1840, there was a gradual shift towards greater beef cattle production in Ontario, Quebec and to a lesser extent, the Maritime provinces. The driving forces behind this change were capital accumulation by prosperous Ontario farmers and agricultural mechanization which made the preparation of high quality winter-feeding rations feasible. But most importantly, the development of an export market for live cattle in the United Kingdom beginning in 1874 was a terrific incentive for Ontario farmers to diversify into cattle.

Towards the end of the wheat boom, with record wheat prices and wheat yields in the 1850s Ontario farmers had been "showered with unprecedented quantities of cash" (McCallum 1980: 5, 52). Thus Ontario farmers were well positioned to diversify their operations from wheat monoculture to mixed farming which included livestock production. They had profited from cash cropping wheat and they had access to the capital required to invest in the commercial scale production of cattle. Quebec farmers had fared much more poorly out of the wheat boom and had less capital to invest in cattle.

The beginnings of agricultural mechanization made cutting hay for winter feed more economical and reduced the horse and ox population, freeing up land to feed animals dedicated to the production of fresh beef. The working oxen population in Ontario dropped from a peak of 50,000 in 1841 to only 6,700 by 1891 (Bogue 1947: 168; MacKenzie 1974: 119). The declining urban horse population with the advent of steam and later the internal combustion engine made more grain and hay available for beef cattle production. The consumption of dairy products began to increase in the late nineteenth century as pasteurization and butter and cheese manufacturing created a commercial dairy products industry. With approximately half the calves produced of the male sex and diminishing requirements for oxen on the farm, the supply of beef from dairy bull calves began to increase.

Trans-Atlantic cattle exports became feasible due to higher cattle prices in Britain. The Grand Trunk Railway made it practical to send Ontario cattle to Montreal by rail where they were then loaded on steamships which were always looking for eastbound cargo. The United States posed the greatest competitive threat but U.S. cattle exports were scheduled in 1879 by the British government.

The "schedule" specified that American cattle imports to Britain had to be slaughtered within ten days of debarkation. The justification for this non tariff barrier was that American cattle carried pleuropneumonia, a contagious cattle disease that might spread to the British domestic cattle herd. The schedule discouraged the import of American cattle for two reasons. First the cattle were emaciated after two weeks or more on board a ship and it was normal to feed imported cattle for several months to build their weight back up before marketing and slaughter. The ten day restriction ensured that all American cattle would go on the market in emaciated condition, lowering their price. Second, if cattle had to be slaughtered within ten days, then whenever a cattle ship arrived there would be a sudden supply glut with no prospect for holding back the cattle for sale when conditions improved. The short time frame before

mandatory slaughter created a ten day buyers market whenever a cattle ship arrived.

Thus Canadian cattle enjoyed a premium of about \$20.00 per head over American cattle (Jones 1946: 281). Canadian cattle could be sent to British and Scottish feed yards for some time to regain the weight lost at sea and sold whenever market conditions were favourable. Canadian exports of live cattle to Britain exports were buoyant in the 1880s while the Americans were hobbled by the schedule. In 1892 cattle import restrictions were extended to Canadian cattle as well. But the thirteen year advantage over American cattle provided excellent export opportunities to propel Ontario's cattle boom of the 1880s (Bogue 1947: 165; Evans 1979a).

The earliest breeds of cattle in Ontario were the descendants of Breton and Norman cattle brought to New France in the seventeenth century. Due to poor feeding and lack of winter shelter, nineteenth century cattle were small and relatively unproductive but they did have the ability to survive under harsh winter conditions, lack of feed and neglect by their owners (Kelly 1971: 97). Beginning about 1840 in Ontario and 1860 in Quebec, British bred bulls were imported to cross with the *Canadiens* which diluted the original bloodlines. By the mid nineteenth century high quality Durham (Shorthorn) cattle became the most popular breed in Ontario (Jones 1946: 269) while Aberdeen Angus and Herefords began to gain ground in the 1860s. The higher quality of cattle justified higher quality feeds such as grain or turnips for two reasons. First, improved cattle cost more and were worth more when finished so a greater effort in feeding was warranted simply to protect the investment. Second, the improved cattle gained weight more efficiently, increasing the incentive to provide a high protein ration.

Prior to the 1880s it took four years to bring the average steer to market weight on natural grass and woodland browse. The four year old steer was a massive beast but much of the low quality feed went to sustaining four years of metabolism while the animal scavenged for food, encouraging the growth of a large frame at the expense of fat. But after the 1880s the benefits of feeding a high quality ration became more widely known. The animal could be finished to market weight in shorter time at half the cost per pound since the animal did not live so long prior to slaughter (Bogue 1947:165).

By the 1870s specialized cattle production had emerged in the extensive grazing lands of Ontario's Lambton County and in more intensive pasturage and grain feeding in Wellington, Waterloo and Middlesex Counties. In 1869 it was reported that "there is hardly a farmer in the county of Wellington who does not now fatten from four to ten head of oxen, hence the continually increasing amount of fat cattle pouring in from that quarter" (Jones 1946: 284). Southern Ontario became Canada's first specialized cattle producing region in the 1870s but no sooner had its dominance been established than it faced a new challenger in Canada's Prairie West.

EARLY DEVELOPMENT OF THE CATTLE TRADE IN WESTERN CANADA

Quite unlike the gradual beginnings of agriculture and cattle production in Eastern Canada, the western cattle industry came into being at the height of a global cattle boom. In North America the boom was first spurred by meat demands of the Union army during the American Civil War and by the creation of a rail-based continental scale beef industry in 1865 with the establishment of Chicago's Union Stockyards. The American livestock herd was devastated in the wake of the Civil War which drove prices up in the industrial northeast. In 1867 slaughter cattle sold for \$36.39 in New York but only \$5.59 in Texas (Skaggs 1986:50-51).

This regional price differential was the impetus for the earliest drives of unbranded feral cattle from Texas over the Shawnee Trail to the railhead at Sedalia, Missouri in 1866. Other routes radiating North from Texas included the Chisholm Trail to the head of steel in Abilene, Kansas in 1867, the Western Trail to Ogallala, Nebraska and the Pecos Trail to Cheyenne, Wyoming. These great trail drives

of Texas Longhorn cattle were evidence of the emergence of a truly continental market. The high price signals of livestock in the industrial heartland were transmitted to the resource extracting western periphery. Cattle production, mining and railway construction were the boom industries of the 1860s and they were mutually dependent. Cattle producers needed local markets and miners and construction gangs needed provisions. The cattle population on the plains was growing by leaps and bounds, prices were buoyant, per capita consumption of fresh beef was increasing, and new cattle operations were being opened up from Chihuahua to the Texas Panhandle and north to the Saskatchewan River system.

The initial European occupation of the Canadian Prairie West beginning in the middle 1870s was as much a peripheral extension of spatio-historical trends begun the previous decade in the United States as it was a heroic nation building initiative of the new Dominion. Arthur S. Morton (1938: 91) contended that: "Ranching in Southern Alberta is simply the extension of the stock-raising industry that began in Texas." While David Breen (1983) argues the importance of British and Canadian involvement in Alberta's nineteenth century cattle industry, the driving impetus of American cattlemen, technology, breeding stock, and markets should not be gainsaid in understanding the development and diffusion of this, the Prairie West's first staple industry.

Until the 1870s, the space economy of Canada's Prairie West was shared by a number of plains tribes which were quite distinct from each other in linguistic and cultural terms. However, they were united in three ways: their powerful sense of tribal territory; their dependence on the plains bison as their major food, shelter and clothing source; and later their acquiescence to treaties offered by the Dominion Government after the cession of Rupert's Land by the Hudson's Bay Company in 1870. As long as native people on horseback (notably the Blackfoot) had free access to the prairie landscape, the grazing of cattle on the open range was completely unfeasible as a profit-making venture. By 1877 all of the most arable portions of the modern day Prairie provinces had been ceded by a series of treaties numbered 1 to 7. The native people of the northern plains had little choice as the spatial trend of the unrolling ownership by the Dominion and its surrender coincided with the east to west and north to south pattern of bison extinction. The Blackfoot who signed Treaty 7 were exchanging the certainty of buffalo extinction for the promise of cattle as their foodstuff. Indeed one of the signatories to Treaty 7 was Charles E. Conrad, a partner in the I.G. Baker Company of Fort Benton, Montana, which was destined to become the key supplier of beef to both the North West Mounted Police and the Indian Reserves through the 1870s and 1880s (Evans 1979b: 134 n. 19).

Beef Rations on the Hoof: Cattle Drovers in Western Canada

The United States played a key role in the early access and trading linkages with the Western Canadian cattle frontier from its acquisition by the Dominion in 1870 until the arrival of the Canadian Pacific Railway in Calgary in 1883. Most of the earliest cattle to enter Western Canada were driven north by a hardy and entrepreneurial breed of American cattle drovers. For every resource discovery and inrush of settlers there followed a wave of carpet baggers to provide for the specialized requirements of the staple extraction and the basic needs of its labour force. Ranchers could not afford to leave their operations hence a class of professional drovers came into being to market and transport cattle. Cattle were driven north following the natural grain of the landscape along the North bank tributary valleys of the Columbia and Missouri Rivers. Drovers was efficient as it was easier to goad livestock into walking to market than to import salt packed meat in cask given the condition of trails at that time. Cattle were preferred to other livestock simply because they could be driven faster and further than any alternate source of protein. Beef cattle were to become a staple export in their own right, but in the beginning cattle imports from the U.S. facilitated the extraction of other staples on the resource frontier to further the cause of empire and the incipient nation state.

Reminiscent of the gradual evolution of outposts from summer encampments to dry cod along the

coast of Newfoundland, the seasonal cattle drives became increasingly dependent on the terminal outposts along the resource frontier. Occasionally the spring and summer drives were delayed and they were overtaken by winter. In other cases the drovers decided to wait for better prices with the Spring renaissance in economic activity and increased demand from the mining camps. Thus drovers gradually became established, acquired land, began breeding in Canada and exporting the surplus back into the United States.

The first cattle imported to the North West as the nucleus of a breeding herd rather than for consumption, were brought by canoe to the Red River Settlement at the time of its establishment in 1812. This small herd and later attempts to add to it with cattle shipped south from Hudson Bay fell prey to both natural hazards and human hunger. Believing that cattle were critical to the welfare of his settlement, Lord Selkirk himself contracted with Mississippi traders to drive cattle North in substantial numbers but these were wiped out by winter-kill. The first American cattle to be imported on the hoof came up the Red River Valley in 1821 from Prairie de Chien (south of present day La Crosse, Wisconsin) on the Mississippi by an entrepreneurial American drover (Morton 1938 19-22). Some 650 cattle were imported from the U.S. into the Red River Colony by 1823 and they played an important part in the settlement's success as milk producers and a source of draught power. By the late 1830s its herd had grown to such a size that the colony began exporting cattle back to the U.S. where the Red River cattle were prized for their hardiness by U.S. settlers (Kaye 1981). And in 1873 a small herd from Fort Garry in present day Manitoba was driven west to Morleyville on the Bow River not far west of Calgary. These were the first domestic cattle in Alberta (Breen 1983:9).

The next import of domestic cattle to Western Canada also came north from the U.S., but this time to the interior of British Columbia. Led by an American frontier whiskey trader, the drive began in June 1858 and followed the Okanagan River Valley, crossed into Canada at Osoyoos, and ended in Kamloops, at the peak of the Cariboo gold rush. These were the first of some 22,000 cattle originating in Oregon and Washington that provisioned mining camps of the Cariboo gold fields as far north as Lillooet on the upper Fraser River from 1858 through to 1870 (Laing 1942, 259).

With the extermination of the bison, there was an enormous gap in the grassland food chain at precisely the time when demand for meat was increasing in four separate frontier markets. First, the North West Mounted Police, who arrived in Fort Macleod in 1874, required a constant high level of provisioning. Second, a newly dependent population of reserve bound native plains people demanded the provision of meat for statutory reasons since food provision was written into Treaty 6 covering central Alberta and Saskatchewan in 1876. Security reasons were also important; in the words of T.P. Wadsworth, Inspector of Indian Agencies and Farms, 'it is better to feed them than to fight them' (Satzewich 1996: 7). As supplies of buffalo and pemmican waned, beef on the hoof from Montana was chosen to supply Southern Alberta for its cost advantage over the salt pork used elsewhere on the Canadian prairies. Third, beef was required to provision a nascent group of coal mining communities in Southern Alberta. And finally the massive work gangs required to build the CPR and subsequent rail lines required beef in large quantities. The increasing demand for meat in the 1880s was an ineluctable outcome of all that the National Policy had planned for the Prairie West. To fulfil that demand in the short term, cattle imports were essential. While the earliest beef provisioners were not in themselves a staple industry, they were certainly acting as agents of the National Policy and laying the foundations for future staple exports. And despite the earliest shipments of cattle to Alberta coming from Manitoba (1873) and a larger herd from the interior of B.C. in 1875, the dominant flow of cattle in the late 1870s was from south to north.

The I.G. Baker Company with its headquarters at Fort Benton, Montana, the western head of navigation on the Missouri River wintered its draft oxen in southwestern Alberta in 1873-1874 and

provided an early demonstration of the practicality of raising cattle in the Canadian North West (Klassen 1990, 34). This firm was the first to begin shipping cattle into Alberta in 1875 and only a few years later was the first shipping agent and market for surplus Canadian cattle exports (Lupton 1967: 50). Virtually all supply contracts to provision the North West Mounted Police and Canadian Indian Reserves in the Treaty 7 region flowed to Montana suppliers between 1874 and 1883 and as much as one third of the *total expenditure* of the North West Mounted Police was paid to I.G. Baker alone in the mid 1870s (Evans 1979b: 123, 134 n. 13). By the 1880s Canadian ranches began to share in this frontier market. For example, the founding of the Cochrane ranch west of Calgary on the Bow River in 1881 was prompted by local demands for beef from the Department of Indian Affairs (Satzewich 1996). These early Alberta cattle operators procured breeding stock and later sold their cattle through I.G. Baker in Fort Benton, Montana.

THE ORIGINS OF RANCHING IN THE CANADIAN WEST

It is clear that the Western Canadian cattle industry originated as a northern appendage to an established pastoral system and cattle droving trade rooted in the Washington, Montana and Dakota Territories and the states of Minnesota and Wisconsin along the north-western tier of the United States. The drovers were agents of cattle technology transfer and exposed Western Canada, however briefly, to the scale and trappings of the American cattle frontier (Lutz 1980).

The transition period from itinerant American cattle drovers making annual sallies into the North West frontier from the head of navigation on the Mississippi, Missouri and Columbia Rivers and the investment of large scale, mainly Canadian and British cattle ranchers lasted less than ten years. During the transition there were influences from three quite different cattle raising traditions in the Canadian West which are detailed in Terry Jordan's (1993) *North American Cattle-Ranching Frontiers*. Jordan traces the origins of ranching from the temperate British Highlands; the highland *extremadura* and the lowland Andalusian salt marshes of Spain; and the tropical bight of west Africa. These cattle cultures were transplanted by African slaves and Spanish colonial nobility to the Caribbean and later to central Mexico, and by English and "Scotch-Irish" settlers in the Carolinas. By the nineteenth century these cultures had adapted to new environmental conditions to create the culture hearths of three cattle raising systems rooted in Texas, California and the Midwest. The origin of cattle ranching and calf production in Western Canada has clear links to all three traditions but with the construction of the CPR and the arrival of central Canadian and British investment capital, a uniquely Canadian blend of imported technologies and traditions developed by the 1890s that persists to the present day. The earliest cattle ranching in Western Canada was in the river valleys and mountain trenches of British Columbia with links to the Hispanic-California cattle culture.

The Hispanic-California System and the British Columbia Interior

The origins of the California system were Mexican and the cattle were Iberian Longhorns with genetic origins in Andalusia in the south of Spain. The California system originated with land grants concentrated in the Sacramento Valley by the newly independent Mexican government in a vain attempt to consolidate its hold on the Northern Pacific coastline. Beginning in the 1820s, the Mexican government granted large *ranchos* to encourage cattle production and demonstrate its sovereignty over the California interior.

The California ranchers made extensive use of Mexican and Mestizo cattle handlers who brought many Spanish loan words into the Anglo American cattle lexicon as evidence of the Mexican influence in California and ultimately the Pacific Northwest. Californian buckaroos (*vaqueros*) used a distinctive single cinched saddle of Sonoran origin, braided bridle reins, leather chaps (*chappareras*) to protect against the thorny *chaparral* of California and the fearsome-looking great-rowel spur. Californian roping technique wound a loop of rope around the saddle horn, known as a "dally welta" (*dar la vuelta* - to go round). They trained their saddle horses with a hackamore (*jáquima*) instead of a bit as was used in Texas.

Cattle brands resembled the complex Moorish styles in use in 16th century Spain instead of the Roman characters favoured by Texans. Jordan (1993: 256-260) has noted the use of several types of windlass of Spanish Californian origin in Oregon and as far north as Kamloops. Corrals, following the Mexican custom, were used mainly for slaughtering cattle, rather than for branding, and were, in Mexico as in the plateau country of interior British Columbia, equipped with a stout central snubbing post to secure animals, the precursor to the contemporary cattle squeeze.

By the mid nineteenth century the Californian system had developed as a cordilleran cattle culture and made use of transhumance: migrating from high altitude summer pastures to lowland pastures in winter. Thus the California system was a true herding culture that managed cattle to make best use of altitudinal differences in rangeland. Like the North Mexican cattle industry, the Hispanic California tradition produced hides and tallow, not beef. Until the mid-nineteenth century the market for beef in California and the Pacific Northwest was quite limited. But with mineral discoveries in the cordillera, especially in fast running alpine streams loaded with gold bearing alluvium, the California system was soon transformed to the production of beef. From the Sutter's Mill, the cradle of the 1849 California gold rush in the Sacramento Valley, north to Kamloops and Lillooet in the Cariboo gold fields of British Columbia's interior, miners and mining towns demanded beef. Thus herds were culled for local consumption on the mining frontier. The culling of Iberian stock and the large scale import of Midwestern cattle in the 1850s meant that the original unimproved Longhorn stock had become a rarity by 1865 (Jordan 1993: 247).

As it moved northward from its Sacramento hearth, the Californian system adapted from the Mediterranean climate of central California (cool wet winters, hot dry summers) to the drier, colder and more elevated terrain of the Great Basin and its northern extension in the interior of BC. The Hispanic California cattle culture reached the interior of British Columbia in the middle 1860s at about the same time as ranching collapsed in its California hearth due to overstocking, floods and drought.

The California system diffused northwards into British Columbia with drovers from the "Inland Empire" of the Pacific Northwest who initially were only interested in supplying beef on the hoof to the burgeoning mining towns of the interior. But they gradually became established as British Columbia ranchers and acquired land. Lands of the colony of British Columbia were opened to allow the pre-emption of up to 160 acres in 1859 and in 1870 this was increased to 320 acres, considerably more generous than the Dominion Lands Policy of the North West Territories. Additional land could be purchased at \$1.00 per acre, such an attractive price that a number of American based cattle drovers came north to buy land and become Cariboo cattle scions, owning tens of thousands of acres along the Okanagan, Nicola and Thompson River Valleys and thousands of cattle (Lutz 1980, 5). One such Anglo-Californian drover was Jerome Harper, an established cattle importer by the 1860s.

It was his custom to buy cattle in Washington and Oregon during the winter months, drive them to the International Boundary at Osoyoos, and hold them there till Spring. Some time in May, when the grass was good, he would start a drive. In the herds there would be 400 head of good steers, 50 head of picked milch cows, and 50 head of fine Oregon horses.

Upon arrival at Barkerville [B.C.] Harper had the stock herded on Bald Mountain, about 2 miles from Richfield. Animals were driven to the slaughter-house as required, at the rate of about twenty per day. Generally it took about 1,400 head for the season. These drives continued for several years as British Columbia did not produce enough cattle to supply the demand until after 1870.

(Laing 1942: 269)

Similar to the road ranches along the Oregon Trail (Jordan 1993, 270) "mile houses" were established along the Cariboo wagon trail at regular 18 mile intervals to provide rested horses for the

stage coach and freight wagons and lodging for travellers. The early agricultural and ranching settlement of British Columbia's interior depended entirely on the location of roads, especially the Cariboo Road. Roadside ranches were the nucleus for mile houses (e.g. 100 Mile House) and they developed substantial herds as well as developing diversified interests such as a hostelry, store and black smith shop (Lutz 1980: 7; Vrooman 1941: 20; Weir 1964: 86-87).

By the mid 1870s the Cariboo cattle herd had grown while the gold rush had waned. New cattle markets included the growing settlements on the lower mainland, railway construction gangs, and the United States. By 1876 Thadeus Harper, brother to Jerome, owned or controlled 4,000 acres of rangeland to the east of Kamloops. In that same year, he drove a herd of some 1,200 cattle south to Penticton and following the Okanagan and Columbia River valleys reached the Snake River in the vicinity of modern day Pasco, Washington. After wintering there, he drove the herd to Utah where it was summered to gain weight. When the herd finally arrived in San Francisco in the winter of 1878, Harper was able to sell fat steers worth \$10 in the B.C. interior for upwards of \$70 (Laing 1942). Thus cattle imported in support of one staple (alluvial gold) became, within a period of fifteen years, a valuable locally produced staple in its own right, after the original staple had played out. Western Canada's first significant beef exports followed the montane trenches of British Columbia southward based on a cattle ranching tradition derived ultimately from the Sacramento Valley of California. In addition to exports to the U.S., one John Shaw drove the first large herd from the Columbia Lake district of B.C. into Alberta's Bow River Valley and laid the foundation for Alberta's cattle industry in 1875 (Breen 1983; 9). The influence of Texas was not felt in Alberta until some six years later in a cattle raising region that would soon eclipse B.C.

The Anglo-Texas System and its Toehold in Palliser's Triangle

The Anglo-Texas system actually developed in the semi-tropical littoral of Louisiana. It combined customs that diffused northwards from Mexico (herding on horseback) with distinctive adaptations such as split reins and the double-cinched saddle with horn to brace against the pull from ensnared cattle. The hallmarks of the Texas system were Longhorn cattle, with Spanish origins, the style of herding using skilled equestrians equipped with lariats and, unlike the Californian system, the neglect of livestock through most of the year. Reasonably well adapted to the semi-tropical grazing territory along the Gulf of Mexico, the Anglo-Texas system collapsed in the Great Plains because it was poorly suited to the arid continental climate and to overgrazing of the fragile short grass of the high plains (Jordan 1993).

The influence of Longhorn cattle was not as great as is sometimes thought. Most of the cattle driven north from Texas were castrated market steers and not the bulls and cows required for stocking the range. Since the Longhorns were immune carriers of the semitropical tick that caused Texas Fever (splenic fever or piroplasmiasis, a deadly circulatory infection), they spread the disease to British breeds of cattle wherever they were driven. By 1885 quarantine legislation excluded Texas cattle of all breeds from Arizona, Colorado, Kansas, Montana, Nebraska, New Mexico, and Wyoming (Skaggs 1986: 53-54, 63, 72; Hutson 1994). The Longhorns did not gain weight as quickly as the domestic breeds and they proved to be more vulnerable to the extreme cold of the plains.

Immortalized in film and present day competitive rodeo, the management of livestock by mounted herders without using herd dogs had its origins in Latin America. Given the feral nature of their Longhorn stock, horsemanship was essential to effective cattle management and droving. The skills and technology involved in casting the lariat (*la riata*, rope), the short handled quirt (*cuarta*, whip) which was easier to swing from horseback than the bull whip; and the use of a goad (*garrocha*, giving rise to "cowpoke") are evidence of the Mexican roots of the Texas system, notwithstanding its virulent prejudice towards Mexicans and lack of Hispanic cattle handlers (Jordan 1993).

The cowboys were, as their name implies, a labouring underclass of landless young men with

roots in the rural South (many were Civil War Veterans) with a cosmopolitan admixture of European immigrants and a small proportion of Afro-Americans and native people. Very few had origins in cattle country thus they typically arrived as unskilled labourers and learned the cattle management and equestrian techniques after coming west.

Avoidance of labour intensive technology was the most significant aspect of the Texas cattle ranching system. Cattle were left to their own devices as scavengers on the open range and were expected to find their own way to feed and fend for themselves between round-ups. Animal husbandry was minimal, implying a low investment in cattle and a low appraisal of their value.

The Texas system was generally based on "free range" of undeeded land and squatting without any formal property rights. Leasing rights for grazing were only extended in the Indian Territory (present day Oklahoma), the State of Texas (which retained control over public lands as a condition of union) and the North West Territories of Canada where systems of grazing leases were developed (Jordan 1993: 235-6; Skaggs 1986:61). Pasturage was unfenced and neither shelter nor supplementary winter feed were provided. The labour intensive construction of fencing and cutting of hay was anathema to practitioners of the Texas system. Two annual round-ups were held: one in the Spring for branding and one in the Autumn to cull fat slaughter steers from the reproducing herd and brand any "mavericks" that had escaped the hot iron the previous spring.

The Collapse of the Texas System

The Texas system was a semitropical technology with origins on a humid littoral and not well suited to the cold and arid plains of the northern interior. The growth of the subtropical Texas system had been explosive during the boom years of the middle 1860s which coincided with a twenty-five year period of relative warmth and wetness on the Great Plains. In total 5 million Texas cattle were trailed north between 1866 and 1884, the largest short-term shift of domestic herd animals in the history of the world (Jordan 1993: 222). Had growth been slower there might have been time for gradual adaptation of the Texas methods to plains conditions.

Early signs of environmental problems included reduced calf yields (from 80 percent in Kansas to only 50 percent in the Dakotas) and periodic regional climatic calamities due to both drought and winter kill. Thus the Texas system was already in a state of collapse when the frigid winter of 1886-87 delivered the *coup de grace* and killed 60-90 percent of the cattle from Alberta south to West Texas (Figure 1). Jordan (1993:239) asserts that while climatic conditions alone would have eventually destroyed the Texas system, the end came even sooner due to overgrazing and competition with crop agriculture and sheep ranching in the U.S. Free grass encouraged over-stocking which damaged the short grass prairie and created a supply glut (cattle had to be sold as there was nothing left to feed them) and concomitant price crash in 1886 just before the "big die-off." Thus Jordan (1993: 239) argues: "The Texas system was not merely maladapted to the Great Plains; it was not sustainable in any environment and would have collapsed even in the lushest and mildest of settings." In addition, there was rapid encroachment by sod busting homesteaders whose private property rights took precedence over the Mexican doctrine of "accustomed range." In the end the Texas system lost much of the factor that it used so intensely: free grassland.



Figure 1: Waiting for a Chinook, 1886: The Last of 5,000 by Charlie Russell showing the effects of the winter of 1886. Note the wolves waiting for the last emaciated steer to collapse from cold and starvation.

Grazing Leases on the Short Grass Prairies

In effect since 1872, the homesteading provisions of Canada's Dominion Lands Act were not sufficient to attract settlers given prevailing agricultural technology and wheat prices (Ward 1994). Except for ethnic immigrant colonies such as the Red River and Mennonite settlements of Southern Manitoba, the Canadian plains had not succeeded in attracting many settlers. The vital immigration and settlement plank in the National Policy platform was failing and with it, the whole nationalization of the Prairie West appeared to be in peril in the depression years of 1870s. The doctrine of "manifest destiny" still held sway and free ranging U.S. cattle were already crossing the line and grazing on Canadian short grass prairie with the same lack of regulation found in the Montana Territory.

Yet in other respects, the time seemed auspicious. The North West Mounted Police were in place to bring order to the Prairies and hold American incursions at bay. The native plains people had largely been confined to reserves. Construction of the long awaited transcontinental railway was finally underway. With the extinction of the buffalo by 1879, the government was beginning to pay large sums to I.G. Baker of Fort Benton, Montana to supply beef to the Indians and NWMP. In 1879 the government itself brought 1,000 head of Montana breeding cattle into the North West to provide the breeding nucleus to increase the domestic beef supply for the native people and established the viability of large scale cattle ranching in the North West (Booth 1936, 54). Thus, in what might be described as a policy of import substitution (and consistent with Macdonald's National Policy of 1879), Ottawa began to adopt a more proactive role in settlement and targeted cattle as the means to promote economic activity. As Simon Evans (1983:82) argues: "For a time at least, and to further the purpose of the Dominion, the Canadian government set aside the image of the homestead settler and the family farm and created a 'Big Man's Frontier'."

The mechanism chosen by Ottawa to spur private sector cattle ranching, if not a dense settlement

pattern in the North West Territories, was the twenty-one year grazing lease at a paltry one cent per acre for up to 100,000 acres. The provision for grazing leases had been written into the Dominion Lands Act of 1872 but was not used until nine years later. It was a tenurial device borrowed from Australia and quite unlike the homesteading and land pre-emption systems in any of the provinces or most jurisdictions of the United States. In 1881 the Dominion Lands Act was amended to provide large grazing leases at low cost, a policy change which recognized that ranchers needed greater incentive to begin the settlement process. In March of 1882 leaseholders were permitted to import American cattle duty free which encouraged both Canadian ranchers and nascent multinational cattle producers such as the Montana-based Benton and St Louis Cattle Company (Klassen 1990, 35). In spite of these provisions, cattle could still run at large on "free land" that had not otherwise been deeded or leased. Cattle from the Montana and Dakota Territories often drifted north of the line only to be chased back to the U.S. by the NWMP and Indians hired for the purpose. For this reason a regulation was added to the Dominion Land Act in 1889 prohibiting cattle from grazing on unleased land, marking the *de jure* end of the open range in Canada's North West.

The twenty-one year lease incentive was introduced at an opportune time that coincided with the peak of ranching activity in the United States. Cattle prices had remained high in the antebellum period and the cattle boom seemed to crest in the early 1880s. There was a surplus of overseas (especially British) risk capital and ample evidence that it would flow towards whichever frontier offered the best opportunities. Books such as James Brisbin's *Beef Bonanza or How to Get Rich on the Plains* (1881) described the cattle industry of the great plains as a latter day gold rush while James MacDonald's *Food from the Far West* (1881) indicated that North American ranching was a prime candidate for British investment. Thus as the industry peaked in 1880 it became dominated by a small number of very large holdings, often controlled by absentee shareholders sometimes from overseas. And when these foreign dilettantes chose to live on the land they brought with them all of the airs of an imperial pastoral aristocracy (Jordan 1993: 236).

Canada was particularly attractive at the tail end of the cattle boom. British import regulations adopted in 1879 favoured imports of Canadian over American cattle; the latter had to be slaughtered within ten days of arrival in Great Britain which meant that there was not enough time to feed and fatten cattle after the emaciating rigours of two weeks at sea on the North Atlantic. The leasing system devised for the North West Territories offered security of tenure at low cost. In most of the U.S. land had either to be purchased from railroads, obtained via a variety of fraudulent schemes to exploit loopholes in American homesteading and other land legislation, or illegally seized by the simple expedient of barbed wire fencing (large scale production of barbed wire began in 1874 in the U.S.) of land in the public domain (Skaggs 1986: 62-65). And finally the North West Territories were attractive to British capital as they remained a part of the British Empire.

On the northern tier of the American West, Montana's cattle population jumped from none in 1860 to 170,000 in 1880 while the Dakota Territory increased to 140,000 from only 2,000 in 1860 (Skaggs 1986:58). The earliest phase of the cattle boom had originated in Texas and moved North extremely rapidly. But the rushing wave of ranching slowed as it rolled north and further away from its origins. Notwithstanding a twenty-five year period of abnormally high precipitation and mild temperatures, the short grass prairie was less conducive to cattle grazing than the coastal bend of Texas. The railway arrived later in the Northern plains and confinement of the northern plains people to reserves took longer to accomplish. But when Texas range cattle finally came to the Northern margins of the Dakotas and Montana in the late 1870s, growth was explosive. Some 10,000 Texas cattle reached Custer County in Eastern Montana in 1880 (Jordan 1993: 226). At a macro scale the spatial pattern of the cattle boom of the early 1880s followed a continuous flight of stepped foothills territories and states trending north-west from the State of Chihuahua through New Mexico, Colorado, Wyoming, Montana and into the District of Alberta in the North West Territories (Evans 1983: 84; Machado 1981:5). Thus Canada opened

the door to American ranchers by initiating the twenty-one year lease system just before it appeared that it would be broken down.

But the northward surge seemed to lose its momentum at the very time that inundation appeared imminent. Between 1881 and 1885 some 500 cattle companies were founded in Montana, Wyoming, Colorado and New Mexico alone. In Canada's North West Territories, which entered into a depression with the crash of 1883, there were only 23 new cattle companies (Evans 1983:83). In the first three years after 1881, the cattle ranchers on the Canadian side of the border were overwhelmingly Canadian and British in origin while the capital to finance these operations came from Toronto, Montreal, Ottawa and Britain, not from the United States. At a micro scale, the early ranch period of 1881-83 in Alberta was confined to the choice grazing lands in the foothills and adjacent plains. British and Canadian investors were the first to take up these grazing leases and this choice ranch zone had not a single American ranching interest.

American ranchers practising the Anglo-Texan system finally began to show an interest in Alberta in 1885 as land prices on the American plains were being driven up. With its annual penny an acre leasing system, the North West offered lower land costs in an area that was understocked by American standards. American interests began to take up grazing leases running east along the U.S. border through the base of Palliser's Triangle beginning in the Fall of 1885 and quite suddenly, according to Evans (1979b: 126), Canada's Department of the Interior was "besieged" by American applicants for grazing leases. Within only one year, Americans controlled nearly 20 percent of the available grazing land. The American ranchers tended to hold more arid leases that produced less grass and had a carrying capacity of only 50 acres per head of cattle compared with some 35 acres per head in the chinook belt (Lupton 1967:51). But they were the only grazing lands still available by 1886 and, since they were close to the border, allowed American lease holders to operate unified operations running through the border.

Two different traditions evolved side by side. One located in the foot-hills and valleys flanking the Rocky Mountains, was the creation of the eastern Canadian establishment and was closely linked to imperial markets. The short grass prairies to the east, on the other hand, were occupied briefly by the last survivors of a colorful company of men who had ridden the trails and followed the grass up from Texas. (Evans 1983: 87)

The "Golden Age of Cattle" and the beginnings of a major American thrust into the Canadian prairies came to an abrupt halt in the cataclysmic winter of 1886-87. A dry summer was followed by an exceptionally cold winter and cattle perished by the hundreds of thousands. Many of the American immigrants returned to the U.S. as the depression of the 1880s held cattle prices down.

A second cattle boom took place from 1902 to 1906 as American ranchers fled the advancing sod-busters in the U.S., re-entered the Districts of Alberta and Assiniboia, and crossed the Canadian Pacific Railway and the South Saskatchewan River. This second advance moved much deeper into Dominion territory and with it came hundreds of thousands of poor quality Longhorn, typical of the Texas ranching system. According to Livestock Commissioner, J.G. Rutherford:

The climax of this deterioration came in 1902 when, tempted by the low prices of Mexican cattle, some of the larger ranchers began to make importations from Chihuahua and Coahuila. These degenerate descendants of the ancient Spanish breed, although hardy and exceeding in length of horn, as in the length of wind and in speed, anything ever before seen among our western cattle, did not recommend themselves to the intelligence of the Canadian rancher, and, after a few years of trial, the trade practically died out in 1905 (Rutherford 1909: 7).

For example, in 1901 the Montana-based Conrad-Price Cattle Company established a ranch twenty miles North of Maple Creek, Assiniboia with 5,000 acres of deeded land and additional open range in the

vicinity. Within two years the ranch supported 15,000 head of cattle including some 8,000 Longhorn heifers and steers from Mexico. Originating in Casas Grandes, in the state of Chihuahua, they were railed north via El Paso and Denver to Chinook, Montana where they were detrained and driven a hundred miles north to the Maple Creek property. The cattle seemed to manage well until the catastrophic winter of 1906-07 when 60 percent of the Longhorns perished, a rate of mortality significantly higher than experienced by the British breeds. Redmond (1938: 112) concluded: "the Longhorn was not as tough as the cattle of Shorthorn, Hereford and other beef strains." The American ranch was closed out in 1909 and the first Longhorn experiment in Canada's North West Territories was judged a failure not to be repeated.

At the same time as large American ranches were established deep in Canadian territory, smaller local ranchers from northern Montana began to take up smaller grazing leases just across the border in the Cypress Hills region. In total, the number of cattle in the North West Territories more than doubled from 700,000 in 1901 to 1.5 million by 1906 in the new provinces of Alberta and Saskatchewan (Evans 1979b:132). But this boom ended catastrophically too, with the frigid winter of 1906-7 that destroyed approximately half of the range cattle and was especially severe on the open prairie east of the foothills where the American ranchers were concentrated (Rutherford 1909: 8).

The harsh winter conditions of 1886-87 and 1906-07 proved to be the final undoing of the land intensive Texas system; it seemed to come to a catastrophic end right in the midst of the cattle boom in Canada's North West. In the early days of the boom, which was a period of fortuitously mild winters, there were many references to over wintering cattle without benefit of winter feed.

The venture of grazing cattle on the prairie near the foothills of the Rockies in the province of Alberta was commenced in 1880-81 by a few enterprising and adventurous cattlemen bringing in herds from Montana, in the United States, and turning them loose on the prairie to wander at their own sweet will, and subsist the year round without any provision for their food and shelter beyond what nature afforded. (Craig 1903: 9)

Natural grasses (especially the native "prairie wool" such as blue grama grass) were nutritious and due to their desiccation by prairie winds cured standing up so that considerable standing grass was available throughout the winter without loss of its nutritional value (Jameson 1981, 54). Booth (1936: 52) contended that snowfall was not ordinarily heavy enough to prevent cattle and horses from grazing throughout the year in Southern Saskatchewan and Alberta. "Its chinook winds melted the snow in winter, from time to time, so that grazing animals could always nose down to the grass. Cattle and horses could thus winter in the open safely" (Morton 1938: 90-91). While cattle can rustle for forage under a light snow, they lack the pawing instinct of horses thus winter feed must be provided if the snow becomes deep or crusted (Weir 1941: 200; Wooliams 1979:3). In British Columbia's interior the use of low lying winter range along lower terraces and in valley bottoms persists, but nearly all BC cattle require some supplementary winter-feeding, ranging from three to four months and up to six months of the year on the high eastern margins of the Cariboo and Monashee mountain ranges.

In 1859 Palliser reported on prairie grazing conditions:

Thaws rarely occur before the month of March; but at this time the existence of horses and horned cattle becomes precarious, owing to the thaws by day being succeeded by frosts at night, causing a crust on the snow, in many cases too hard for the animals to remove in order to feed. The inhabitants, however, by the exercise of a little forethought during the previous autumn, might, without any difficulty, provide abundance of the finest natural hay from the adjacent swamps. Horses and cattle, if provided with a sufficiency of hay for only six or seven weeks, will not only survive, but continue useful and serviceable during the whole of the winter and spring. (Spry 1968: 13)

In 1877 an American rancher, cattle trader and practitioner of the Texas system, turned his herd of 21 cows and a bull loose on the range in the vicinity of Fort Macleod. In the spring he rounded up 21 cows, 21 calves and the bull, demonstrating the efficiency of the indolent Texas system in what must have been

a relatively mild winter.

But the prairie climate is fickle. For over a decade in the 1870s and 1880s it lulled ranchers into a sense of complacency about winter cattle husbandry. Then the ferocious winter of 1886-87 came close to destroying the industry. After several decades, complacency set in again until the winter of 1906-07 again caused an enormous rate of winter kill - especially among cattle that were not supplied with winter feed. In other cases cattle drifted with the wind to places where it was impossible to supply them with water and many animals may have perished from thirst as much as from cold and starvation (Alberta Department of Agriculture 1907:6). Booth (1936, 52) observed:

In the early days hay was seldom cut for winter feeding. In recent years, however, the provision of winter feed has become general, due in part to a shortage of grass resulting from overstocking and dry weather and in part to the fact that less favourable natural and economic conditions force the rancher to adopt practices that will reduce losses occasioned periodically by severe winters.

Those practising more labour and capital intensive methods, smaller operations raising British breeds and those who had begun winter-feeding suffered much less during severe winter conditions. For example, Joe Gilchrist recalled cattle husbandry and winter-feeding in the winter of 1906-07 near the Cypress Hills on the Alberta-Saskatchewan border:

The next year [1906] was a wet one; I remember the mosquitoes. We made smudges for the stock: pits of burning straw with long clouds of thick smoke streaming across the prairie. But at least we had plenty of hay, we bought our first mower and rake that year. And we needed every spear of hay we had because that winter of 1906 and '07 holds some records. We were lucky we had a corral to feed it in; without one the range cattle would have cleaned us out of everything we had. (Quoted in Ewing 1990: 56)

Vivian Ellis had remarkably similar memories about the winter of 1906-07 near Maple Creek in southwestern Saskatchewan:

The winter of 1906 was our first on the Saskatchewan range. That was one of the famous ones; the thermometer hit sixty degrees below zero and it wouldn't register lower. Our ranch produced quite a lot of hay and had some fences and sheds, so we didn't have it quite as bad as some of our neighbours who lost 30 or 40 percent of their livestock. With a few fences you could keep cattle in for winter-feeding, and you could keep range cattle out of your hay stacks, but in those days you turned your cattle loose on the range after calving, and gathered them in the fall. (Quoted in Ewing 1990:62)

The evidence seems clear that the ranchers who stayed in business after 1906 had actually developed many of the traits of stock farming: cultivating, cutting and curing hay; caring for livestock to the extent of insect control and confinement of cattle in winter (Manning 1995:128). In an American context, Skaggs (1986:66-67) notes that ranchers who stayed in business after the big die-offs and had previously run "scrub" stock (British cattle of mixed lineage) or Longhorns restocked their livestock with purebreds. By the middle 1880s most ranchers were switching over to Hereford bulls to upgrade the bloodlines of scrub cattle. The capital invested in these costly breeds provided further incentive for winter-feeding and husbandry.

The Texas system appears to have come to a catastrophic end in the very midst of the cattle boom in Canada's North West. The land intensive Anglo-Texas cattle tradition with its semi-tropical roots had two fleeting opportunities in 1885-1887 and 1902-1906 to gain a foothold in Western Canada. Klassen (1990, 39) argues that the enterprises of the Conrad family (which included I.G. Baker, the Benton and St. Louis Cattle Company and the Conrad Circle Ranch) made a powerful impact on cattle raising in the North West by applying the low-cost production methods that had proven successful on the open range of Montana to the arid prairie of Southern Alberta and Assiniboia. However, the influence of the Texas system and the role of American ranchers was much diminished by its maladaptation to the severe climatic

conditions on the northern plains. The strand line of the Texan tide was just north of the Canadian border. Jordan (1993, 226-227) concludes that the influence of the Anglo-Texan system was as inconsequential in the short grass prairies of Alberta and Saskatchewan as it had been in the Montana foothills while Evans (1983) describes the 49th parallel as an "institutional fault line" that marked the end of the Texas advance.

Decline of Large Scale Cattle Ranching

The land area under lease by the ranching industry enjoyed rapid expansion in the 1880s and 1890s (notwithstanding the winter of 1886-87), barely held its own from 1900 to 1910 and then began to grow again. However, there was steady growth in the number of lessees. The average grazing lease decreased from 37,000 acres in 1884 to 16,000 in 1891 and by 1901 it had shrunk to 725 acres, scarcely more than a 640 acre mile square section (Lupton 1967: 52; Morton 1938: 114). After 1900, however, the total area under grazing leases began to grow again from a low of 330,000 acres in 1898 to 6,670,000 acres in 1930 (Booth 1936: 60). This rangeland expansion resulted from two processes: the reversion of homesteaded crop land to grazing and the leasing of low quality grazing lands that were not of a quality to be worth leasing in the free land era of the 1870s and 1880s.

By 1910 most of the largest ranches had been broken up as settlement expanded and homesteads occupied the open range forcing ranchers to buy land to remain in operation. The most spectacular and famous example was when the Cochrane Ranch, the most famous symbol of the intrusion and dominance of Eastern Canadian capital and political power in the North West, went out of business in 1904. Some 500,000 acres of the best land in the North West came on the market and were snapped up by the Church of Latter Day Saints for \$6.25 per acre. By 1905 the ranching district around Lethbridge was completely fenced within a radius of 25 miles around the town as ranchers surrendered their leases and sold off their herds.

Many small leases were held by farmers to run a small herd as a means of diversifying their grain operations. In addition, they may have been encouraged to lease small parcels to avoid the 20 percent *ad valorem* duty payable on cattle imports from the U.S. by non leaseholders (Lupton 1967, 53). The Dominion Lands Act provision which permitted large grazing leases at low cost also contained provisions to cancel leases on two years notice. As homesteading encroached over the dry lands where ranching had held sway, security of tenure became an increasing problem. Thus the breaking of leases to accommodate settlers, loss of open rangelands, and the construction of fences by farmers led to increasing conflict between farmers and ranchers.

The demise of large scale ranching did not spell any reduction in the cattle population. Indeed cattle production actually increased quite dramatically after the great leased ranches were broken up and smaller homesteads were created. The number of cattle in southwestern Saskatchewan increased from 82,000 in 1901 (the ranching period) to 249,000 in 1916 by which time most livestock production operated by mixed farms on deeded land (Booth 1936: 59). This was the second "golden age" of the Alberta cattle industry (Foran 1998). The first was driven by export markets in the United Kingdom while the second was driven by export markets in the U.S. Cattle production in the first era was dominated by large scale ranches on leased grassland while the second included a mixture of ranches and deeded farmers which were diversifying into mixed farming and raising livestock on relatively small parcels of leased grazing land (Morton 1938 113). Canadian grass finished cattle were well received on the Chicago market. In 1918, a three and a half year old Shorthorn-Hereford crossbred steer from Alberta weighing 1,700 pounds sold for \$18.75 per hundredweight, the highest price ever paid for a range steer on any market (*Canadian Cattleman* 1938b). This observation is especially interesting as it illustrates that the esteemed slaughter steer of 1938 was more than twice the age and 25 percent heavier than the typical slaughter steer of the 1990s.

By 1900 grain growers were displacing the ranchers in the Calgary, Lethbridge and Fort Macleod region while stock raisers were forced to find new and inferior (drier) lands to the South of Medicine Hat, east of the Cypress Hills in the District of Assiniboia. In the next decade this cycle of farmer invasion and rancher displacement was repeated (Morton 1938: 137, 143). As the large ranches in Southern Alberta and Saskatchewan were broken up, optimistic American immigrants who were well acquainted with dry land farming practices moved into the arid region. For example, the arid region south and southwest of Moose Jaw was adapted best to cattle grazing but was nevertheless transformed into a grain growing region between 1910 and 1915. This region would turn out to be far too dry to sustain annual cultivation, would suffer most in the dust bowl era and has largely reverted to grazing.

HEARTLAND STOCK FARMING IN WESTERN CANADA

The Midwest cattle ranching tradition described by Jordan (1993:267-307) originated in Great Britain and was transplanted through the eastern seaboard of the United States, westward down the Ohio Valley to become dominant everywhere in American West by the late nineteenth century. In many material respects the midwestern tradition appears indistinguishable from stock farming in Southern Ontario and Quebec's Eastern Townships with their British and United Empire Loyalist antecedents, thus it is labelled here as the "heartland stock farming system."

The earliest cattle on the Canadian range were not the scrub stock of the Midwest nor Longhorns infested with ticks bearing Texas fever. Instead, the earliest cattle were quality cattle with evidence of Hereford and Aberdeen Angus ancestry from the Pacific Northwest and by 1881 these were augmented by pedigreed British breeds of livestock brought in from Eastern Canada and even direct from Britain (Evans 1978). Since they were closely controlled by fencing and winter-feeding, they were generally tamer and more docile than the free ranging semi-feral beasts south of the border. Sheds were built to provide shelter from winter blizzards from the Dakotas into Saskatchewan. They were kept closer to the homestead. In Mennonite settlements such as Blumenhof, Manitoba cattle were even rounded up and stabled each night for feeding and protection from predators and driven out to pasture each morning (Morton 1938: 55).

Heartland stock handling used capital and labour intensive methods: ranchers cut and dried hay, fenced cattle pastures and winter feed supplies, and actively herded cattle to make best use of pasture and forage resources. They built drift fences to prevent cattle from dispersing south in stormy weather; fenced off natural and cultivated sources of hay to conserve winter feed; and constructed pens for use in roundups, unlike Texans who followed the Mexican custom and branded on the open range (Jordan 1993:274). By the turn of the century, the Canadian Circle Ranch, one of the largest remaining ranch operations, went to the expense of fencing two sections of its Queenstown property (18 miles south of the CPR line, immediately south of the Blackfoot Reserve at Gleichen) for wintering recently weaned calves (Klassen 1990: 49). As a result of these measures, there was decreased mortality from winter kill making the system better suited to the northern plains.

The presence of a Texas style of ranching in Canada's Prairie West was fleeting. The catastrophic winters of 1886-87 and 1906-07 provided ample evidence that it was not only unsustainable but terribly unprofitable, especially when valuable breeding stock were at risk. By 1914 large ranchers remained only in the foothills and in Palliser's Triangle where it was too arid to support dryland agriculture and too far from water courses for irrigation to be feasible. Homesteaders, often with calf production as a sideline, had by then pre-empted and fenced much of the prime crop land and the development of flood irrigation systems was well underway.

While the southern portion of the Alberta and Assiniboia Districts was the most concentrated and specialized ranching region in the North West Territories, there was substantial stock raising in other

regions too. For example, the better watered Prince Alberta and Battleford areas of the Saskatchewan District (present day central Saskatchewan) were recognized as good stock raising country by the mid 1870s. Disappointed in the diversion of the first railway survey to the south, lacking rail access to export markets and suffering from the drought of 1889, many of the farmers in the Saskatchewan District turned to small scale ranching and mixed farming in the Saskatoon region. Drought stricken farmers on the Qu'Appelle River drove their cattle from Assiniboia north to the Saskatchewan District, some settling in the Swan River Valley, to the east of Yorkton. Transportation difficulties were less onerous for a product that could walk to the railway and the area around Saskatoon remained stock raising country until after the turn of the century and the arrival of the Canadian Northern Railway. Inadequate transportation facilities in the arid Moose Jaw region before the coming of the Canadian Pacific Railway also made cattle ranching the best cash crop and source of export revenues.

Many of the early immigrant colonies in Saskatchewan turned to mixed stock and grain farming to diversify their activities and guard against the risk of catastrophic failures in markets, weather, contagious cattle disease or pest infestations such as the grasshoppers that plagued the Red River settlement. Morton (1938) observed that the margin between the moisture necessary for successful wheat crops and drought was so narrow that stock raising was a necessary insurance against crop failure. In 1881, the agent at Winnipeg reported on the proclivity of some immigrants for stock raising: "Another class of immigrants was a number of extensive stock raisers who are of great importance, and for which enterprise the North-west is so well adapted" (Morton 1938: 78). A philanthropically funded settlement of English crofters was located at Benbecula on the border of the District of Assiniboia and Manitoba in 1883. The crofters found their old country animal husbandry skills were well suited to cattle raising and mixed farming. Another philanthropist, Count Paul d'Esterhazy, established a Hungarian colony near present day Esterhazy, Saskatchewan in 1885 and the settlement incorporated stock raising with grain cultivation from its earliest days. The ultimate success of the Anglican Barr colony in 1903 near Lloydminster, against all odds and despite considerable ignorance of agriculture, was due to its diversified nature and reliance on a mixture of wheat cultivation and stock raising (Morton 1938: 76, 80, 121). Thus many nineteenth century grain farmers leased unoccupied rangeland near their farms and raised cattle and other livestock as a sideline until most of the land area had been taken up by homesteaders. These were truly mixed farms and very much in the nineteenth century heartland cattle raising tradition.

A Distinctively Canadian System of Cattle Production

There are superficial similarities to both California and Texas systems in Alberta. Albertan cattle ranchers wear "chaps" at a round up and the heelers give their "lariat" a "dally" before they heel a calf into the branding corral. Both single and double cinched saddles are used by latter day ranchers who still prefer horses when they need to get close enough to inspect or rope cattle.

Until the 1960s Albertans maintained only British stock, largely Herefords, Aberdeen Angus and Shorthorns imported from Britain and the United States in the nineteenth century. Unlike the parasite ridden longhorns of the American range, Canadian cattle were relatively expensive and carefully bred. For example, the Circle Ranch was importing Hereford bulls from Chicago by 1886 (Klassen 1990: 50).

The spring branding tradition has become a traditional event on the ranching social calendar but it is held in a midwestern style corral made of unplanned dimension lumber, not a Mexican *palisado* and certainly not on the open range, Texas style. The style of brands has more in common with those of Texas than those of California, but in Alberta, and before that in the North West Territories, there has been a brand inspector in the employ of the government since the 1870s to record, approve and regulate the identification marks (Breen 1983: 108).

Fundamentally, however, calf production in Western Canada has always had more in common

with the labour and capital intensive heartland stock farming techniques than the Texas tradition. Winter-feeding is a major winter occupation and summer hay cutting is a labourious task that became part of every Alberta rancher's seasonal regimen beginning at least as early as the 1886 die-off. For example, Joe Gilchrist recalled how he and his brothers bought a ranch south of Maple Creek, Saskatchewan in 1914:

The deal included 700 head of cattle branded Q7 on the hip, 20 head of horses, and a haying outfit. It makes me tired just to think of all the hay we pitched by hand in those old days, but we built a big feed reserve and, over the next ten years, took on several other places and saw our herd increase to 2,500 head. (Quoted in Ewing 1995: 9)

Indeed the farmer ranchers of Western Canada took inordinate pride in their great six, eight and even twelve horse teams of Percherons which provided the motive power for expensive grass cutting machinery. In contrast to the Texas emphasis on the more individual equestrian skills of roping and cutting out cattle, the most prized horsemanship skill in Alberta was driving a twelve horse haying rig as an agrarian teamster.

However, there was an advantage to cold winter conditions as the winter cold tended to kill off parasites before they were ever able to gain a choke hold on the productivity of beef animals. In the warm climate and less marked seasonality of Texas, a considerable investment in dipping vats was essential to rid cattle of ticks and other external parasites (Hutson 1994:95). Semiannual cattle dipping in 12 by 1.5 metre excavations filled with any number of sulphurous or arsenical pesticides is, and was, essential to control many parasites whose expansion is not checked by winter conditions. In Canada dipping vats were seldom required, though an outbreak of mange in the middle 1890s required the construction of dipping vats for a brief period (MacEwan 1980: 56).

The provision of winter feed was both labour and capital intensive. It was undertaken, not as though ranchers could choose among Texas or Midwestern systems, but as an absolute imperative of cattle husbandry in the rigorous Canadian winters of the foothills and plains. In addition, cattle that had the benefits of a good carbohydrate diet through the winter were far more saleable than the emaciated condition of free range animals which survived a strenuous winter unaided.

A few of these traditional ranches remain in operation; the Douglas Lake Cattle Company is the largest and best example. In common with other Canadian ranches, it must produce thousands of tons of forage, grain and silage for winter-feeding. In the interior of BC. ranchers still practice transhumance. Cattle are wintered on valley floors on land that is owned by the ranch, close to ranch headquarters and to the fields where forage is grown and stored for winter feed. This also keeps pregnant cows accessible to ranch personnel at calving time. In spring they are driven up to middle elevation pastures at the 1,000-2,500 foot level. In early summer they are driven even higher to grazing land leased from the provincial crown as high as 5,000 feet. As winter approaches, the cattle are guided back down to graze progressively lower elevation pasture land (Acton and Woodward 1961:9; Wooliams 1979).

The Pervasive Influence of the State in Canadian Ranching

Perhaps the most important characteristic of the Canadian stock raising system was the heightened role of the government north of the 49th parallel. Some of the earliest cattle imports into the North West were brought in by the government and in the early 1880s, the government was far and away the largest buyer of prairie beef cattle.

The most influential policy instrument was the grazing lease system under the Dominion Lands Act which restricted cattle grazing to leased, deeded or homestead lands. The overgrazing problem that so plagued the Anglo-Texan and Hispanic Californian cattle cultures in the U.S. was much reduced in Canada because grazing leases prescribed a maximum livestock density per acre which varied according to the aridity of the region.

In other respects federal and provincial policies seemed to encourage cropping at the expense of livestock production. The distribution of free seed did little to dissuade settlers who were already obsessed with grain growing (Morton 1938: 171). The *Dominion Lands Act* provided no incentive to diversify and bank against crop failure with livestock. Homestead Regulations required a liveable house on the quarter section and six months residence for each of three years. Farmers had to have a specified area under cultivation at the end of the proving up period. But there was nothing in the Homestead Regulations that required breeding flocks or herds or the care of livestock (MacEwan 1980: 112). The policy was preoccupied with grain, not livestock, and prairie settlers managed their farms accordingly. Grain growing required less continuous labour, gave quicker returns and offered the tantalizing prospect of windfall profits should bumper crops coincide with strong markets (Saskatchewan 1918: 14).

By the 1920s policies began to encourage livestock on mixed farms but they were not terribly effective. Some of the supposed movement towards diversification was more symbolic than real. According to Voisey (1988: 85): Vulcan [Alberta] area farmers “welcomed the gospel of mixed farming”, “attended the sermons” and “even practised its rituals,” nevertheless they “turned to wheat for salvation” because it turned a greater profit on the capital invested.

In other respects, policies were more successful in encouraging livestock. To improve the quality of cattle breeding stock in the North West, the territorial government developed a program from 1900 to 1903 to subsidize the provision of pure bred bulls from Ontario, Manitoba and the United States with free transportation for Canadian bulls provided by the Canadian Pacific Railway. Farmers were charged \$5 per bull delivered to the farmstead, a considerable subsidy on the \$15 to \$18 per bull cost of the program (Booth 1936: 55; Morton 1938: 134). The government of Saskatchewan revived this concept between 1913 and 1923 in an effort to lessen the dependence on grain, to encourage small farmers to diversify into stock raising and to improve the quality of existing breeding stock. Between 1913 and 1923 some 2,800 farmers purchased purebred cattle (mainly bulls) on a cash, half-cash, or all credit basis (Morton 1938: 162). In 1923 the "Better Livestock Train" toured the breadth of Ontario with five cars of quality bulls for sale and rail borne facilities to demonstrate state-of-the-art animal husbandry technology (Reaman 1970: 229).

The territorial government (and later the governments of Saskatchewan and Alberta) took responsibility for providing training in animal husbandry for homesteaders who, in some cases, had never been on a farm or were not versed in current agricultural technology. Almost from their inception the provinces took on the role of agricultural education, agricultural extension services and the creation of “model farms” which housed agricultural schools. Saskatchewan promoted agricultural exhibitions, stock shows, calf feeding competitions, and agricultural lectures held in specially equipped railway cars. Manitoba's Agricultural College was established in 1905 and joined with the province's Department of Agriculture in supporting the various livestock breeders associations.

The decline in ranching and its gradual replacement by mixed farming and specialized grain farming was closely monitored by the government. The settlement goals of the Dominion Lands policy were finally being realized by 1910, 40 years after they were first promulgated. The "Ranching Frontier" was viewed as a transient phase in the settlement process, intervening between the "Indian Traders" and farmers in exactly the same vein as Frederick Jackson Turner's (1893) sequential model of frontier exploitation in American history. The more intensive use made of land by the livestock of settlers on mixed farms promised to increase total cattle production in spite of the loss of large scale ranching from the Western Canadian scene.

The settlement of the land means that the number of cattle will gradually increase again and reach larger proportions than ever before. It is generally counted that it requires

twenty acres of open range for each animal or eight head per quarter section. It is an easy matter for a settler on a quarter section to keep as many head as the land would have supported under range conditions and still grow a lot of grain. (Report of the Alberta Department of Agriculture 1906, quoted in Morton 1938, 138)

Changes in federal legislation also played a role in the decline of large scale ranching. After 1885 any land required for homesteads or railway grants could be immediately withdrawn from the confines of a grazing lease. Ranchers were forced to compete publicly for grazing land while homesteaders had guaranteed access to 2,500 acres at a nominal rate (Lupton 1967: 52-54). To stem the inflow of American cattle, the right to duty free cattle imports was withdrawn for leaseholders (reinstating a 20 percent *ad valorem* tariff) but retained by homesteaders effective September 1, 1886 (Klassen 1990: 37; Lupton 1967: 54). Two years later, the government ordered a 90 day quarantine on all cattle imported from the United States, ostensibly to control pleuropneumonia and other cattle diseases. The fee for leased grazing land was increased from one to two cents per acre per year in 1904. In short, the government appears to have opened the door to the Texas cattle culture and Montana cattle traders and ranchers in 1879 and, using a variety of protectionist and discriminatory legislative instruments, slammed it shut by 1886 once the nucleus of a domestic ranching industry was in place. More generally, the large scale ranching industry that had been created by government policies of the 1870s was all but destroyed by policy changes in the 1890s once settlement by sedentary agriculturalists seemed assured.

The government played an active role in animal inspection, establishing regulations for the humane treatment of livestock and requiring the inspection of Canadian cattle prior to export. In this respect, Canadian cattle regulation led developments south of the border and the good health of Canadian cattle exports prior to debarkation for the United Kingdom may account for the fact that U.S. cattle were “scheduled” by the British government in 1879 while Canadian cattle did not receive similar treatment until 1892 (Evans 1979a). Just as the privileged status of Canadian cattle was a boon to Ontario cattle producers in the 1870s and 1880s, it was also vital to the success and rapid growth of Alberta’s cattle ranching industry of the 1880s and 1890s.

From 1910 until World War II, calf production was consolidated on a handful of very large scale ranches and a host of much smaller, but in aggregate, more significant stock farms from Alberta to Ontario. The federal government vested the power to lease crown land for grazing to the Prairie provinces when the Dominion Lands Policy came to an end in 1930, giving Alberta and Saskatchewan the same jurisdiction over their resources as all of the other provinces. The management and allocation of grazing lands among ranchers and competing land uses such as recreation and wildlife and the fair evaluation of grazing leases has become a controversial issue in recent years. Some ranchers whose families have held leases on the same lands for over a century are facing challenges by environmentalists over their rights to the land and management of it. Nevertheless, the grazing lease system used in Alberta, Saskatchewan and British Columbia remains unique among Canadian provinces and an important key to ranching and calf production to the present day.

The 1930s was a period of mechanization and the gradual disappearance of the horse driven team from plowing, mowing hay and threshing. Indeed, the earliest of the Prairies’ feral horses were released at this time. Rural electrification had begun but many ranches were too remote to receive electricity before the 1950s. The drought years of the 1930s saw cattle and beef prices plummet and many stock farmers were forced off the land, preparing the way for consolidation of grazing land into larger parcels in the 1940s and 1950s.

Community Pastures

At the height of the Great Depression in 1935, when prairie agriculture was on the ropes, the federal government passed the *Prairie Farm Rehabilitation Act* which led to the creation of the Prairie Farm Rehabilitation Administration (PFRA) in 1939. The PFRA was responsible for a wide range of regional development programs and projects geared to curbing soil erosion through the distribution of tree seedlings to plant shelter belts and promotion of new soil conservation cultivation technologies and providing water through the construction of large scale dams and reservoirs such as the Gardner Dam and Lake Diefenbaker and tens of thousands of small scale on-farm reservoirs known on the Prairies as "dugouts."

From the point of view of cattle, however, the PFRA's Community Pasture Program has undoubtedly had the greatest influence. Beginning in 1937, the PFRA began to receive badly eroded lands from the provinces of Manitoba, Saskatchewan and Alberta. Most of this land had been abandoned by unsuccessful farmers during the drought years of the 1930s and was acquired by the provinces in an attempt to recover the taxes owing. The tax recovery lands were arid and beyond range of irrigation infrastructure. Most of this land was still covered in native vegetation. But some portions had been unwisely cultivated and then abandoned under dust bowl conditions and had become severely eroded. Under the PFRA, these marginal lands were acquired and consolidated into large parcels. On land which was eroded and barren after misguided efforts to crop it, the first step in rehabilitation was to plant drought resistant grasses. Out-of-work farmers were paid to dig the post holes and string the wire necessary to fence these large expanses for livestock grazing. As the community pastures were reseeded they began to receive cattle in the summer months to help local farmers maintain livestock year round and diversify their operations. By the 1980s 87 community pastures, found mainly in Saskatchewan, covered 900,000 hectares (2.2 million acres), providing grazing for 230,000 head of livestock, mainly cattle (PFRA 1987).

The community pastures benefit prairie farmers in three ways. First, they provide summer grazing land to supplement limited pasturage. Land costs and the limited carrying capacity of unirrigated pasture land limit farmers' ability to run large herds and benefit from economies of scale. Community pastures provide summer grazing during the time of year when farmers are busiest with their grain crops.

Good quality bulls are expensive to buy and expensive to feed and care for, especially for small cow herds that require servicing for only a few weeks of the year. Most community pastures now maintain a high quality bull herd to breed cows. Finally, community pastures provide preconditioning services for calves such as branding, dehorning, and castration in the spring when farmers are busy putting in the crop. Farmers pay a daily fee per head of cattle to recover the costs of operating the pastures. Unlike the U.S. where most of the western grazing land is owned and leased by the federal government's Bureau of Land Management, virtually all of the grazing land in Western Canada is operated and leased by provincial governments. The community pastures of the PFRA represent the only federal government involvement in Canada's rangelands and they occupy a tiny fraction of the total western grazing land.

CONCLUSION

The history of cattle production in Canada illustrates several fundamental themes of regional economic development theory. First, as long as cattle prices were low and Canadian cattle could not compete internationally there was no incentive to advance the technology of cattle husbandry or intensify production. This created a vicious circle. The cattle breeds were unimproved and the quality of cattle was poor. Thus there was no reason to invest time, labour and land into feeding them properly to improve their quality. Cattle were neglected in the east and they were neglected in the west. The catalyst for the cattle boom of the late nineteenth century was exogenous in the form of rising cattle prices and a ready export

market, first in the United Kingdom and later in the United States. When international markets developed, there was an incentive for breed improvement. Once there had been an investment in the cattle themselves, there was an incentive to raise them and care for them in a more land and labour intensive fashion.

The initial driving force for the cattle industry was exogenous demand and ever since the fate of the industry has been dependent on external market conditions. Though a significant staple export at the turn of the century, the cattle staple was not as rich in the backward and forward linkages that characterized wheat and later minerals (Evans 1979a: 761). Cattle production did not encourage the inflow of a large pastoral labour force or the manufacture of significant quantities of specialized capital goods. As the cattle were shipped live, there was no scope for further value added processing for any but the railways and shipping companies.

A uniquely Canadian style of stock raising emerged. It was more labour intensive than the Texas system; it had to be to survive in the Canadian climate. Quite unlike the Californian system, Canadian cattle raising was always geared to beef, not hides and tallow and the origins of Canadian cattle producers were British and Anglo Canadian, never Hispanic. And finally, however much it may be distrusted by some modern day cattle producers, the Canadian cattle industry was encouraged and shaped by a more pervasive level of state intervention than was the case in the United States.

Western Canadian cattle and calf producers have always admired the Texas vernacular and dilettante ranchers from the Marquis of Lorne in 1881 to the Prince of Wales (later Edward VIII) have aped the Texas aesthetic of riding style, dress and cattle roping (Evans 1993). But beneath that Texas veneer is a system of animal husbandry adapted from the North American heartland to suit the environmental rigours of Canada's Prairie West and closely regulated by the Dominion government to achieve National Policy objectives.

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