

Stockyard Districts as Industrial Clusters in Two Western Canadian Cities

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The stockyard was the nucleus of the livestock and meat processing agroindustry, one of the key propulsive forces in the rapid growth of western Canada at the turn of the century. In metropolitan centres such as Calgary and in smaller cities such as Lethbridge, stockyards functioned as transshipment points for livestock in transit and as markets for meat-packing plants. The activities typically drawn together by stockyards created a distinctly western Canadian industrial complex which benefited from agglomeration economies and industrial inertia. Nevertheless, public stockyards are now a relict urban land use and have all but disappeared from the urban landscape. The factors contributing to the waning role of stockyards are identified, with implications for the application of the theory of agglomeration economies and industrial clusters to resource-based industries.

Introduction

Cities have always been important centres for the marketing of agricultural commodities, including domesticated animals destined for human consumption. The post-industrial city retains marketing as one of its pre-eminent functions; however, the marketing of livestock and its urban infrastructure have all but disappeared in most western Canadian cities. Thus, it is easy to lose sight of the important role once played by farm animals in the urban fabric of western Canada. As recently as the 1970s, almost every large Prairie city had a stockyard to contain, tranship, and trade farm

animals that were ultimately destined for the packinghouse. After decades of gradual decline, public stockyards disappeared from western Canada's urban scene *en masse* in the late 1980s (Figure 1).

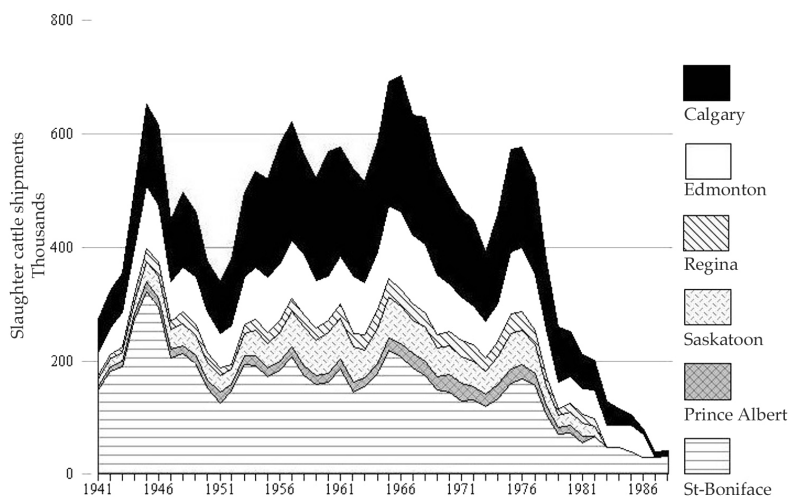


Figure 1 Slaughter cattle shipments as a measure of the vicissitudes of western Canadian stockyards, 1941-88. The Calgary and St-Boniface (Winnipeg) yards dwarfed all others in western Canada. Source: Agriculture Canada Livestock Market Review, various years

Livestock production seems to have no place in the contemporary city; it is distributed among thousands of producers in rural areas. With the notable exception of zoos, exhibitions, and rodeo spectacles, farm animals are so antithetical to modern conceptions of urbanity that their husbandry, feeding and all evidence of their organic functions are banished to the countryside and excluded by law from the urban landscape (Philo 1995). But not their killing. Until recently animal slaughter was principally an urban function—typically carried out close to a stockyard. Stockyards functioned as the point of articulation from farm to firm, linking thousands of agricultural producers in the country to a handful of industrial meat processors in the city. From the 1890s until the 1980s, the locus of livestock logistics and the seed crystal for metropolitan packinghouse districts from Winnipeg to Vancouver was the stockyard. This was the one place in the city where the presence

of animals was tolerated and even encouraged. A variety of industries linked to livestock and carcass processing were attracted to stockyard precincts by the agglomeration economies they created and the clustering of these activities contained their noxious character within a limited geographical arena.

This paper analyzes the creation of stockyards as the core function of livestock processing industrial districts in western Canadian cities to illustrate the operation of agglomeration economies. It shows that agglomerative factors and industrial districts may be transitory phenomena, witness the decline and disappearance of stockyards and their associated activities. The paper begins with an overview of the rise of stockyards and the characteristics of the industrial complexes that surrounded them which are assessed in light of the classical literature on agglomeration economies and industrial clusters. These ideas are illustrated by the historical and spatial development of two stockyard-centred industrial complexes in Lethbridge and Calgary, Alberta. A conclusion summarizes the factors accounting for the decline and disappearance of stockyards as industrial clusters.

Public Stockyards in Canada and the Emergence of Industrial Meatpacking Clusters

Public stockyards are extensive facilities for the unloading, enclosure, care, sale and transshipment of large volumes of livestock. Facilities include pens arranged in a network of numbered alleys, unloading chutes for trucks and railway cars, cattle scales, and one or more auction rings together with the regulatory agencies and firms involved with the marketing process. The impetus for stockyards arose with the long distance shipment of livestock that became possible with the expansion of railway networks deep into the continental interior in the late nineteenth century. Established in 1865, Chicago's Union Stock Yards was the first large, rail-based livestock terminal in North America and it became the model for nearly one hundred stockyards in the Midwest and Plains of the U.S. and Canada (Cronon, 1991). The establishment of stockyards was a significant factor in the industrialization of meat packing and the emergence of a host of smaller vertically linked enterprises which collectively developed into a basic (export-oriented) livestock and meat industry serving national and international markets.

In Canada, a profiteering scandal during World War I, widespread misgivings about the conduct of meat packers in the "beef

trust," and allegations of price-fixing in livestock markets prompted federal legislation to regulate the livestock trade (MacLachlan 2001: 153-158). The Canadian government enacted the *Live Stock and Live Stock Products Act* in 1917 which gave the federal Department of Agriculture a mandate to regulate stockyards. Regulations controlled livestock sales, animal health and safety, and the ownership structure of the yards. In 1939, the act was amended to prohibit the purchase or sale of livestock by a stockyard "proprietor" to keep the meatpackers at arm's-length from the operation of animal markets. The marketing activities in each stockyard came under the aegis of a Livestock Exchange and all buyers, dealers or commission agents had to be members in order to do business there (Canada 1961: 46-47).

In the first decades of the twentieth century, when many of the urban stockyards of western Canada were established, rail transportation was essential. Thus stockyards were sited with direct access to railway tracks and situated at nodes giving access to one or more livestock producing regions. Despite these common site and situational factors, two different types of stockyards emerged. Terminal yards were primarily concerned with the sale of finished animals (cattle, hogs, and sheep) to be slaughtered in adjacent meat processing plants. Chicago, Omaha, Toronto, and Winnipeg are all good examples of terminal yards with large meatpacking districts. Other stockyards functioned primarily as marketing and transshipment points for feeding and watering livestock destined for shipment further east (e.g., Fort Worth, Oklahoma City, Lethbridge, Moose Jaw, Prince Albert). Although the stockyards in all these cities eventually succeeded in attracting packing plants, they functioned primarily as markets for stocker cattle (young animals destined for further feeding on grass to build frame size) at the midpoint of the beef commodity chain. Unloading, temporary confinement to rest the animals, feeding, marketing, and reloading were their primary activities.

The public stockyard played an important economic role in the development and growth of many Western Canadian cities and in the development of unique industrial districts within these cities. The stockyard functioned as the nucleus of an agroindustrial complex in which agglomeration economies contributed to the formation of distinctive animal-based industrial clusters. There was a close relationship among railways, stockyards, livestock exchanges, commission firms and livestock dealers, slaughter and packing concerns, animal by-products processors, and a host of specialist suppliers and meat cutters. The shared savings accruing

from the proximity of vertically linked operations that processed every component of the carcass, the availability of a large semi-skilled butcher workforce, and tacit acceptance of noxious environmental externalities created the agglomeration economies that made stockyards so important to urban industrial growth in western Canada.

Agglomeration Economies and Industrial Clusters

Agglomeration economies are the production cost advantages accruing to clustered economic activities and an important causal factor in urbanization and urban-economic growth (Meyer 1977). Weber (1929: 126) distinguished between agglomeration and deglomeration: "An agglomerative factor...is an 'advantage' or a cheapening of production or marketing which results from the fact that production is carried on to some considerable extent at one place, while a deglomerative factor is a cheapening of production which results from the decentralization of production (production at more than one place)". Three distinctive types of agglomeration economies are commonly recognized: *urbanization* economies, *localization* economies, and *transfer* economies (Nourse 1968).

Urbanization economies are the cost savings resulting from the great variety of goods and services provided in urban areas, providing timely and low cost delivery. Virtually every firm and for that matter, every household, benefits from the generally lower cost, greater selection and rapid availability of a host of services that are more costly in the countryside and which may be highly sensitive to distance (e.g., fire and police protection services). Metropolitan areas confer cost advantages to virtually every economic activity simply because of their size and economic diversity.

Localization economies are the specialized cost savings which apply to narrowly defined industries. Localization economies are *external to firms* but *internal to industries*. Localization economies are characteristic of industries in which all firms can share proximate and timely access to a specialized labour force, to specialist suppliers of technical parts, machinery, and a variety of arcane producer services. When competing goods and services are imperfect substitutes for each other, and the variation between them can only be assessed by close personal inspection, rival firms may be drawn to locate close to each other. Common examples of localization economies are those that we witness in cities as consumers. Gasoline stations, fast food restaurants, banks, and furniture stores, for example, tend to cluster together (Nourse 1968: 86-7).

Transfer economies are the cost savings which accrue to firms which locate close to other businesses in vertically linked industries. This includes location close to a supplier firm (or cluster of firms); or close to a customer (or cluster of customers). Proximity to the production inputs (upstream linkages) or to the production outputs (downstream linkages) can result in cost savings, particularly transportation costs. The most obvious example is when the output of one firm flows directly into a buyer's plant by pipeline or mechanical conveyor. This is commonly seen in the petrochemical industry, in forest products, or primary iron and steel industries. Garment districts, for example, are created when there is a distinct division of labour between firms that specialize in pattern-making, cutting, sewing, or finishing, and garments in process may actually be pushed on a rack from one firm to another. Clustering facilitates face-to-face interaction which may be especially important and cost effective in high technology sectors and in industries which require rapid changes in processes or design specifications and complex cooperative problem solving. When transfer economies and localization economies come together in a distinct constellation of large and small enterprises, some competing ruthlessly with neighbouring rivals, others depending on each other as customers or suppliers in cooperative and innovative relationships, the cluster is termed an *industrial complex*.

Renewed interest in the factors that underlie the emergence and persistence of industrial clusters is often linked to Paul Krugman (1991) and his landmark, *Geography and Trade*. Krugman actually follows Alfred Marshall's (1920) classic *Principles of Economics* quite closely in arguing that there were three fundamental and distinct reasons for the localization of industry into industrial clusters:

1. Specialized suppliers are attracted to the district to supply an industrial cluster with the required materials and services at low cost, in a range of grades, and tailored to precise specifications, on a timely basis.
2. A specialized pool of labour develops in the region with a range of industry-specific skills.
3. "Technological spillovers" (Krugman 1991: 52-54) create a specialized local base of applied knowledge that is easily transferred from one firm and establishment to another due to their proximity. "The mysteries of the trade become no mysteries; but are as it were in the air" (Marshall 1920: 271).

With growing concerns about industrial espionage and appropriation of the hard-won specialized knowledge base which comprises

the firm's competitive edge, one wonders if less concentrated locations might be preferred so that the "mysteries of the trade" will remain just that!

Nevertheless, classical theory asserts that agglomeration creates such a locational advantage that *industrial inertia* will ensure that the industrial cluster is long-lived. Industrial inertia is the tendency for an industry, once established, to remain in place despite changing circumstances that make other locations more attractive. The inertial effect of agglomeration is often compounded by the immobility of the fixed capital investment that has been sunk in place (Estall and Buchanan 1980: 123; Johnston et al. 2000: 384). Thus, industrial complexes may remain in less than optimal locational settings, long after technological changes and the availability of resources or markets favour quite a different locational choice. "When an industry has thus chosen a locality for itself, it is likely to stay there long" (Marshall 1920: 271). Emphasizing their persistence, Markusen (1996) refers to industrial districts as "sticky places," but observes a number of variants to the Marshallian cluster which feature large firms as well as small ones and a resource orientation in addition to manufacturing and services.

While the localization factors described above may be *necessary* conditions for the emergence of industrial clusters, they seem not to be *sufficient*. They lack the spark of ignition—or what Schumpeter (1947) called the "creative response in economic history." Krugman (1991: 60-64) ascribes the ultimate cause to human inspiration, ranging from prosaic discoveries by ordinary people to the entrepreneurial vision of powerful leaders. In Krugman's view, industrial complexes typically arise for no rational geographic reason; they are merely outcomes of the serendipitous juxtaposition of an innovative entrepreneur in a receptive location. Indeed, he argues that the whole process of American industrialization was marked by small accidents leading to the establishment of one or more persistent centres of industrialization (1991: 61). If Krugman gives undue emphasis to inventive flukes, Marshall (1920: 268) was an environmental determinist (true to his time), attributing the chief cause for localization to physical conditions in the region's natural environment: its climate, soil, and underlying geology. He subscribed to an evolutionary logic that saw industrial districts developing in organic fashion, exaggerating their efficiency, coherence, and apparently, their sustainability (Sunley, 1992).

The issue of sustainability was addressed by Hoover and Vernon (1959) in *Anatomy of a Metropolis*, which studied manufacturing clusters in New York City. Far from finding industrial iner-

tia, Hoover and Vernon emphasized dynamism and incessant change in the locational pattern of manufacturing jobs from one decade to the next, driven by the adoption of continuous material-flow systems within the factory and shifting transportation technology from river to rail to road. Small plant clusters arose in central areas where cheap “fractional space” was available in premises formerly occupied by larger enterprises. The “pull of small plants to high density areas” was also driven by the benefits of sharing specialized labour and facilities that no single small firm could individually afford. Small industrial firms benefit from the availability and proximity of sub-contractors with the specialized equipment and skills to undertake specialized activities that are only required on an occasional basis (Hoover and Vernon 1959: 47).

In *The Economy of Cities*, Jacobs (1969: 86) described industrial clusters in terms of “efficiency.” The efficiency of Manchester, England was widely celebrated and attributed to the massive scale of its textile mills, despite their infamous satanic character and the squalid living conditions of Manchester’s new working class. Birmingham, with its gun and jewellery quarter (Wise 1949) among a “muddle of oddments” (Jacobs 1969: 87-88), was surely “inefficient” due to its reliance on small-scale workshops and the disintegration of various manufacturing processes. Yet Manchester gradually became obsolete while Birmingham thrived. Its fragmented and inefficient little industries kept developing new processes and products, and spinning off new business ventures. This is exemplified in the range of products manufactured by Birmingham Small Arms (BSA), which began with handcrafted small arms and diversified into mass produced military armaments and motorcycles. Innovation was important—even if it was inefficient. As Jacobs stated (1969: 92), “in effect, the city contained a great collection of mundane development laboratories”, learning and innovating by trial and error, in sum the “valuable inefficiencies” for which cities such as Birmingham were ideally suited.

Porter (1998; 2000) emphasizes the role of corporate strategy and competition in his analysis of the industrial clustering of downstream, end-product, or service companies. Porter (2000: 254) defines an industrial cluster as a “geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities”. Porter’s “complementarities” are very similar to the transfer economies described above and synonymous with what are sometimes described as “traded interdependencies,” the arm’s-length input-output transactions which are facilitated by proximity

between firms (Dicken 1998: 11). Porter's "commonalities" are in large measure, localization economies, and very close to what Storper (1995) refers to as "untraded interdependencies". However, commonalities and untraded interdependencies seem to imply something more, a socially *embedded* community of entrepreneurial firms operating in a localized climate of technological innovation, which share skilled personnel, equipment, ideas and, most important, operate in an atmosphere of shared expectations about mutual obligations—in a word, trust (Harrison 1992).

In a Porterian industrial cluster, the once vaunted in-house vertical integration has become obsolete due to its inflexibility and the dynamism of competitive markets. With global supply chain potentialities providing ever cheaper high quality inputs, the basis for competitiveness in localized clusters must be based on close cooperative linkages between buyers, suppliers, and other institutions in the industry. The internal economies of vertical integration within a single firm or industrial establishment have given way to the external economies or "spillovers" among proximate firms and industries. Thus a significant component of the competitive advantage which enables firms to create value lies outside the company and even the industry. Competitive advantage becomes an externality attributed to industrial clusters which foster innovation, productivity, and firm success.

In a western Canadian context and in an industrial age, the seed crystal for the emergence of an industrial complex was typically rooted in some way to site and situational characteristics that conferred a clear locational advantage. These locational characteristics typically became operative with some combination of the exploration and discovery of natural resources, development of new technologies, government policy initiatives, and exogenous demand creating export opportunities. Railway access has often been an essential prerequisite for the emergence of an industrial complex based on the vertical integration of economic resource extraction, processing, and shipment to export markets. Having reviewed some of the factors that account for the emergence and persistence of industrial complexes, we now turn to two historical case studies of stockyards industrial districts to exemplify and illustrate the features of livestock markets and meat packing agglomerations.

The Calgary Stockyard and its Stockyards District

In 1903, two years before Alberta was carved out of the North-West Territories, the city of Calgary provided a large parcel of land to permit construction of a public stockyard and augment the private facilities already operated by the Canadian Pacific Railway and by P. Burns and Co. The parcel was strategically sited on the Canadian Pacific Railway (CPR) main line just south of the Bow and east of the Elbow Rivers and situated at the centre of Alberta's booming ranch economy. Though initially owned and operated by Alberta ranching interests, the Alberta Stockyards Company (ASC) was acquired by the CPR and amalgamated with its existing facility to form the Calgary Stockyards in 1912. Thus the Calgary Stockyards were poised to play a strategic role in what Foran (1998) described as the second "Golden Age" of Alberta's cattle industry (1914-1920).

The stockyard attracted a cluster of related activities that would form the nucleus for an emergent industrial complex in the Bow River Valley. Figure 2 captures this nucleus in its infancy, prior to the advent of federal regulation. P. Burns and Co. operated a large-scale abattoir and meat processing plant immediately north of the ASC and CPR stockyard pens which produced large volumes of dressed beef and hog carcasses for local markets and for rail shipment to other destinations. Like other large-scale meatpackers, P. Burns and Co. was vertically integrated (Klassen 1999: 151), internalizing many of the specialist functions of carcass disassembly. For example, *Henderson's Calgary City Directory of 1911* listed Burns and Co. under the following industrial categories: beef packer, packing house, abattoir, wholesale butcher, cattle dealer, live stock dealer, cattle exporter, fertilizer manufacturer, fish wholesaler, oyster wholesaler, lard refiner, wholesaler of cured meats, pork packer, sausage maker, poultry and game wholesaler, supplier of cold storage, provision dealer, and stockyard owner. Figure 2 also shows a separate Burns and Co. hide facility, and glycerine plant and storage warehouse, establishments external to Burns' packing plant which had become part of the emerging industrial complex in 1911.

Vertical linkages are important to the meat processing industry—carcass by-products are sometimes referred to as "the fifth quarter," and their sale and value-added processing were vital to profitable meat packing operations (MacLachlan 2001: 141-144). The noxious and perishable character of these by-products (hides, blood, bone,

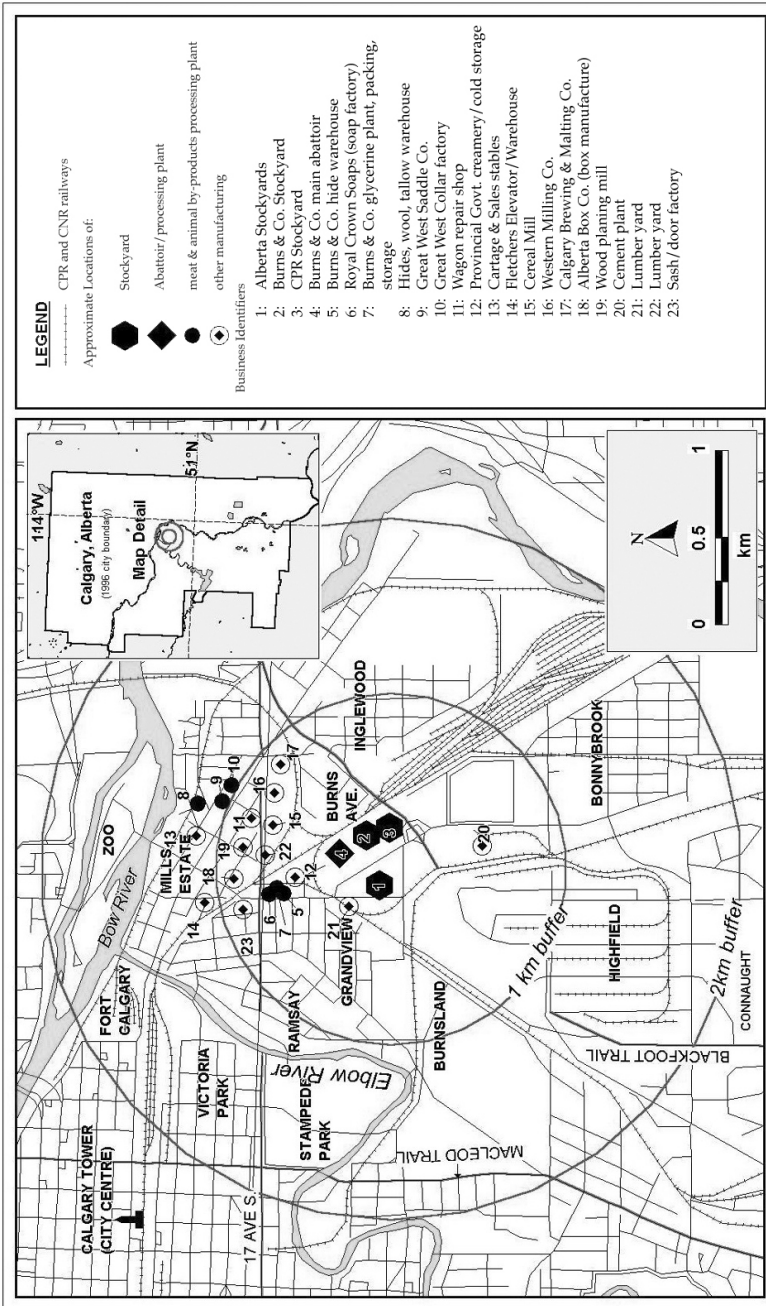


Figure 2 Calgary Stockyards industrial cluster, 1911.
 Source: Compiled by authors from Henderson’s Calgary Directory (1911) and Calgary Fire Insurance Maps (1911).

fat, and viscera) required that downstream processors be located close to slaughter operations. Agglomeration in stockyards districts contained the negative externalities of meat packing and offered transfer economies to firms engaged in the processing of animal by-products.

Independent downstream processors of carcass byproducts which benefited from proximity to the stockyards and the P. Burns and Co. packing house included a soap works (animal fats), saddle and horse collar manufacturers (leather tanned from hides), and an independent hide, wool, and tallow warehouse.

The role of producer services closely linked to the livestock exchange (e.g., cattle buyers, commission agents, inspectors, and veterinarians) is not yet apparent. Figure 2 identifies no such functions and no evidence of the spatial integration of such functions is available at this stage in the evolution of the industrial cluster. Nevertheless, by 1911 the site of the industrial complex had been fixed and its situation made it an important node in a broader rail-linked network of stockyards—particularly as a transshipment point for eastern-bound cattle from British Columbia. An abundant blue-collar labour supply was readily accessible in the relatively low-income neighbouring communities (present day Ramsay and Inglewood), so that a number of labour-related localization economies could be realized. However, transfer economies and the containment of negative externalities seem to have been the key agglomeration forces at this time.

By the 1950s, the Calgary Stockyards (operating as ASC) was growing rapidly in an expansionary economy. An average of more than four hundred thousand animals per year was processed through the ASC between 1947 and 1953 (Friesen 1995). Figure 3 provides a second snapshot of the economic geography of the Calgary stockyards at this time, showing a number of changes from the 1911 profile. The CPR and Alberta stockyards were amalgamated, since the CPR had transferred its stockyard holdings to its ASC subsidiary in 1950, as they had in Lethbridge. Burns and Co. (renamed since 1911) continued to maintain a separate private stockyard immediately adjacent to the ASC yard.

A second major packing plant, Calgary Packers (built in 1938 and acquired by Canada Packers in 1955), provided a competitive rival to Burns and Co. in beef and hog processing. Yet their common function and spatial proximity meant that both firms could share stockyard localization economies. New establishments associated with animal by-product processing included tanneries, a furrier and fur dresser, and a fur farmers' association. Reflecting

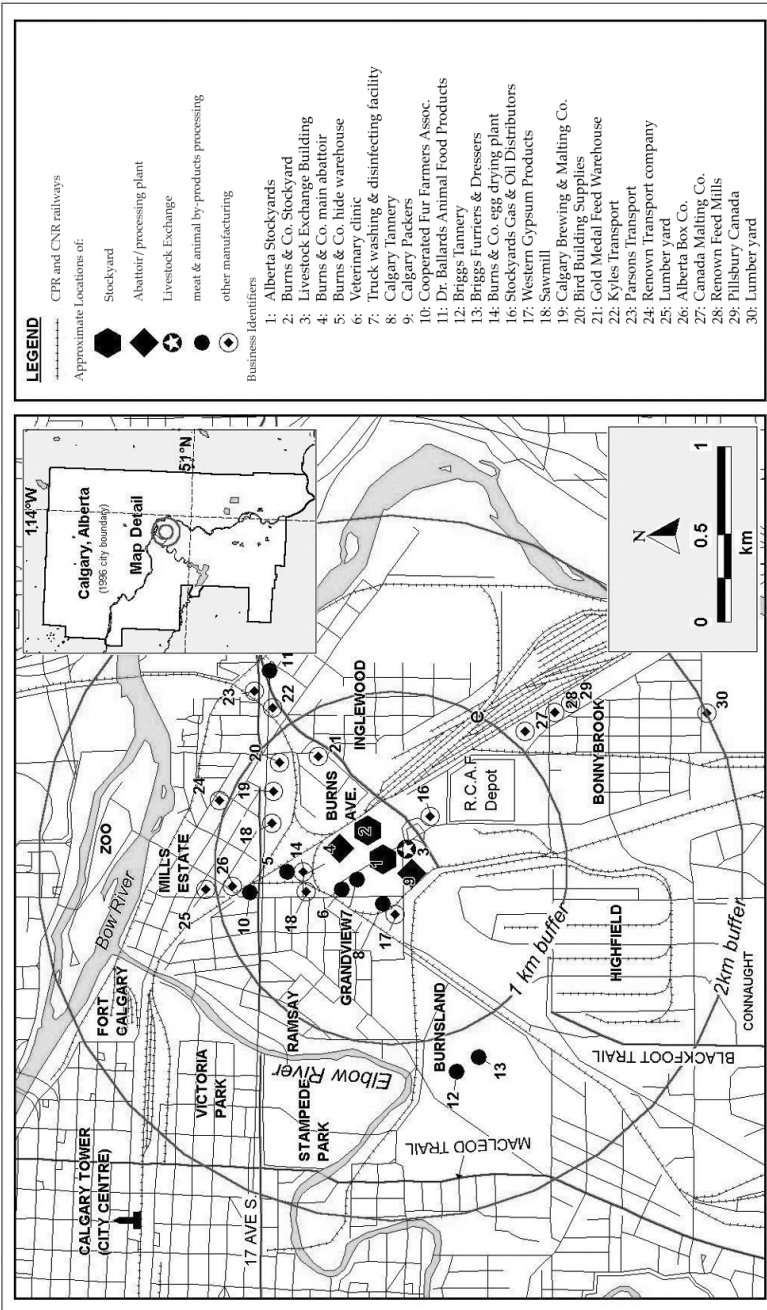


Figure 3 Calgary Stockyards industrial cluster, 1955.
 Source: Compiled by authors from Henderson’s Calgary Directory (1955) and Calgary Fire Insurance Maps (1955).

changes in transportation technology, the saddle and horse-collar manufacturing firms had disappeared from the stockyard scene. But the 1950s saw truck (cattle-liner) transportation replace the cattle drive and rail transportation and an independent truck-washing operation became a standard feature of this and other yards. In keeping with increasing regulatory controls over animal health, a separate large-animal veterinary clinic was also established as part of the complex. Although somewhat more spatially removed from the rest of the cluster, a pet food processor (Dr. Ballards) also joined the cluster of industry-specific economic activities.

Perhaps the most significant development since 1911 was the construction of the Livestock Exchange Building. This three storey office building functioned as the nerve centre for the specialized producer services required to operate the industrial complex. Its more than two dozen offices included a Bank of Montreal branch dedicated to livestock transactions; livestock commission firms, cattle dealers and brokers; packer buyers for the major meatpacking concerns (e.g., Canada Packers and Swift Canadian); veterinarians; specialized cartage firms for livestock on the hoof and chilled meat; fire and transit insurance companies; a railway telegraph office; provincial government brand inspectors; federal government animal health inspectors; federal government carcass graders; and administrative units of the ASC, Calgary Livestock Exchange, and the Alberta Live Stock Cooperative.

From the 1950s to the early 1970s, Calgary's stockyards district was a distinct and vibrant animal-based industrial complex. Year-to-year volatility was evident as an inevitable feature of the commodity character of livestock. Despite gradual structural changes in the cattle industry such as the emergence of larger feedlots and country auction marts, industrial inertia and a long steep peak in the cattle cycle sustained the cluster. After the cattle cycle peaked in 1975, signs of the stockyards' demise became apparent. By this time, packer direct cattle sales (the sale of cattle directly from rural cattle feeders to packinghouse buyers) had almost completely replaced the stockyard sales ring for slaughter cattle transactions. In 1984, the two principal meat-packing plants (Burns Foods and Canada Packers) ended their Calgary slaughter operations, depriving the stockyard of its adjacent market for slaughter cattle. With the packing plants and slaughter cattle gone, the Calgary Stockyards became a local market for calves and stocker cattle, a function for which its central location in what was then Canada's sixth largest metropolitan area was singularly ill-suited.

The volume of slaughter cattle shipped through the Calgary stockyards dwindled to 29,000 in 1984, about one-tenth of the peak flow in 1966. Competition from country auction marts, the advent of computer selling, and the development of newer, larger, and non-metropolitan packing houses outweighed the urbanization and localization economies available in inner city Calgary. Industrial inertia was no longer sufficient to sustain this type of industrial complex. In 1987, the ASC was wound up and less than 10,000 slaughter cattle per year were handled by the Calgary Stockyards under the control of the ASC's short-lived successor, Calgary Public Livestock Market Ltd. The Calgary stockyards were closed permanently in 1990 (Friesen 1995). What had once been the nucleus of a thriving agroindustrial complex now lies vacant, awaiting redevelopment, a scenario that was replayed in a number of Canada's larger western cities. The fact that the stockyard was able to persist for five years after all slaughter operations had come to an end is testimony to the disarticulation of the transfer economies that had formerly been so important to stockyards and meat packing operations and that formed the transactional foundation for stockyards industrial districts.

The Lethbridge Stockyard and its Industrial District

A typical example of the smaller livestock receiving yards of Western Canada was located in Lethbridge, Alberta. The CPR had operated corrals at track-side, just east of the town since 1903. Amidst agitation for mixed farming to reduce the dependence on specialized grain farms, was a concern that there was insufficient livestock marketing infrastructure. Grain farmers had their system of country grain elevators on Prairie branch lines but comparatively little investment had been made in the analogous system for livestock marketing. Calgary had already consolidated its role as Alberta's livestock marketing capital, a position that Lethbridge boosters wanted to challenge.

Lethbridge was situated at the junction of five CPR lines leading in all directions, giving it a commanding role in southern Alberta's rail net. Thus, Alberta's third largest city seemed to be ideally located as a livestock collection and transshipment point. Unfortunately, the existing livestock pens were sited on dryland, without access to water. This was a serious liability since cattle could not be held overnight. If trains were late or had insufficient livestock cars, cattle producers would have no place to care for their stock. By 1931, a new trackside complex of holding pens with access to irrigation

water was built to improve cattle handling. But it was still just a scaled up version of the hundreds of unregulated receiving yards found in every small Prairie town and on every branch line.

After World War II, the Canadian embargo on cattle and sheep exports was lifted. Only 100 kilometres north of the US border, the Lethbridge yard took on strategic significance as the centre of Southern Alberta's cattle industry and export gateway. With the completion of the St Mary River Dam and expansion of the land area under irrigation, the region was poised for take-off as a cattle feeding and finishing specialist. In 1950, the holding pen complex was expanded to become a full service public stockyard under federal regulation, the last stockyard to be established in Canada. To attain this status, an office building, 42 new pens, truck scale, and an auction ring were added. The yard was equipped to feed and water cattle in transit and loading facilities were available for single and double deck rail cars as well as transport trucks. A cattle squeeze was added to brand, dehorn and vaccinate stocker cattle requiring these services. Packer buyers, livestock commission agents and livestock dealers established offices at the yard along with the mandatory federal regulators, veterinarians, accredited weigh masters and a provincial brand inspector. The initiative was trumpeted as the forerunner of a packing plant and nucleus of the Southern Alberta cattle and beef industry (*The Lethbridge Herald* 1950: 11-13).

In 1960, Canada's largest cattle processor and meatpacking firm, Canada Packers, established a beef plant on the edge of the Lethbridge Stock Yard. One year later, Canadian Dressed Meats built a second plant and, in 1971, Swift Canadian, the second largest packer in Canada, added a third beef plant. Together with the stockyards, a hide plant and nearby cattle feedlots, Lethbridge became one of Canada's largest beef producing centres.

Figure 4 captures Lethbridge's stockyards district in 1975, showing the location of the facility between the CPR and Highway 3 leading to Medicine Hat and points east. Three large packing plants are clustered around the stockyard. While the city was a significant cattle processing point, the industrial district was weakly developed. The only downstream processor nearby was the hide plant (a pet food processor of kill floor by-products was located too far away to be included in the map). The packinghouses were kill and chill specialists that shipped beef carcasses (quarters and sides) direct to eastern Canada. Thus, there was no scope for further value-added processing in a relatively remote and peripheral city. Livestock trucking firms were found elsewhere in the industrial

park but no other specialty suppliers to the meatpacking industry were attracted.

Cattle shipments at the stockyard grew through the 1960s, as federally regulated stockyards reached their apogee, though the Lethbridge yard never matched the scale of operations in Calgary (Figure 5). But shipments began to decline as packer direct sales captured a growing share of the slaughter cattle market, community auctions ate into stocker and feeder cattle sales, and fewer cattle moved from west to east by rail. The Lethbridge Stock Yard was closed down in 1977, yet Lethbridge’s three meatpacking firms continued in operation for some years. The Lethbridge Stock Yard had been instrumental in the development of the meatpacking industrial complex but had become increasingly disconnected from the packing plants which no longer had any need for a centralized market. Federally regulated public stockyards had become obsolete.

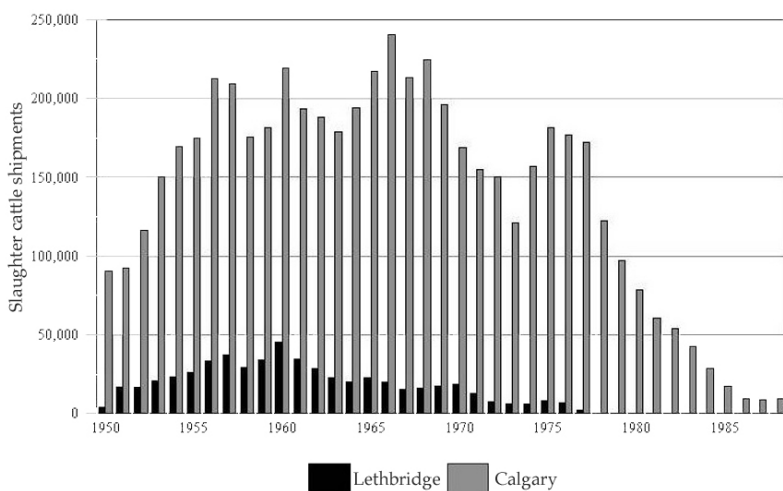


Figure 5 Slaughter cattle shipments from Calgary and Lethbridge Stockyards, 1950-1988

Source: Agriculture Canada Livestock Market Review, various years

Decline of Public Stockyards and the Fate of Associated Industrial Clusters

The heyday of terminal public stockyards came in the 1920s prior to the advent of paved highways and intercity trucking, when they handled most of the cattle destined for federally inspected slaughter. By the 1930s, terminal public stockyards were in decline both in the number of yards and in the number of cattle handled (Lesser 1993: 286). However, their demise was slow—it was not until the 1970s that stockyards and their associated industrial complexes began to close. Four factors account for the disappearance of stockyards and their industrial clusters from the metropolitan scene.

Mode of Livestock Transportation

The railway was the fundamental factor in the rise of public stockyards and industrial meatpacking. Live cattle were among the earliest agricultural commodities to be carried on Canadian railways. The vast quantities of livestock required to keep industrial scale meatpacking in operation could only be delivered by rail-borne livestock cars. Stockyards were essential to handle, market, and care for the large shipments of livestock delivered by train.

Livestock trucking provided door-to-door service from the farm to the factory, doing away with the requirement for stockyards as an intervening facility for slaughter cattle. Enhanced by a growing system of paved highways in rural areas, truck transportation favoured the use of unregulated country auction marts for stocker cattle. Truck shipment of livestock began in the 1920s and by 1933 accounted for 24 percent of the cattle delivered to stockyards while rail captured the remaining 76 percent (Canada 1935: 574). By 1957, the shares were almost reversed with 72.5 percent moving by truck and only 27.5 percent delivered by rail (Canada, Department of Agriculture 1957). As the farm truck displaced rail shipment of livestock, the chief locational advantage of stockyards, their track-side locations, became no advantage at all.

Livestock Marketing Practices

Until 1961, the majority of Canadian slaughter cattle were still being sold at public stockyards for a price negotiated between a “commission man” and a cattle buyer in a transaction known as a “private treaty sale.” The growth of packer direct sales at the expense of stockyard markets was encouraged by steady growth in

the average size of cattle feeding operations which were concentrated in southern Alberta, making it possible for packer buyers to call at each feedlot to evaluate cattle and make a bid. In 1985, over 90% of cattle were sold direct to packers when Agriculture Canada stopped collecting the data (Agriculture Canada 1995). Packer direct sales had made the stockyards almost irrelevant to the packinghouses. The Lethbridge and Calgary cases exemplify the gradual uncoupling of the stockyards-meat-packing nexus and the “disembedding” of central markets from slaughter cattle transactions.

Spatial Shift in Meatpacking

In the United States, metropolitan packing plants began closing in significant numbers in the 1950s as the industry shifted to smaller centres in cattle feeding regions in the United States. All of Chicago’s major packing plants had closed by 1970, prompting the closure of Chicago’s Union Stock Yards in 1971. A similar transformation in Canada’s meatpacking industry began some twenty to thirty years later, a restructuring process broadly paralleling that in the U.S. (MacLachlan 2001: Chapter 8). Most of the older, multi-species, multi-storey meatpacking plants in Canada’s metropolitan areas were closed in the 1980s. In the case of beef cattle, they were replaced by two specialized, very large scale cattle processing plants built in non-metropolitan centres. However, by the 1980s, the large packing plants had virtually abandoned the public stockyards as a source of slaughter cattle. Thus the impact of the spatial shift in beef cattle processing was not that great.

Urban Growth and Land Use Change

Stockyards were typically sited at the edges of their urban areas when they were first established. Land was cheaper and the large parcel size required by a stockyard could only be found on the edge of the built-up area. A discreet location on the urban margin concealed many of the unseemly sights and smells of the stockyard from the sensibilities of an urban public yet was accessible to the urban labour force and rural livestock producers. In the case of Calgary’s stockyard, cattle were being trailed in from the country as late as World War II with only the occasional urban stampede caused by barking dogs or flapping laundry (Friesen 1995: 24).

By the 1980s most of Canada’s stockyards were surrounded by residential tracts and other intensive land uses. This drove up land costs and traffic congestion, slowing the inflow of cattle trucks which was especially inefficient for calves and stocker cattle which

would then have to be turned around and shipped out of the city after they were sold. Once drawn to cities by their agglomeration economies, stockyards were driven out of cities by their agglomeration diseconomies. Such functions were much more efficiently located in rural areas close to livestock producers, where deglomerative economies could be realized.

Conclusion: Implications for the Theory of Industrial Districts

Stockyard districts provide some interesting variations on the causes of agglomeration and deglomeration. First, there were few of the small specialized and localized suppliers found in a Marshallian industrial district (Marshall 1920; Krugman 1991). The stockyards had thousands of suppliers (live animals, feed and straw for bedding) but these were arranged in a broadly dispersed rural network; they were neither localized nor specialized. The stockyards attracted large-scale packers simply because it was efficient to process an ambulatory product within walking distance of the market. Thus the stockyard was a monolithic supplier that formed a single massive nucleus.

The early stockyards district was characterized by large, horizontally integrated plants that used all but the squeal or moo. In the core metropolitan centres of the mid-western United States and southern Ontario, the large plants clustered around the yards attracted a variety of smaller downstream processors such as those envisioned by Porter (2000). These included processors of hides (and associated tanneries and leatherworks); processors of visceral by-products (sausage, meat preparations, and edible offal); rendering operations (bones, fats and inedible offal); and meat-cutting establishments (which transformed the carcass into primal and subprimal cuts and a variety of processed meats). The primary attraction was proximity, particularly given the cost of refrigerated transport and the perishability of the raw material. But the stockyard districts of Calgary and especially of Lethbridge were distinctly non-Porterian because they attracted relatively few downstream processors. Most of their output was destined for eastern Canada as swinging beef on the hook. Value-added processing took place closer to eastern Canada's markets, depriving Alberta of many food processing and manufacturing opportunities. Thus, Alberta stockyards districts cleaved true to the nature of western Canada as a resource-based periphery.

The specialized pool of labour that developed around these industrial clusters was perhaps unique as a pariah workforce—

those willing and able to do distasteful tasks in an unpleasant atmosphere. Few other manufacturing occupations offered such high wages for such low-skilled work. The immigrant packing-house work force was made infamous by Upton Sinclair (1906) in *The Jungle*. Chicago's Packingtown or "back-of-the-yards" became the model for the working class industrial neighbourhood—the company town in the growing metropolis, where the unseemly sights, sounds and smells of the stockyard were accepted as the price of work and upward mobility. In the case of Calgary and Lethbridge, there were no large Chicago-style Packingtown neighbourhoods immediately adjacent to the stockyard. After 1940, the union was strong and compensation was relatively high. Thus, the packinghouse workforce was not very mobile and the plants did not rely on any great pools of unemployed labour for their survival.

The "technological spillovers" described by Krugman (1991) have always been difficult to observe and document. The gradual introduction and diffusion of innovations such as electrical lighting, electrical power tools such as band saws, and the development of continuous on-the-rail dressing of beef in 1950 (MacLachlan 2001: 171-175), were likely encouraged by the proximity of the packing plants and packinghouse management.

In the stockyard industrial district, the most prominent and infamous manifestation of the trustful interfirm relationships described by Harrison (1992) was the alleged price-fixing between packer buyers, brokers, and cattle dealers in an ostensibly competitive and free commodity market. The "mysteries of the trade" were perceived by livestock producers, meat consumers, and the press as collusion to control and manipulate the livestock market by an avaricious meatpacking oligopoly. Despite investigation by a number of inquiry commissions, no incontrovertible evidence of price-fixing was ever uncovered (MacLachlan 2001: 205-211). Nevertheless, by clustering livestock dealers, brokers, and cattle buyers in one fixed and permanent market location in which producers were present only sporadically when they had animals to sell, the stockyard presented the opportunity for clandestine communication and the manipulation of livestock prices.

Changes in procurement and raw materials marketing and supply chains driven by technological change, in the sense described by Hoover and Vernon (1959), saw the industrial enterprise dealing directly with producers of crude or organic materials in rural areas. This created a denser web of primary material procurement linkages, doing away with the role of large central mar-

kets for the physical transactions of agricultural commodities. Similar processes may be found for other perishables such as central markets for seafood (e.g., Gloucester, Massachusetts) or produce (Ontario Food Terminal in Toronto). A more daring leap is to question whether centralized marketing infrastructure for trading intangibles (stock markets, commodities trading floors, metals exchanges) or the periodic markets for trading in more highly differentiated goods and intangibles (trade shows and conventions) might not also go the way of the metropolitan stockyard in favour of internet trading and cyber meetings.

Metropolitan flight of the packinghouses was among the first of many examples of industrial de-urbanization, driven in large measure by the costs of congestion in inner-city locations. The stockyard experience may teach us something about the centrifugal forces experienced by the high technology industrial clusters of the 1980s and 1990s (e.g., Ottawa's Kanata). The latter could eventually be hemmed in by the exurban expansion and edge cities of the new millennium, just as the suburban stockyards of 1900 became landlocked inner city yards by the 1960s.

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References

Agriculture Canada. 1995. *Livestock Market Review*. Markets Information Section, Production and Marketing Branch.

Canada. 1935. *Report of the Royal Commission on Price Spreads*. Ottawa: King's Printer.

Canada. Department of Agriculture. 1957. *Livestock Market Review*. Markets Information Section, Production and Marketing Branch.

Canada. 1961. *Report of the Restrictive Trade Practices Commission Concerning the Meat Packing Industry and the Acquisition of Wilsil Limited and Calgary Packers Limited by Canada Packers Limited*. Ottawa: Queen's Printer.

Cronon, William. 1991. *Nature's Metropolis: Chicago and the Great West*. New York: W.W. Norton.

Dicken, Peter. 1998. *Global Shift*. 3rd edition. New York: Guilford.

- Estall, R.C. and R.O. Buchanan. 1980. *Industrial Activity and Economic Geography*. London: Hutchinson
- Foran, Max. 1998. "Mixed blessings: the second 'golden age' of the Alberta cattle industry, 1914-1920." *Alberta History* 46(3): 10-19.
- Friesen, Leonard. 1995. *Cows, Cowboys, Cattlemen, and Characters: A History of the Calgary Stockyards, 1903-89*. Airdrie: Friesen Cattle Company.
- Harrison, Bennett. 1992. "Industrial Districts: Old Wine in New Bottles" *Regional Studies*: 26: 469-483.
- Hoover, Edgar and Raymond Vernon. 1959. *Anatomy of a Metropolis*. Anchor Books, Doubleday: Garden City, New York
- Jacobs, Jane. 1969. *The Economy of Cities*. Vintage Books, Division of Random House: New York
- Johnston, R.J., D. Gregory, G. Pratt, M. Watts. 2000. *The Dictionary of Human Geography*. 4th ed. Oxford: Blackwell.
- Klassen, Henry C. 1999. *A Business History of Alberta*. Calgary: University of Calgary Press.
- Krugman, Paul. 1991. *Geography and Trade*. Leuven: Leuven University Press.
- Lesser, William H. 1993. *Marketing Livestock and Meat*. New York: Food Products Press.
- The Lethbridge Herald*. 1950. "Public livestock market opening here next Monday." February 4: 11-13.
- MacLachlan, Ian. 2001. *Kill and Chill: Restructuring Canada's Beef Commodity Chain*. Toronto: University of Toronto Press.
- Markuson, Ann. 1996. "Slippery Places in Sticky Spaces" *Economic Geography* 72: 293-313.
- Marshall, Alfred. 1920. *Principles of Economics*. 9th edition. MacMillan: New York.
- Meyer, David R. 1977. "Agglomerative Economies and Urban Industrial Growth, A Clarification and Review of Concepts" *Regional Science Perspectives* 7(1):80-92.
- Nourse, Hugh O. 1968. *Regional Economics: A Study in the Economic Structure, Stability and Growth of Regions*. Economics Handbook Series. New York: McGraw-Hill.
- Philo, C. 1995. "Animals, geography, and the city: notes on inclusions and exclusions", *Environment and Planning D: Society and Space* 13:655-681.
- Porter, Michael E. 1998. "Clusters and Competition: New Agendas for Companies, Governments and Institutions" in Michael E. Porter *On Competition*. Boston: Harvard Business School Press.

Porter, Michael E. 2000. "Locations, Clusters and Company Strategy" in *The Oxford Handbook of Economic Geography* edited by Gordon L. Clark, Maryann P. Feldman and Meric S. Gertler. Oxford: Oxford University Press.

Purcell, Theodore Vincent. 1953. *The Worker Speaks his Mind on Company and Union*. Cambridge: Harvard University Press.

Schumpeter, Joseph A. 1947. "The Creative Response in Economic History" *The Journal of Economic History* 7:149-159.

Sinclair, Upton. 1906. *The Jungle*. Bantam Classics Edition (1981) New York: Bantam Books.

Storper, Michael. 1995. "The Resurgence of Regional Economies, Ten Years Later: The Region as a Nexus of Untraded Interdependencies" *European Urban and Regional Studies* 2: 191-221.

Sunley, Peter. 1992. "Marshallian Industrial Districts: The case of the Lancashire cotton industry in the inter-war years" *Transactions of the Institute of British Geographers* 17:306-320.

Weber, Alfred. 1929. *Theory of the Location of Industries* translated by Carl J. Friederich. Chicago: University of Chicago Press.

Wise, M.J. 1949. "On the Evolution of the Jewellery and Gun Quarters in Birmingham" *Transactions of the Institute of British Geographers* 15:57-72.