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Economic History Theme Study

THE LUMBER INDUSTRY IN MANITOBA

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I. **INTRODUCTION**

Since the early 1870s, the lumber industry has been an essential component of Manitoba's economic development. The province's forests, though lacking the substance of a British Columbia stand of Douglas Fir, have nonetheless proved adequate for the needs of the pioneers who used the available timber to fashion homes, furniture, railways, and structures as huge as the grain elevators which once stood in rows at every railway station. In 1900, there were 33 sawmills operating in Manitoba.[1] Until 1906, however, the majority of lumber milled in Manitoba still came from the forests of northern Minnesota, sent through the lakes and rivers of southern Manitoba to mills in Winnipeg. In 1906 the majority of lumber sold in Manitoba was milled from logs cut in the Rat Portage (Kenora) area. [2] Thereafter, the forests of Manitoba began to be harvested to supply the needs of developing prairie towns, but more importantly to be shipped to the United States, where insufficient quantities of spruce lumber were produced to satisfy the American market. Big American firms began to move into the Parkland region to produce lumber for export. After 1921, the American government, under pressure from American lumber manufacturers, began to raise the tariffs on Canadian lumber products. In 1930 the Smoot-Hawley bill was passed, setting a duty on Canadian timber of three dollars per thousand board feet * and then a surcharge of one dollar more. This resulted in a decline in Manitoba's logging operations.

By 1930, most of Manitoba's old growth forests had been harvested. What remained were smaller timber stands of poplar and spruce, which did not produce high-quality lumber. Lumber from other regions was imported into Manitoba, and the lower quality forests here were used for pulp and paper production, rough lumber, and laths and, after 1950, for the creation of alternative building products such as plywood and wafer board.

The extraction of logs from Manitoba's forests has traditionally depended upon two factors: settlement patterns and transportation networks. As the pioneers penetrated new areas, sawmills were set up to turn the nearby forests into lumber for homes, barns, and commercial enterprises. Often the newcomers cut their own logs and took them to a neighbourhood sawmill. The first lumbermen were dependent upon logs from Minnesota forests, which were shipped to Winnipeg by water. Later lumbermen logged, milled, planed, and retailed their product. Even Manitoba's most well known lumberman, T.A.Burrows, saw a need to develop different facets to his enterprise. Eventually his company's emphasis passed from logging and milling to retailing, and Burrows Lumber devolved into Monarch Lumber, a retail operation selling wood products from all over Canada.

No area in Manitoba could be successfully logged for commercial use unless it lay near a waterway system, or later, a railway. Therefore tracking the chronology of the development of lumbering in the various regions of Manitoba is relatively simple: follow the lakes and railways systems. The logs were usually cut inland and then floated down rivers in log runs to the big lakes, first Lake Winnipeg, then Lake Manitoba, and finally, after 1900, to Lake Winnipegosis. By that time, however, railways had been built near the Duck and Porcupine mountains, as well as to The Pas. Spur lines were often built directly to the mill sites. Since an abundant water supply was needed in the lumbering process, for floating the logs, removing the bark, for powering the steam engines, or preparing ice roads on which to draw loads of logs from the forest to the river, mill sites were always located beside a water body. The greatest era of foreign exploitation of Manitoba's forests, however, coincided with the creation of rail lines into the parkland geographic region of the province, a region typified by mixed forests. And it follows that the lumbering industry became concentrated in the parkland region, where it remains a dominant economic force today.

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*To avoid the time and space involved in converting the figures, written in the historic period but used in this contemporary report, to the metric system, the imperial system of measurement (board feet) is used throughout this document. For your information, in the metric system 1000 board feet converts to 2.35 meters ^3.

II. **REGULATION OF THE TIMBER INDUSTRY**

The federal government regulated the forest industry in Manitoba until 1930, when the Manitoba Government gained control of all Crown Lands. The Canadian government used the British colonial model for regulating timber cutting. In early colonial days, the British navy had been given timber-cutting rights in Quebec and the Maritimes, to provide poles for ship masts, and later fuel for their steamships. After 1840, when the Americans began to invest in the timber industry in Canada, bringing capital, expertise and advanced technology, new regulations had to be developed. The Canadian government decided to lease timber reserves rather than sell them outright. Once the timber was removed the land reverted to the Crown. The First Dominion Forestry Act was in effect from 1870-1907. In 1907 the Forestry Branch of the Department of the Interior was given responsibility for forest reserves. In 1912 the administration of licensed timber berths was transferred from the Forestry Department to the Timber and Grazing Branch.

In the Canadian West after 1880, temporary leases, called timber berths, were given out through the Canadian Department of the Interior's Crown Timber Office in Winnipeg. There were licensed timber operators who paid a cash bonus in advance to receive a license, good for 1-4 years, and then paid lower timber dues on the timber they cut. There were also temporary permits given for cutting a set amount of timber. After 1907, all notice of timber sales had to be advertised in the newspaper.

The company wishing to cut the timber usually made a written request to the Department of the Interior describing the berth. A timber cruiser, hired by the company, not the government, then estimated the amount of timber in a berth (and thus its worth). The berth was then put up for public auction, or more often, for sale by sealed tender in the form of a bonus payment. The time between posting the notice of tender and the opening of the bids being short, the company who proposed the berth usually had the advantage in bidding because they were frequently the only ones who knew its value. The berth was then awarded to the highest bidder. Inside knowledge of the worth of a timber berth was always an asset in the bidding process and one can well imagine that T.A.Burrow's Liberal background and kinship ties to Clifford Sifton, Minister of the Interior, were a decided advantage to his bidding for berths in the parkland area. He had a second advantage in that he had worked as a surveyor and road builder in the region.

In 1879, the maximum size of a licensed timber berth was 50 square miles, although frequently they were smaller. After 1907, the size was reduced to 25 square miles. Berths granted between 1872-1889 were leased for a 21-year period. [3] After 1903, the licenses were renewed every year. An annual ground rent of $2.00 per square mile had to be paid (later increased to $5.00). Additional dues of a 5% *ad valorem* (proportion of estimated value) royalty were also levied between 1879-1889. But in July 1889 timber dues were introduced at so much per board foot of lumber milled and varying amounts on other products such as laths and ties. These timber dues began at 50 cents per thousand feet in 1889 but steadily increased, becoming a real source of revenue for the government. This policy resulted in lumbermen frequently underestimating and under-reporting the amount of their cuts so as to reduce these fees.[4] The timber berth system, which led to the creation of companies with vast holdings, such as the Burrows Lumber Company, remained in effect into the 1950s.

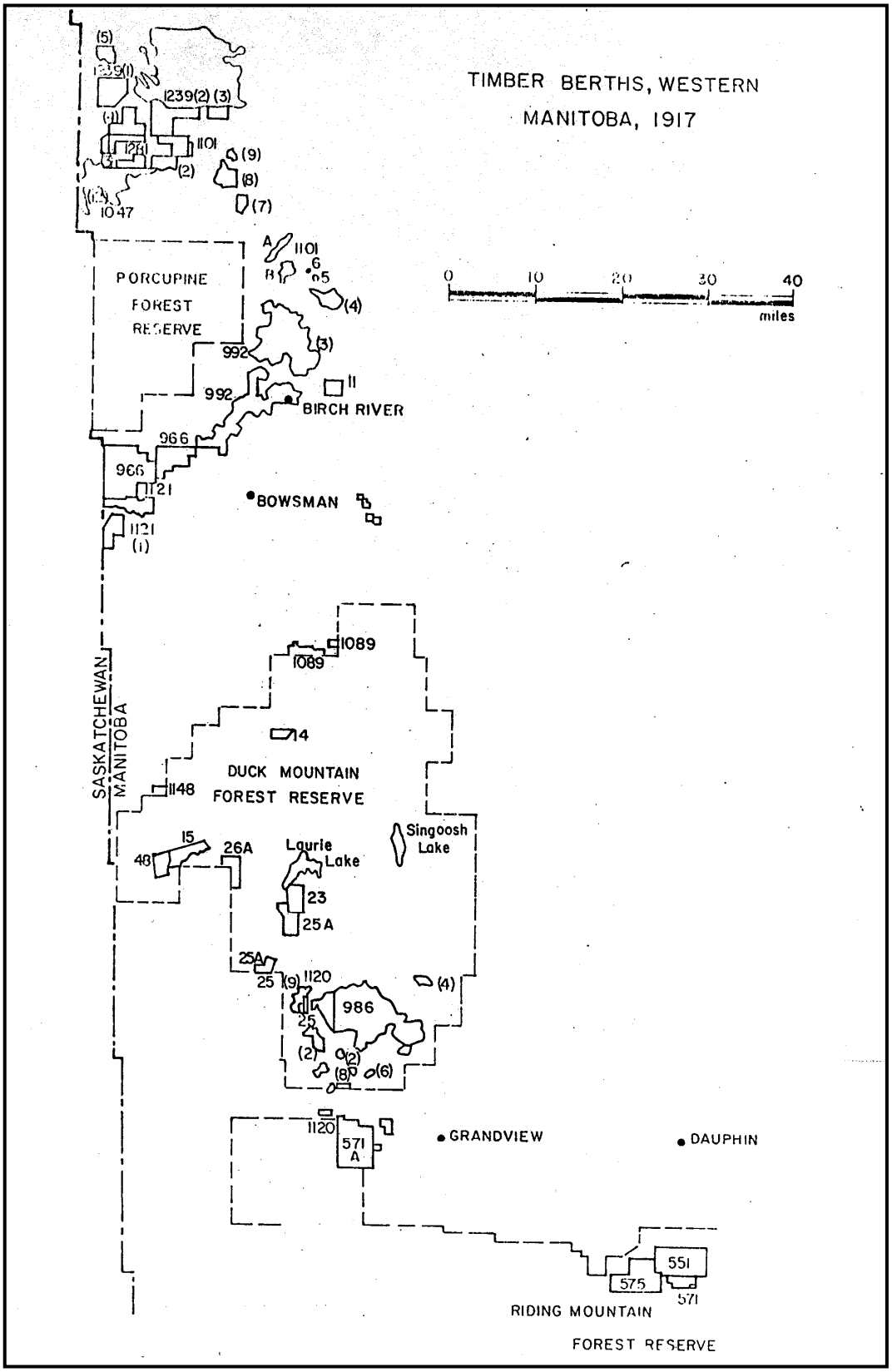
Although Canada's forests appeared limitless, Canadians had the American experience in Wisconsin to draw on and therefore were aware of a need to conserve the forests for the future. At the same time that timber berths were being awarded to American and Canadian lumbermen, national parks and timber reserves were established in 1895. The first ones in Manitoba were Turtle Mountain, Spruce Woods, and Riding Mountain, which totaled 2,562 square miles. In 1899 the Forestry Branch of the Department of the Interior was established as part of the Timber, Grazing and Irrigation Branch. A Chief Inspector of Timber and Forestry was appointed. His role was to take care of Canada's forests. While this did not mean that timber cutting was forbidden in the Timber Reserves, a minimum size (10 inches in diameter) was set for trees to be cut, and

lessees of timber berths were required to pay fire prevention costs.[5] Because the economic development needs of the country had to be given consideration, the work of the forest rangers was limited. Reforestation was not a requirement of the timber berth process but government foresters did inspect logging operations to make sure that all timber was cut and that slash and burn (tree trimmings) were properly handled. They also inspected the lumber camps for health and safety violations. Their most important job was to properly assess the stumpage fees for trees cut and the royalties for manufactured lumber to be paid to the government.

In 1906, Timber Reserves were renamed Forest Reserves and the Duck and Porcupine reserves, covering 1951 square miles, were added to the system. Riding Mountain National Park was created out of the Riding Mountain Forest Reserve in 1930. This did not mean that logging was no longer allowed within the Park boundaries, but rather that the sawmills began to disappear from within the Park itself. Timber permits worth $1.00 per cord or $1.00 per 1000 feet for lumber, were granted for cutting in the Park, until 1947 when the last timber berth was cancelled. The last sawmill was removed in 1937. [6]

Settlers in Manitoba could obtain a permit free, or later for a small fee, to cut a specific amount of logs from Crown Lands for building purposes. In the 1880s permits were issued for cutting trees on any vacant Crown Lands accessible to settlers. The result was that many people took the liberty of cutting timber on all vacant lands, be they School Lands, Hudson's Bay Reserves, or unsold lands. The Timber, Grazing and Irrigation Branch was responsible for overseeing the cutting of all timber in forests outside the reserves. To encourage them to erect substantial buildings, homesteaders in the parkland region were allowed to cut 8000 (2438.4 m) board feet of lumber.[7] Later, permits were available for three dollars per 1000 board feet, as well as salvage permits to cut deadfall or windfall trees for lumber.[8] Many permit holders cut their own logs but most took them to a sawmill to be dressed (turned into lumber). This led to the establishment of small sawmills in most pioneer districts. Often the settler would consign his cutting rights to the mill owner as well.

In 1930, the Province of Manitoba was finally granted control over its natural resources and Crown Lands. This meant that responsibility for Timber and Forest Reserves passed to a new provincial government department called the Manitoba Forest Service (now the Forestry Branch) of the Department of Mines and Natural Resources (now the Conservation Department). The Forest Act, passed in 1930, provided authority for forest administration. The legislation limited the size of a timber berth to not more than 25 square miles (but did not limit the number a person could be awarded), and awarded them to the highest bidder who accompanied his application with the full amount of the bonus required to secure a berth. The license granted for cutting was for one year but could be renewed from year to year for up to fifteen years. The act also forbade the export of pulpwood, and required that only companies or individuals owning a pulp mill could be awarded a pulpwood berth. In the case of timber berths, to obtain a berth required an individual to operate a mill of a certain capacity and for a certain amount of time per season. The amount of emphasis in the legislation on pulpwood was an indication that the government was aware that the timber resources of the Province had been reduced to small trees.



Map of Manitoba Timber Berths, 1917. Source:Department of the Interior, P.A.C. R/501-1917

III. DIVISIONS OF THE LUMBER INDUSTRY

During the fur trade era of Manitoba's history, Hudson's Bay Company employees cut trees for fuel and to construct posts. The Hudson's Bay Company journals are filled with references to logging. For example in 1746, records show that 104 trees were cut for planks and 800 for the stockades for Fort Prince of Wales (in Churchill) At first the logs were brought by dog sleds, then rafted up the river and later horses and oxen were used.[9] The Company hired "wooders" to go inland from its posts along Hudson Bay to cut poplar for firewood and white spruce for buildings, boats, and the manufacture of packing crates. Some of the white spruce stands in the God 's Lake and Fox River areas were of sufficient size to construct large warehouse depots. In that case, the timber was cut in the winter and rafted down river after spring break up. [10]As the HBC moved southward from the Bay, erecting new post buildings was a very important part of company business, and while at first the structures were of hand-hewn logs, the Company did import sawmill equipment in the early 1880s. [11]

While logging operations may have been as simple as one man going into the forest to cut enough logs by hand to build a simple log house, it was more complicated when the operation was carried out to fulfill the needs of a large commercial sawmill. In the late 19th century, when railways were being built across western Canada, there was a great demand for railway ties, bridge timbers, and telegraph poles, as well as building products to build homes and businesses. In the mid-20th century, timbers were required to build mineshafts in the new mines opening up in Manitoba's north. All this economic growth stimulated the logging industry in Manitoba's parklands and numerous sawmills, large and small, sprung up in the forested areas of Manitoba. What follows is a description of how a typical large logging and milling operation would have been conducted during the first quarter of the 20th Century, when Manitoba's lumbering industry was at its peak.[12]

1. BUILDING ICE ROADS

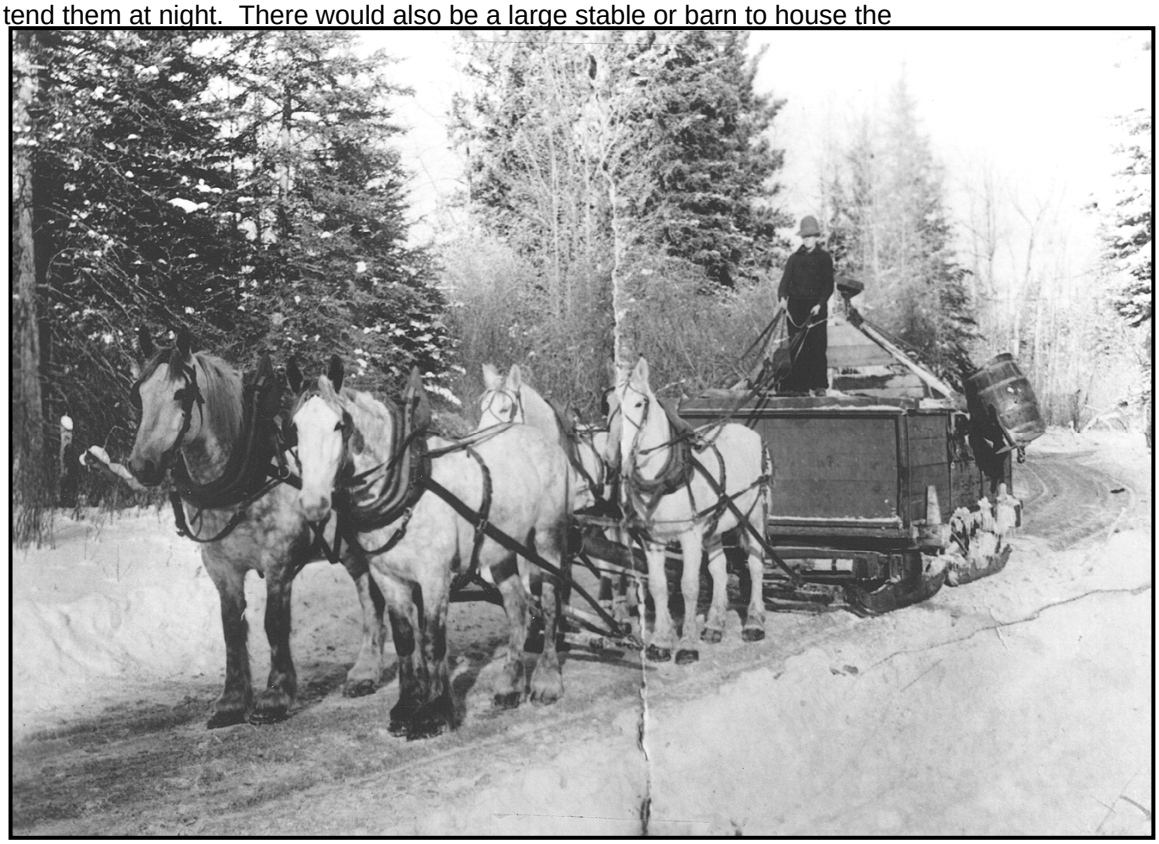
Central to the operation of any logging, especially in areas located distant from a river, was the creation of a system of ice roads on which logs could be hauled to a mill site. This work began in the summer when a foreman would survey the timber berth and lay out where cutting would take place and where the woods camps would be located in relation to the sawmill. As soon as there was frost, men were hired to build logging roads, which became ice roads. Fifty or so men would go out with axes and grub hoes to cut 30 foot wide strips through the timber, clearing it of roots and stumps and bridging small creeks. As soon as the ground on these trails was frozen, a bull rutter was pulled by eight to ten teams of horses to make ruts eight inches wide and six to seven inches deep. A water tank, built to hold 50 barrels of water and mounted on double sleighs with an eight-foot run, like the rutter, was sent along the roads, gradually preparing an ice base on the roads. Once the ice roads were eight to ten inches thick, a special ice rutter pulled by four teams of horses was used to keep the ruts in proper shape. Occasionally during the winter the water tank was used to flood the roads again.

The importance of these roads to logging operations can not be overstated, since their state determined the size of the loads that could be hauled on them. Since many of the haulers worked on a piecework contract basis, their expenses increased and their profits went down when the roads were not well maintained. Maintenance, however, remained the responsibility of the lumber company. The roads needed constant maintenance, especially on the southern slopes of the hills, where the sun melted the ice.

2. LOGGING OPERATIONS

Besides smaller, bush-cutting camps on the timber berth, there was also a main woods camp, which might house 150-200 men. Each fall crews went in and built the camps for the logging operation. The main camps were located in the middle of the cutting area and as near the river or

lake as possible. Water was essential for use in the camp and for maintaining the ice roads. Two hundred or so men were housed in two large bunkhouses, 40x60 feet, with no partitions. These were built of rough lumber and tarpaper and everyone slept on bunk beds. The buildings were heated with large wood-burning stoves, generally burning tamarack as fuel and needing a man to tend them at night. There would also be a large stable or barn to house the



Water sleigh used to create the ice roads used in lumber camps, c. 1906. Source: P.A.M.

fifty to one hundred horses needed to haul the logs, and a blacksmith shop to keep the horses shod and the saws sharpened. There would be a warehouse and an office, where a clerk kept tally of the lumber produced so that the duties to be paid the government could be calculated.

The most important building on site, however, was the cookhouse. It was a building similar to the bunkhouses but with at least three large double cook stoves. There was a cook, a bull cook who tended fires, hauled water and did the rougher jobs, and about five cook's assistants. Copious amounts of good food were essential components of any successful logging operation. Typical meals included porridge, eggs, bacon, toast, prunes, cake, pie, tea/coffee/powdered milk for breakfast; sandwiches, often sent out to the men at noon; soup, roast beef, potatoes, gravy, pickles, vegetables, bread, pies, canned fruit, tea/coffee for dinner. Men who worked from 6:00 a.m. to dark consumed incredible amounts of these victuals.

Usually timber-cutting camps were set up at diverse points in the timber berth and teams of six to eight men worked from these base camps to cut logs. Each camp was located in the centre of the area to be cut and each day the men walked to and from the camp, usually returning for their noon meal. When the cutting progressed to a distance too far for a noon walk, a dinner wagon

was sent out to the workers. If the logging operation were a small one, the sawmill would be set up where the timber-cutting camp was, and all parts of the process carried out there.

Teams of four to six men, working together, felled logs. Only trees marked by the timber cruiser earlier in the season were felled. In teams of two, they used crosscut saws. Then they removed the branches and threw them into slash piles. Earlier regulations required that the company burn this debris, but fires often resulted, so this practice was stopped. On the other hand, slash left in piles was excellent tinder for forest fires, and often fire swept across areas that had been lumbered earlier.

A sleigh load of logs being transported from a cutting camp to the river bank, 1901. Source: P.A.M.

After the limbs had been removed the logs were cut into manageable lengths. A logger using a Swede saw cut them into 12, 14 or 16-foot lengths. Spruce and tamarack were generally the types of timber cut in the Parkland area. Cutting was selective: only trees with a certain diameter were cut; the rest were left to mature. Other crews were responsible for skidding the logs from the bush and loading them onto sleighs.

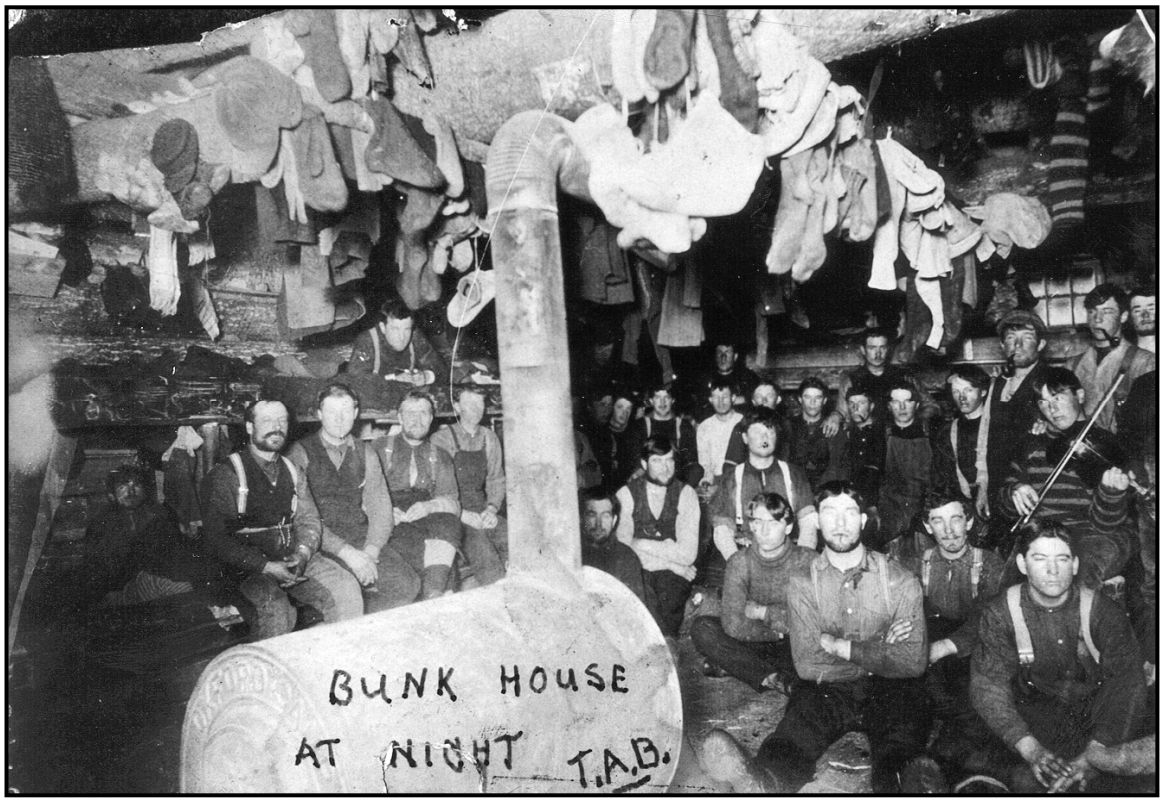
3. LOG HAULING

Another crew was responsible for using horses to skid the logs from the cut site to a more central location, where, using a jammer, or hoist, the logs were loaded on sleighs to be hauled either to a landing site, the river or directly to the mill. The jammer was about 35 feet high with a block at the top and bottom and a heavy steel cable that was hooked onto the logs. With power from a team of horses, this contraption loaded 10-ton loads. If the logs were going by ice roads, heavy sleighs, with 14 inch by 16-inch elm benches covered by steel shoes, were made in the camps. Eighteen-foot long spruce beams with nine-foot high stakes were mounted on the runners to hold the logs until they reached the river where the stakes could be withdrawn to release the load.

The six horses pulling the sleigh had a difficult time starting it. This was accomplished by striking the runners of the sleigh. Often a “snatch team” was used temporarily to help start the sleigh. Once started the sleigh could not stop until it reached its destination because it would be too

difficult to restart. If the down grade was steep a sandman on the sleigh had to sprinkle just enough sand to slow the sleigh's runners but not enough to stop it dead.

The logs were hauled to a landing camp, possibly five miles away. At the landing camp, located near the riverbank, the logs were decked in such as way as to be easily rolled into the river when the river log drive began in spring. 30-40 men spent their days exchanging empty sleighs for full ones at the bush camps. In this way two round trips could be completed each day.



Inside a bunkhouse in a Burrows lumber camp, 1906. Source: P.A.M

4. THE RIVER DRIVE

Before 1880 lumbering was only carried out in areas adjacent to rivers deep enough to carry logs to a mill site, but in the 1880s American lumbermen developed “splash damming”, a method that turned little streams into torrents large enough to float logs. This method was used in the Riding, Duck and Porcupine forests.

The river drive began when the river was free of ice. Usually a dam had been built behind each basin into which the logs would be dumped at the landing camps. The water held behind the dam would now be used to push the logs down river. The water flow levels required careful monitoring by the river foreman. If too little water was released the logs would not make it down river. If too much was released the logs might become beached on the banks of the river.

About 100 experienced men would be hired for the drive, the pay of $5.00 per day being a great attraction since regular wages in the logging camps were around $30.00 per month. [13] A party of 6-7 river drivers was designated to take care of certain sections of the river, usually five miles in length. They watched for logjams, which were more likely to occur at bends of the river, or where the water levels were too low. Each driver used a pike pole to reach out and direct logs either by pushing or pulling. The pike pole was a long slender pole, up to 12 feet long, 3 inches in diameter with a sharp steel spike on one end and a small sharp hook pointing backward. The young men who worked as log drivers expected to fall into the river a few times a day but they had to take care not to lose their pike poles and more importantly, not to be hit by the passing logs. The work was dangerous, since once the strategic log which had caused the jam was removed, the logs would swiftly start on their way again. Usually the log that was causing the jam was chopped

away but sometimes dynamite was required to clear a logjam. If a jam lasted too long it caused flooding and carried the logs into low lying flats and "dead" rivers where it was difficult to extract them later. When all the decked logs had been rolled into the river, the crews followed the drive, gathering up stranded logs to be carried, pushed, dragged or floated to the river again.

The drive usually took two to three weeks, depending on how far the logs had to travel to the mill. Hanburys drove their logs all the way down the Shell and Assiniboine rivers from the Duck Mountains to Brandon, which took more than three weeks. Most mills were located closer to the forests than that. Once the logs reached the mill site, a boom was placed across the water below the mill, usually located on a dammed river or a lake. The chains around the boom were opened occasionally to allow a new batch of logs to be taken into the mill.

5. THE SAW MILL

Sawmilling was an important part of the forest industry in Manitoba in the early 20th Century. Logs might be imported from Keewatin or Minnesota, or cut by farmers in small patches, but a sawmill was required to turn all these logs into building products. It might be a portable mill, brought to saw local timber cut by settlers. It might be a big mill in Winnipeg, set up to saw logs imported from outside the province. Or it might be a large permanent mill, set up beside a waterway that gave good access to hinterland forests, such as the Grandview Mill of T.A.Burrows. Alongside the sawmill there might be a planing mill, used to refine the rough lumber after it had dried, but this was only an essential part of large sawmill operations.

The sawmill was always set up near the log supply. Usually these had been floated into a basin of a river or lake and were being held by a log boom and released to the mill as required. They may also have been hauled by horses or, by mid-century, by trucks, to the mill site. Men using cart hooks then directed the logs towards a conveyor belt called a jack-ladder. Two men with pike poles directed the logs on the jackladder, sending them to different saws. Steel tooth-like projections, called log dogs, held the logs on the jackladder. To remove sand and lose bark, the logs were steam blasted before being sawn.

The logs came in near the top of the mill and skids sloped down from there to each carriage. Before being put on the carriage, the scaler, the first person in the mill to handle the logs, estimated the amount of lumber in each log in order to determine the duty payments that had to be paid to the government.

Probably the most important machine in the mill was the band saw. Invented in the 1880s in the western United States, the band saw had helped revolutionize the lumber industry by incredibly increasing a mill's capacity. The band saw had two main advantages over the old circular saws: large logs could be handled easily, and the thin steel "band" used to saw the wood produced only a small "kerf" (sawdust) along its cut, thus reducing waste. •

Two men, known as dogger and setter, rode on the carriage, which was a wheeled apparatus that carried each log to a saw. Their job was to clamp the log securely while it was being sawn, and adjust its position, as directed by the sawyer. The sawyer controlled the operation of the carriage with levers. The carriage, propelled by steam cylinders, might travel as fast as 60 miles per hour, as it cut two-inch planks from the log. After each cut, a steam-powered shaft bunted the log, causing it to rotate a half or quarter turn so that another slab or plank could be cut from it. Some saws cut both ways, travelling through the log one direction and then reversing themselves to cut

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• The band saw consists of "a continuous band of steel with teeth on both edges. The band moves at an extremely high speed around two large, broad rimmed wheels. One wheel, a type of heavy cast–iron flywheel, commonly is mounted under the floor and the other is mounted above the sawing area."(Encyclopedia Britannica, Vol.14, Lumbering, London, William Berton, 1970, p.413, cited in Welch, Grandview Mill, p.30) Commercial mills, like Burrows, usually had two band saws, one for cutting large timber and one for lighter logs.

going the opposite direction. This was more efficient, but the smaller mills usually had band saws that only cut one direction. How fast the cut was made depended on the power source. A steam driven carriage was faster than an air driven carriage, but the latter was safer.[14] Logs were generally sawn in 12-16 foot lengths but could be cut longer for special orders. The constant

Logs being deposited on the river bank to await the spring river drive, c. 1906. Source: P.A.M.

sawing dulled the saw blades quickly. Saws were usually changed for sharpening every two to two and one-half hours, the milling stopping for fifteen minutes while this was accomplished.

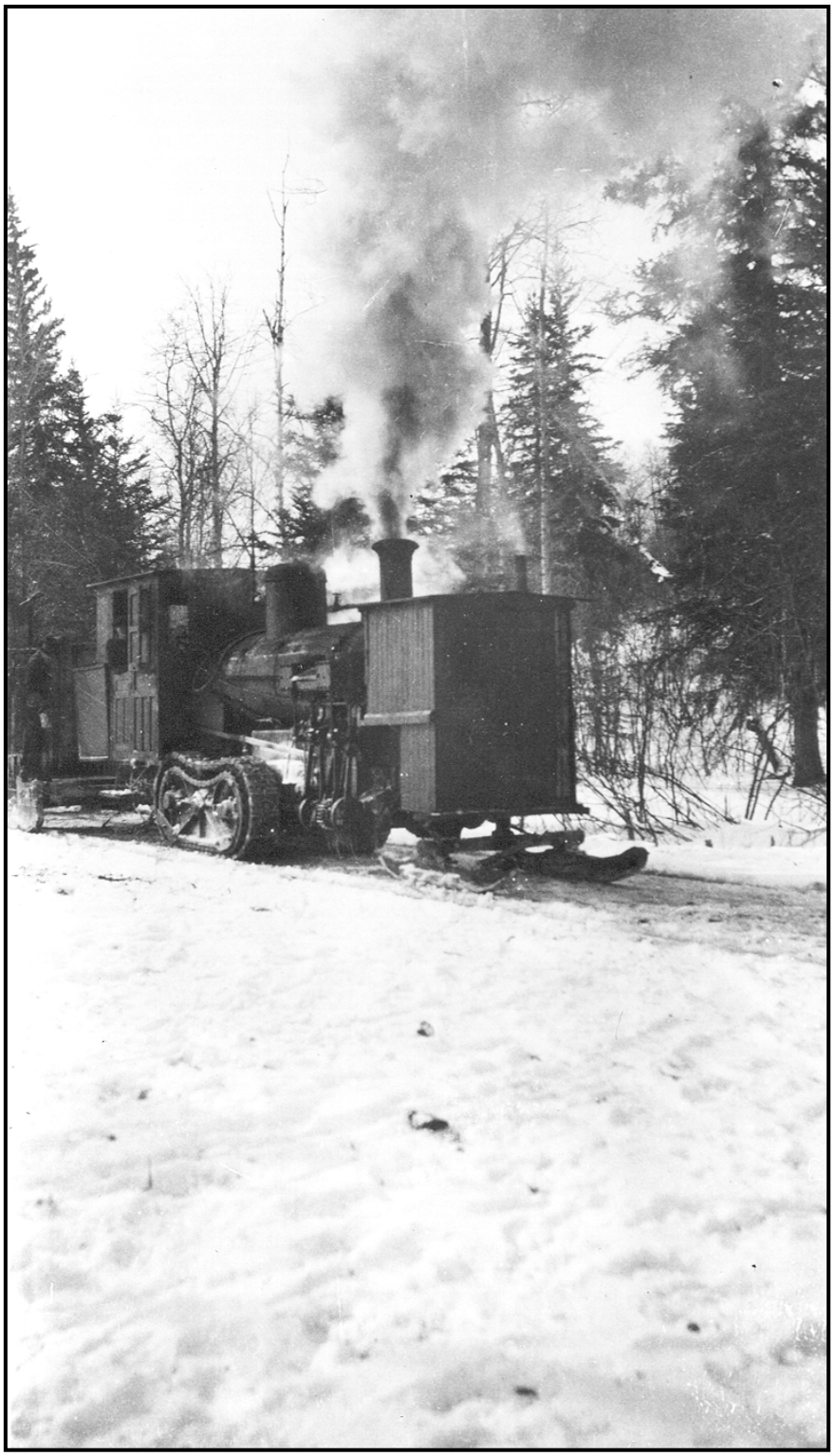
After passing through the sawmill the lumber and outside slabs were sorted from a conveyer belt to their respective places. Poor slabs were directed to the burner. Better slabs were sawn into four-foot lengths to be turned into laths or firewood for the mill itself. Lumber was sent to be resawn into desirable lengths.
The sawn planks might then go to an edger, which trimmed off any remaining bark on the edges and might also saw them into narrower widths. Only cutting with the grain, or “ripping ”was done on this machine. After passing through the edger, lumber might be conveyed to the trimmer. This machine consisted of a number of small circular saws used for trimming any irregularities from the lumber. From here it was sent by conveyors to the sorting table.

On the sorting table men graded, marked and sorted the lumber into various small carts to be hauled away. The four-wheeled carts, each loaded with one thousand feet of lumber, were pulled by a horse on a narrow gauge track to the yard, where they were piled according to length and grade. This new “green” lumber would then be left to season.

A large incinerator, about 25 feet in diameter and 75 feet high, was usually situated near the mill and a conveyor belt could carry the waste materials to it.

6. THE PLANING MILL

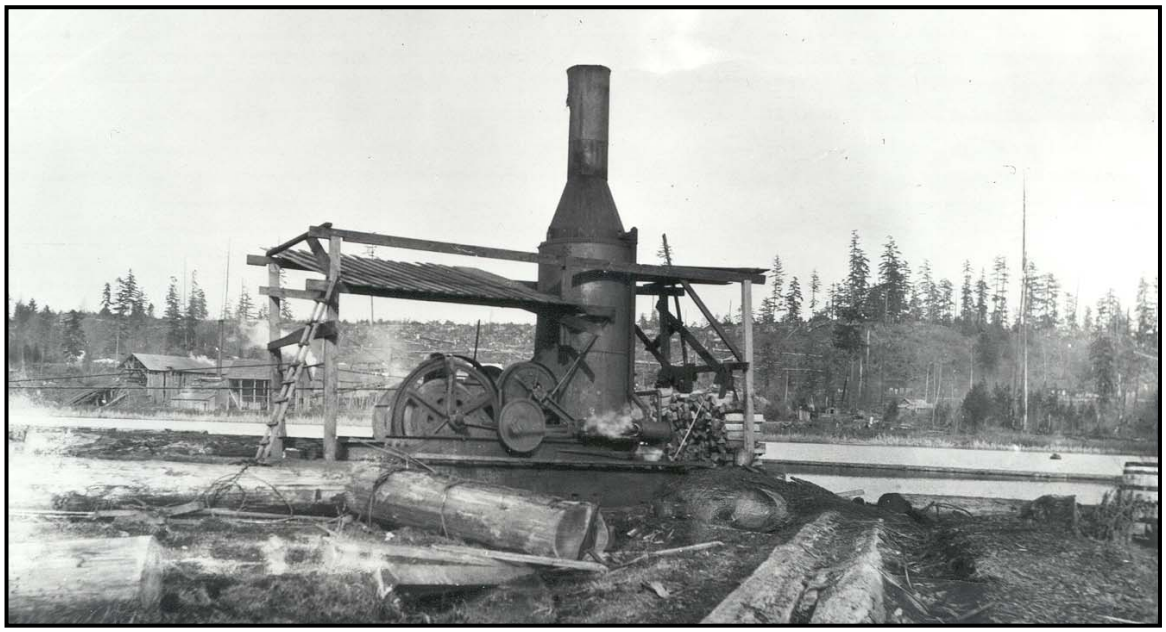
The planer was a large machine which smoothed the wood by removing any rough edges or irregularities, therefore improving quality and value. Planing mills often contained other machines to further process the rough lumber, such as a “sticker” to make moldings, and a band saw to resaw the lumber into smaller



A steam log hauler in use in the Duck Mountains, 1919. Source: P.A.M.

widths. Using a series of knives, the planer smoothed the wood by paring off the excess wood. The purpose was to smooth the lumber to an even thickness and ready it for use in doors, window frames and sashes, and trimmings.

The planing mill was usually a two-storey building, the bottom floor consisting of shafts and workings of machinery and the second floor consisting of the working area for processing the lumber. One of the machines on the bottom floor was a fan-like machine, called a cyclone, which blew the shavings and sawdust from the planer into the boilers that fueled the carriages. A platform surrounded the building at the second level so that rough lumber could be brought directly from the yard and the finished product could exit directly to a railway spurline, if one existed.



A steam engine used to provide the power for a sawmill at Manigotagan, c. 1904-1915 Source: P.A.M.

7. THE LATH MILL

Laths were an important part of house construction in the early part of this century. The interior walls of a house were made of narrow strips of wood called laths, nailed to the wall or ceiling and used as a base for plaster. Therefore the manufacture of this product was an important part of any sawmill operation. Because they were covered with the plaster, laths could be made out of very rough lumber. Their small size, usually less than two inches wide, also made them an ideal product from the small trees of Manitoba's forests.

Usually the lath mill was attached to the sawmill. Outside pieces cut from the logs by the band saws and edgers were processed there into laths. Laths were then bound into packages. Another popular use for laths was in the manufacture of snow fences. Used by most local governments to cut down the drifting of snow across roads on the open prairies, snow fencing was made by wiring laths together to form rolls which were then dipped into red paint to make them visible against the snowy, white winter landscape.

8. THE RETAIL LUMBER INDUSTRY

Although many of the early sawmill companies also had planing operations, after 1900 few had retail operations attached to them. Most logging, sawmilling and planing operations began to function as wholesalers of lumber to a growing number of retail lumber and hardware outlets. Every large town was served by at least one lumberyard, and sometimes as many as six, as the new settlers required building supplies to erect homes and businesses. With business booming, progressive retailers saw no reason to confine their yards to one or two areas. They branched out as much as possible, financed by investors who provided the funds to set up or buy numerous yards. The result in the early 1900s was the evolution of line yards.

> …Some men undertook to have line yards all over the country. One firm has 125 yards. For instance, they go to the manufacturer and sometimes buy three, or four, or even five million feet at the lowest price per carload. They enter into competition against the other retail dealers and drive them out of business. It often happens…that when these line yards get control at any one point they run an opponent out of business, and then of course they put up the price of lumber. [15]

The new companies made certain that a man who knew building products operated each lumberyard. Where competitors were too numerous, competing yards were purchased and closed. Companies became larger, cooperating among themselves, and exchanging yards in different towns "where it proved of mutual benefit."[16] Soon these companies were diversifying, selling paint, glass and hardware. Line yards drove many of the local-owner-operator lumberyards out of business. In rural Manitoba three early prominent line retailers were Burrows Lumber Company, the North American Lumber Company and Monarch Lumber Company.

In 1890, Manitoba lumbermen such as T.A.Burrows, G.B.Hauser, and Mr. Patrick and Mr. Estlin joined together to form the Western Retail Lumbermen's Association. They had formerly been members of the Western Lumbermen's Association, which was an organization of sawmill owners. The aim of the new organization was to create lumber retailers out of storekeepers who had previously kept a little lumber in their backyards. The association helped them improve their business practices and develop into line yards.

The retailers faced growing changes as Western Canada passed through the pioneer stage. After World War I, there was a demand for non-resistant creosote fence posts and cut-to-length lumber. In 1916, the planning department of the Western Retail Lumbermen's Association produced its first plan book of model homes. [17] This idea stemmed from the competition the local retailers were facing from eastern mail order houses that were offering plans and prepackaged kits for houses, and thus threatening local sales. For example, in 1912, Eaton's offered a one and one-half storey house, 22x28 feet, with basement and lean-to kitchen, 12x22 feet, for $560.00. [18]The farmer sent the money to Eaton's during the winter and they had the interest from it until spring when they sent out a carload containing all kiln-dried fir, doors, windows, shingles, nails, cement, etc. To compete, the Lumbermen's Association catalogue of homes became a twice-yearly staple. These plan books from the lumberyards became a catalogue of "dream houses" for rural people.

Retailers were exhorted to urge farmers to build silos – describing them as a boon to mankind, [19] but definitely a boon to the retailer because of the huge amounts of lumber required to build one. Accompanying this sales pitch was the granting of credit to the farmer to allow him to finance the building of such a huge project. As the Great Depression began to descend on the Canadian economy, many of these lumbermen were holding mortgages on farm property. Lumber dealers were hard hit by the Depression because building came to a "stand -still" in most communities. Many dealers kept afloat through the sale of coal and wood, staple products. These were often sold on credit to needy consumers.

While the coming of World War II brought a welcome upturn in the economy, lumber retailing did not rebound as quickly as other sectors of the economy. The lumber camps themselves suffered a shortage of workers as young men went off to war. Government priorities for ship building,

barracks, and repairs in war-damaged areas overseas used up most of the available supplies of wood products. Strict price controls were imposed on sales in Canada. But improved crops meant that debts incurred during the Depression could now be paid, putting some money in the retailers' pockets.

After the war the lumber shortage continued as manufacturers preferred to sell their product at higher prices in the United States. Finally, in September 1947, price controls were lifted, and business began to return to pre-1930 standards. The National Housing Act, Farm Improvement Act and Veterans Lands Act meant that Canadians began to build new single family dwellings all over urban Canada as well as new farm buildings. But as business increased for lumber retailers so did the cost of transactions. Freight rates rose by 21% in 1948, 20% in 1949-50 and 12% in 1951. [20]

The 1960s saw the beginning of a huge change in lumberyards. While standard lumber was still available, the yards began to sell an array of hardwoods, plywood, paneling, acoustic tiles, plastic laminates, ceramic tiles, builders' hardware, asphalt and cement products, in short everything the homeowner and "do-it-yourselfer" needed to build or decorate the home. This trend continued as the service to the customer became of foremost importance. Rationalization of the lumber retailing industry followed, with the Revelstoke Building Materials Limited purchasing the Monarch Lumber Company in 1964. [21]In the 1990s, after the Free Trade Agreement between Canada and the United States allowed the exchange of goods freely between the two countries, more and more American products became available. This was followed by the arrival of big American retail-building companies into Canadian cities, causing a further rationalization of Canadian lumber retailers to meet the competition. The first big retailer to leave the market was the Beaver Lumber Company. In Manitoba, Dominion Lumber also disappeared. The Canadian company, Revy (Revelstoke Company) became the major competitor of American firms.

III. REGIONAL OPERATIONS

An attempt has been made in this section to describe the operations of sawmills in the various regions of Manitoba. This is not an inventory of every mill that ever operated in the province, but rather it is representative of the larger mills, those that held timber berths, those that operated for a considerable length of time, and those that had a significant economic impact on the region.

1. WINNIPEG

There may have been some small portable sawmills in the Red River Settlement, but it was not until after 1870 that the first commercial mill was established. The first sawmill, which operated from 1871-1875, was likely that of W.J. Macauley and his partner, J.C.Burbank of St. Paul, Minnesota. In 1872 Brown and Rutherford, and Dick and Banning also opened sawmills. Hugh Sutherland operated a mill along the Seine River in St. Boniface from 1882-1887.[22] At first, these mills sawed lumber from timber shipped to Winnipeg from Minnesota. These imports were substantial; Macauley and Jarvis imported 4.5 million board feet of white pine and thirty loads of seasoned lumber from Minnesota in one year. [23] The selling price for spruce in 1882 was $20 - $25.00 per thousand board feet, and pine was $30-$40.00,[24] but this fell by nearly one-half in 1883.[25] These logs were cut in Minnesota and driven down the Roseau River and other tributaries to the Red River and hence into Winnipeg. The logs were boomed on the river waiting to be sawed. Several American firms followed Minnesota logs to Manitoba and established operations in Winnipeg in these early years. These early firms were highly successful because of the building boom taking place in Winnipeg. This situation, of a limited supply and a heavy demand, would be repeated all across Manitoba as new towns were born.

To supply the needs of these early sawmills, logs were soon being cut from Manitoba's forests. But Manitoba's boundaries at this time placed most of the timbered areas outside the province, in an area known as the Northwest Territories. Boundary extensions in 1881 and 1912 expanded the province to its present size. The first mill to depend upon local timber was that of A.A.Taylor of High Bluff who began logging operations along the Assiniboine River in 1874. In 1880 when the Crown Timber Office opened in Winnipeg, most local firms applied for timber berths in the Northwest from which to cut their own logs. They continued, however to import certain kinds of timber from Minnesota, hard wood that were not available in Manitoba. Brown and Rutherford held a timber berth on Moose Island in Lake Winnipeg and Dick and Banning had one at Hole River. [26]

The lumber industry became one of Winnipeg's major industries in the 1880s. Winnipeg was booming. With 400 buildings erected in 1880, and 700 buildings erected in 1881, "arriving carloads of lumber were snapped up, practically regardless of price, by purchasers who were waiting at the (train) depot.[27] Winnipeg lumber dealers became suppliers to smaller retail lumberyards in the rural West. These companies soon became wholesale dealers and diversified their operations, becoming window sash and door manufacturers.

In 1882, the value of the lumber trade in Winnipeg was over two million dollars but, by 1885, it had slipped to fourth place behind grocery and provisioning, grain and flourmilling, and dry goods. American timber continued to be the main source of Manitoba's lumber until 1906. [28]Thereafter lumber milled in Winnipeg came from the parkland region of Manitoba, as well as Northwestern Ontario. After 1891, lumber from British Columbia began to find its way eastward, becoming more important than the American source.

The completion of the Canadian Pacific Railway between Winnipeg and Rat Portage (Kenora) made the timber in that region available for Winnipeg's sawmills after 1880. Several Winnipeg millers, such as W.J.Macauley, moved their operations to the Lake of the Woods and Rainy River areas. These mills were now better located to handle Minnesota timber and the log drives up the Roseau and Red rivers came to an end. Thereafter manufactured lumber was barged to Rat

Portage and then shipped by rail to Winnipeg. Lumber mills in the Lake of the Woods area sawed millions of board feet of local and imported timber. In 1900, when the Manitoba and Southeastern Railway was built to Rainy River, it made the shipment of Minnesota timber to Winnipeg that much easier. The presence of the railway both helped and hindered the development of the lumbering industry in Manitoba. While it encouraged the importation of out-of-province timber, the railway also stimulated the sawmilling industry in Winnipeg. New sawmills sprang up in Winnipeg to process the logs from the Keewatin region. From Winnipeg, lumber could be shipped to the developing West. D.O.Cameron, president of the Rat Portage Lumber Company, erected a lumber mill in Norwood in 1906. All Winnipeg's early lumber mills were located along the Seine River and the Red River in the vicinity of the C.P.R. railyards.

2. LAKE WINNIPEG

FORT ALEXANDER MILL

In 1878, T.A.Burrows, in partnership with Arthur Walkley, purchased Donald Smith's sawmill at Fort Alexander, near the mouth of the Winnipeg River. The mill had a capacity of 10,000 board feet per day and was supplied from two timber berths, one covering twenty square miles on Catfish Creek, the other covering 30 square miles on the west shore of Lake Winnipeg across from Dog's Head Point, near the Narrows. Logs from the northern timber berth were barged down the lake to be cut at Fort Alexander. [29]But Burrows and Walkley were not the only firm lumbering in this area. William Stubbs had been granted a timber berth, covering 46,400 acres, in the Winnipeg River area. [30] His mill seems to have been one of two operating "at the Dog Head," that was selling boards and shingles to the Hudson's Bay Company in 1884.[31] So prevalent was sawmilling in the Lake Winnipeg area, that HBC trader, R.Ross, at Berens River complained that "a good many of his Indians [were] giving up hunting and [were] going to work in the lumber camps in his vicinity."[32]

In December 1882 Burrows and Walkley relinquished their license at Catfish Creek in favour of a twenty square mile berth on the west shore of Lake Winnipeg near Fisher Bay. [33] The mill was moved to the berth on Fisher Bay.The following year the two men sold their interests in the area to the Northwest Lumbering Company. That company moved the mill to Selkirk. The Burrows-Walkley partnership was dissolved in 1883 and Burrows established a new firm called the Selkirk Lumber Company and Walkley, too, formed a new partnership. In 1897 Burrows formed the Dauphin Lumber Company and relocated his operation to the Parkland region.

A lumber raft tied up at a sawmill site on Black Island in Lake Winnipeg., 1928. Source: P.A.M.

BROWN AND RUTHERFORD, POINT DOUGLAS

This firm established a small planing mill in Winnipeg in 1871. What makes them unique is that they remain in business in the city today, having continued to hold their place in the Winnipeg market as millwrights, producing sashes, doors, and moldings.

Their original planing mill, with a capacity of 10,000 bd. ft., was located on Bannatyne Avenue, [34] but another factory was built in Point Douglas near the Louise Bridge, and it is at this location that the firm continued to do business for all these years. The company had timber berths on Lake Winnipeg. Their first sawmill was set up in 1879 at Manigotogan on the east side of the lake,[35] and in 1880 they also had a mill on Moose Island. The production capacity of that mill was 10,000 bd. ft per 12 hours.[36] Their next mill was built at Birch Point in 1926-27. It burned in the 1940s and was never rebuilt. Another mill was opened on Sturgeon Bay in 1933. This mill processed logs floated down the Manitogao River each spring. Other mills were later set up on the west shore of Lake Winnipeg and on the West shore of Lake St. George.[37]

Brown and Rutherford used barges and steamboats to carry this lumber to Selkirk and on to Winnipeg.[38] The barges carried 50,000 bd. ft. per barge. Since the company was producing finishing products, such as oak moldings, much of their raw materials were imported. However, well into the 1940s the company maintained timber berths in the Lake Winnipeg area.

JONASSON-FRIDRIKSSON MILL, ICELANDIC RIVER (RIVERTON)

Timber resources on the Lake Winnipeg shoreline had already been tapped at several points when the Icelandic settlers arrived on the west shore in 1875. The lumber camps and mills, with the exception of the one on Hecla Island, were all on the east shore of the lake, where there were more natural harbours. Lumber from these mills was towed by barge to Selkirk and then sent to Winnipeg.

Although harbours were scarce on the west shore, timber resources were not. The Icelanders needed lumber to build their homes and to engage in boat building and fishing, industries that were part of their maritime heritage. The Icelandic Colony was in dire economic straits, with people leaving in large numbers for other parts of the West and the United States. A leader in the Icelandic community, Sigtryggur Jonasson, believed that a sawmill on the west shore of the lake would give the economy a desperately needed boost. Use of the Icelandic River, as a harbour, was essential to developing lumbering and boat-building industries. Jonasson felt that the ten-year supply of timber resources on both sides of the Icelandic River warranted taking a risk on establishing a harbour at the river's mouth. The river's tendency to silt up in dry years was temporarily removed by high water levels in 1879-80. In 1879 a group, consisting of Sigtryggur Jonasson, Fridjon and Arni Fridriksson, formed a company to establish a mill at Icelandic River. [39]

In Selkirk, Jonasson purchased a fifteen-ton tug, "Victoria." Intended for use hauling the logs across water to the sawmill, the boat was immediately put to work hauling goods and people, making regular trips up the Icelandic River, proving the viability of the harbour. In 1880, an American businessman from Selkirk, James Walkley, joined the company, bringing with him new capital to purchase mill machinery from Ontario, build two barges, and erect the sawmill.[40] The new mill was "the best constructed anywhere along the lake; it had the boilers and main machinery in the lower part whereas on the second storey was the main saw, the trimmer and other minor machinery."[41]

In summer 1881, the company built a lumber camp near Vidines, two miles from the mill site. They had earlier offered local farmers $5.00 per thousand feet for logs cut on their own lands. By spring the company already had the equivalent of half a million feet of lumber in logs stored on the river awaiting the mill's opening. [42] The mill opened in August 1881, with a night and day shift, each employing 15-20 men, a real boon to the economy of the settlement. For four seasons, the

mill turned out 500,000 board feet of lumber annually. The lumber was hauled by barge directly to Selkirk, generally between June and the end of October, when the river generally iced over.

By the 1884 season, however, most of the accessible timber had been cut in the Icelandic River region, and the sawmill was relocated to Bad Throat River (now Manigotogan), on the east side of Lake Winnipeg. The change in location provided a good timber supply and a dependable harbour. The company replaced the two small barges with a large one similar to those used by the Selkirk lumber companies. The new barge, the"Aurora", was built near the old mill site at Icelandic River. Launched in summer 1885, the boat was towed to Selkirk by the "Victoria" and there converted into a steamer with two side paddles. These changes made her too wide for the Icelandic River and although she was never able to return to that harbour again, she was used as a passenger and freight boat on Lake Winnipeg until 1892.[43] Unfortunately the ship's association with the lumber company ended in 1888, when the Jonasson, Fridriksson, and Walkley Company suffered a financial setback caused by the economic depression of 1886-7. The company's last year of operating the sawmill at Bad Throat was 1891.[44] The sawmill at Icelandic River however, was the first industrial venture in the Icelandic Settlement and played a part in keeping the community alive, and giving birth to a boat-building industry in the Riverton region. [45]

In 1890, when Sigtryggur Jonasson visited his mill at Bad Throat River, he left a report of the other mills operating in the Lake Winnipeg area at that time. Besides his own steam-powered mill, capable of sawing 18,000 board feet per hour, there was a steam-powered outfit owned by Brouse &Co. Logging was underway at Hole River, English River and Bad Throat River. At Hole River, A.Woods was setting up his mill, while Drake & Co. and A.Wells had portable mills on Black Island and Little Grindstone Point. Captain Robinson's mill was at Moose Creek, and Brown and Rutherford were in Fisher Bay. Other mills were at Winnipeg River, Washow Bay and Fisher River.[46]

FINNSON SAWMILL, ICELANDIC RIVER

In 1893, Gestir Oddleifson re-established a sawmill in New Iceland, on the east side of the Icelandic River in Riverton, bringing a sawmill from Gimli. Once more the river was filled with a log boom. Having neglected, through lack of knowledge, to pre-sell the mill's product to the lumber dealers in Selkirk, Oddleifson found no market for the lumber produced in his first year of operation. The lumber was first hauled to Selkirk, and then on to Winnipeg, and the increased costs of doing this ruined him financially.[47] The mill operated for only one season before being sold to Kristjon Finnson and his partners.

Finnson negotiated contracts with Wm.Robinson Co. in Selkirk and he opened a logging camp on Big Island (Hecla) in 1895. The first season, the 14 men employed there cut 200,000 board feet of timber that was boomed on the river.[48] Added to this was a similar amount cut by the settlers. The mill employed ten to twelve men and sawed 10-15,000 feet per day. The finished product was tugged to Selkirk, where it sold for $15 -$18 per thousand board feet. Due to high water levels on Lake Winnipeg, and a building boom in Winnipeg, the mill operation enjoyed five successful seasons, operating both day and night shifts.[49]

A planer was added in 1896. In 1900 the mill had a bad year caused by a break in a huge log boom from Isafold district. The entire winter's accumulation of logs was lost, and the mill's only output was from timber cut privately. In 1901 the mill was relocated to Arnes and in 1904 it was moved to the Hnausa area. In 1908 the sawmill was finally returned to the Icelandic River. Finnson had taken a Winnipeg partner, Edward Moore, and the sawmill, now called Moore's Mill, was active until 1911, when it was sold to Vilhjalmur Sigurgeirson who took it to Hecla.[50] By this time most of the available timber in the region had been depleted and logs had to be hauled greater distances from around the lake, often by tractor trains over the ice in winter, rather than by log booms in the spring.

This mill and others operated at various locations in the Icelandic River region until 1958, [51] primarily producing lumber for the ship building industry in Riverton, and rough lumber used in manufacturing boxes for shipping fish. Fish caught in northern communities along the lake were stacked in rows on toboggan-style sleighs, covered in canvas, and towed to Sandy Bar, near Riverton. Here they were repacked into large crates, loaded onto freight sleighs, which were formed into long trains, winding along the lakeshore south to Selkirk. The box factory in Riverton remained an important component of the fishing industry for many decades. [52]

A portable sawmill in the Fisher Branch area, c. 1935. Source: P.A.M.

Cutting railway ties at a sawmill at Montago Lake, northwest of Fisher Branch, 1941. Source: M.Roche.

A cat train hauling cordwood from the Lake St. George area to the railway at Hodgson, 1938. Source: P.A.M.

SELKIRK MILLS

In the early 1880s, most of Manitoba's timber berths were located on Lake Winnipeg, making Selkirk the centre of the Lake Winnipeg lumber trade. Its natural location at the head of a deep-water navigation gave it command of the Lake Winnipeg area. After 1883, and the building of a C.P.R. line between Selkirk and Winnipeg, shipping lumber to Winnipeg was comparatively easy. Before then, lumber from mills along Lake Winnipeg, and mainly from the mill at Fort Alexander, was shipped through East Selkirk where a spurline connected with Colville Landing on the Red River, which was connected to Winnipeg by a rail line. An 1883 newspaper item reported that Dick and Banning, and Brown and Rutherford, both companies with mills in Winnipeg, were shipping their lumber from Colville Landing.[53]

In 1883, the Northwest Lumbering Company, consisting of Carmen, Moffat and Calder of Winnipeg, and James Walkley, T.A.Burrows and Bradbury of Selkirk, made plans to build a sawmill at Colville Landing, (East Selkirk). Selkirk businessman, James Colcleugh, negotiated with the companies to build mills on the west side of the river, in Selkirk, instead. To accomplish this, he had to obtain property known as the West Slough, at the eastern end of Main Street, from A.G.B.Bannatyne. The completion of the deal made Selkirk the chief lumber port for the entire Northwest.[54] Firms such as S.Jonasson, Fridriksson and Walkley; the Selkirk Lumber Company; Boyd and Crowe; Woods and Company; William Robinson; and James Drake, provided employment for hundreds of local men in bush camps along the lake and in the mills themselves. Boatbuilding became a major industry as well, since a fleet of steamers and tugs was required to transport the rough logs and finished lumber to town. Once or twice a season a huge raft of logs, hundreds of feet long and wide enough that it could support small shacks on its back, and with sails, would float upstream to be dismantled in the slough in Selkirk. The mills would run round the clock to process the timber and ship it in waiting C.P.R. cars. In 1884, the lumber companies produced over 3,000,000 board feet.[55]

By 1886, the Selkirk Lumber Company had become the largest lumber firm operating on Lake Winnipeg. Of a total of 12 million board feet brought to Selkirk that season, Burrows' company had been responsible for one-third. His mill on the West Slough, supplied with logs from Minnesota and Lake Winnipeg, was also the biggest operating in the province at that time.[56]

Due to the relative ease of transporting the logs or lumber from the berth to the market, the forests of Lake Winnipeg were Manitoba's first important lumbering zone, but the timber stands there were scattered and expensive to harvest. Many of the companies operating in the region owned their own barges and schooners, an expensive proposition given that the timber resources were limited. In 1890, when the price of lumber fell, many of these firms ceased operations in the area, leaving the area to smaller operators. A mill at Little Black River, owned by William Robinson, continued to operate until 1927. [57] There was no long-term future for the lumber industry in the Lake Winnipeg area.

3. EASTERN MANITOBA

Lumbering in eastern Manitoba began with the letting of the contracts to build the first transcontinental railway that became the Canadian Pacific Railway (CPR). Since the timber resources of the Lake of the Woods area were being harvested by the 1880s, the activity spread into the region that became eastern Manitoba, but at that time this region was under dispute between Manitoba and Ontario. The building of the Manitoba and South Eastern Railway between St. Boniface and Sprague (later part of Canadian National Railway system) between 1889-1898 created a good transportation route for forest products from both Kenora and eastern Manitoba. The railway, derisively called the "Muskeg Special", made a profit hauling predominately cordwood cargo. Since railways required timbers for ties and trestles, the construction of these two railway lines stimulated the production of lumber products in the region.

A third railway in the region, the Greater Winnipeg Water District Railway, built in 1914 to service the route of the Winnipeg Aqueduct, became the major carrier of cordwood in the post-World War I period. Subsistence farmers in the region earned extra income by cutting the stands of smaller trees. Cordwood camps in the area produced from 7000-10,000 cords annually, all shipped to the railway's yard in St.Boniface. [58] In one nine-month period in 1920, the GWWD shipped 1234 cars of cordwood, 21 cars of boxwood, 67 cars of pulpwood, 47 cars of posts, 42 cars of poles, 14 cars of piles, and 49 cars of tie logs, for a total of 1274 carloads. [59] By 1940, this area had been predominantly stripped of sizeable trees.

After 1950 the reliance of Winnipeg homeowners on non-wood fuels brought a decline in the market for cordwood. Since then, the only market for the small trees of the eastern region of Manitoba has been the pulp and paper mill at Pine Falls.

ROSS MILL, WHITEMOUTH

In 1877, when Joseph Whitehead received Contract 15, to construct a stretch of the CPR mainline between Cross Lake and Kenora, his son-in-law, David Ross accompanied him westward to harvest the timber resources that would be required to complete this contract. Timber would be needed for trestles and ties, and Ross had experience with the lumber industry from his family connections in Eastern Canada. At first Joseph Whitehead operated a sawmill in St. Boniface and shipped the materials he needed for building the railway from Winnipeg where he had brought Manitoba's first railway steam engine, towing it by barge from Minnesota. Mired in financial over-expenditures, Whitehead was forced to give up the contract in 1880.

But Joseph Whitehead and David Ross had decided to stay in Manitoba, even if they lost the railway construction contract. Ross began buying timber rights, his first being 120 sq. miles of tamarack, jack pine and black spruce in the Whitemouth valley.[60] Whitehead took a 61,440-acre timber berth on the Whitemouth River in 1881.[61] His sawmill, either sold to, or operated by, his son-in-law, was moved to Whitemouth in 1880, and established one-half mile east of Whitemouth, north of the railway line, on the banks of the Whitemouth River, down which logs could be floated.[62] In 1883, Whitehead transferred his timber berths to David Ross. [63] In 1891, the Ross mill was described as having a capacity of 25,000 bd. ft. per 12-hour shift. It was run by a 65 h.p. steam engine. [64] The mill generally ran 100 days a year, from March 15 to August 1.

Ross still had his original 120-square mile timber berth in 1901.[65] The forests, with spruce 20-30 inches in diameter, were ideal to supply the needs of railroad construction. [66] In 1901, Ross manufactured 606,600 bd. ft. of lumber at his Whitemouth mill. [67] To access the cutting camps in his timber berth and those of Daniel Sprague, who had cutting camps in the same region, two logging roads were created, one for winter use and the other for summer use. The summer road followed the route of the Whitemouth River, while the winter road approximated present-day PTH#11. Running from Seven Sisters Falls to Sprague, and known locally as Ross Road, the supply road was created between 1900 and 1914. [68]

Ross' sons took over the mill in 1902. After David Ross' death in 1912, Tom Little, who was operating the mill in 1916, likely purchased it. Fred Zink and Karl Huetteman opened another sawmill near the Whitemouth River in 1908.[69] Once the land in the Whitemouth valley was cleared of the big stands of timber, it was taken up as homesteads by incoming settlers [70] and soldiers who settled there under the Soldier Settlement plan. By the 1930s, when most of the large trees had disappeared, pulpwood and cordwood production replaced sawmilling in the region. In 1936, a major source of income for the area was pulpwood shipped to Kenora. In the Whitemouth railway yards pulpwood and cordwood, mostly tamarack, worth $5.00 per cord, and spruce, worth $2.00 per cord, were often piled six feet high, awaiting shipment east or west.[71]

MCARTHUR'S MILL, LAC DU BONNET

The railway arrived in Lac du Bonnet in June 1901, bringing with it the entrepreneurial talents of John Duncan McArthur who established a brickyard and a sawmill on land that developed into the Lac du Bonnet townsite. The CPR connection with Winnipeg made the development of these industries possible and McArthur was able to connect the eastern Manitoba resources directly to his lumberyard in Winnipeg, located on Higgins Ave. near the C.P.R. tracks. In 1902, McArthur opened a logging camp near Old Pinawa and set up his mill on the Winnipeg River just north of the present townsite of Lac du Bonnet. He shipped the lumber, as well as cordwood, to Winnipeg. McArthur closed his sawmill in Lac du Bonnet in 1918, but he continued to search for a more suitable market for the small-sized woods available from eastern Manitoba's forests. He began to pursue the dream of a pulp mill and before his death in 1925, he secured the pulpwood berths and millsite at Pine Falls that were developed into the Manitoba Pulp and Paper Company. After McArthur's death, his nephew, Alex McIntosh used the berths to supply the early pulpwood contracts of the mill. [72]

SPRAGUE LUMBER COMPANY

Daniel Eames Sprague established the Sprague Lumber Company in 1881. Although the majority of the timber for his sawmilling operation came from eastern Manitoba, Sprague did not have his sawmill there. Instead he built his milling and retailing operation in the Point Douglas area of Winnipeg, on Higgins Avenue, near the Red River. [73] His mill had a 75-horsepower steam engine and was capable of producing 25,000 bd. ft. per 12-hour shift.[74] At first, Sprague used the Sprague, Roseau and Red rivers as the transportation route for his logs, but later he made good use of the Manitoba and South Eastern Railway.

Sprague had at least five timber berths in southeastern Manitoba, on the Roseau and Pine rivers, between Lake of the Woods and Whitemouth Lake and on islands in Whitemouth Lake. [75] These were small berths, totaling around 35 square miles. [76] His lumber production varied between 1.5 million and 2.5 million bd. ft. annually in the pre-1914 period. [77] He also added firewood to his production, something he could market easily in Winnipeg. [78]

By 1918, Sprague's sawmill and manufacturing plants in Winnipeg had closed, the victims of hard times.[79] Only the retail lumberyards, selling products from British Columbia mills, remained. The number of retail stores owned by Sprague Lumber had increased, with stores located in various areas around the city. In 1928 Daniel Sprague died and his wife and nephew carried on the business, but changed its focus to a wholesale and brokerage lumber firm.

John Shanski, a former employee of North American Lumber Company, purchased Sprague Lumber, in 1946. Shanski specialized in buying part carloads of lumber products from independent producers in British Columbia. In 1949 he created a retail division called Modern Lumber. In 1960 this division was sold to Monarch Lumber. John Shanski Jr. took over Sprague Distributors, as the wholesale division was called, in 1972.[80] In 1981, the lumber company,

started by Daniel Sprague, celebrated 100 years of operation. It has since been sold to a competitor.

4. RIDING MOUNTAIN

Henry Youle Hind, when he made his exploratory journeys across western Canada in 1857-58, wrote in his journal that:

> The western and southwestern slopes of the Riding and Duck Mountains support heavy forests of white spruce, birch, aspen, and poplar. The trees are of a large size and often exceed one and a half and two feet in diameter, with an available length of 30 to 50 feet. The wooded areas over which timber consisting of four kinds of trees enumerated is found, on the Riding and Duck Mountains, has a length of one hundred and twenty miles, with a breadth exceeding thirty miles. The affluents of the Assiniboine River will serve during spring freshets to bear these valuable forest products to areas which will probably attract settlement, and where they will be most required. [81]

His predictions proved true. Although much of the lumber cut from the mountains was used to build settlements at the foot of the hills, it wasn't long before enterprisers sought to explore the forests' commercial potential. As early as 1880 the Hudson's Bay Company brought machinery to Riding Mountain House to establish a gristmill and a sawmill. The post was located on the east bank of the Little Saskatchewan (Minnedosa) River, near the north boundary of present-day Indian Reserve #61, on the south slopes of Riding Mountain. The sawmill machinery proved inadequate and the company was unwilling to spend the $1000 it was estimated it would cost to install a better second-hand sawmill, because " there is not enough timber in the Riding Mountain to last any length of time." [82]That summer the mill did saw some settlers' logs from their own land but because of a log jam on the river, the HBC logs were not sawn until June, and even then the sawmill was inadequate and had "cost more than it should have, considering it is old fashioned and has none of the improvements of the present day, and if not completed will be a failure."[83] The mill does not appear to have been a success, but the effort put into establishing it is an indication that the HBC was well aware of the potential of the province's forest resources, and did have designs on entering that market. The predictions of HBC staff, that Riding Mountain's forests were inadequate, proved inaccurate; local sawmills manufactured lumber from those forests for another 100 years.

Since the rivers from Riding Mountain were relatively small, the creation of railways running to the south, east and north of Riding Mountain's forests was instrumental in bringing the logs from the hills to other than local markets. These railways were not built until after 1895, by which time the Riding Mountain area had become a Forest Reserve. Thereafter, lumbering was restricted. Local people were still allowed cutting rights, and a ranger was responsible for overseeing the operation of the 13 portable sawmills in the reserve at that time. Many more portable mills existed outside the boundaries of the Forest Reserve, in communities such as Rackham, Sandy Lake, Eden, Birnie and Erickson. There were also two stationary mills operating within the Reserve boundaries, one owned by Alex Kippen and the other by Bill Peden. [84]

Many communities located in the foothills of Riding Mountain depended on logging in the area for employment and building products. Most of these operations were small and carried out with portable sawmills that were moved right to the timber-cutting area. The stands of spruce, birch, oak, ash, jackpine and poplar along the eastern and western slopes of the mountain were put to good use. In the Erickson area, where many of the Swedish settlers had previous experience in the lumber industry, it was common to clear one's land of the timber by operating a sawmill. Many

local sawmills were operated in the south Riding Mountain area, especially during the 1930s when logging was one of the few ways to earn money. Permits for cutting timber in the Riding Mountain Forest Reserve, and later Riding Mountain National Park, were given to small operators and local settlers until 1946. Farmers combined their cutting permits with a small portable mill owned by a neighbour. While most of these mills changed hands often and few operated after the late 1950s, the Paulsen mill in the Erickson area was still operating in the 1980s. [85]

Besides timber for lumber, much cordwood was cut both for local use and to sell in towns and cities where people needed wood for their heating systems. Shingle mills were also popular in the Riding Mountain area. A shingle mill originally started by Ben Baxter in the Crawford Park area in the early 1920s was sold to Tom Buchanan who ran it until 1931, selling it to Alex Kippen, who owned the mill until 1941.[86]

In the 1920s an era of producing railway ties increased logging on the eastern slopes of the mountain. A Winnipeg company with a contract to supply ties set up a camp with 150 men near the Rolling River and cut 28,000 railway ties, eight inches square and eight feet long, from jackpine, each winter. These were hauled by sleigh to the railway at Norgate. The removal of the forests from the slopes of the mountains eventually created erosion problems in the surrounding municipalities.

A sawmill in the Riding Mountains, west of Kelwood, c. 1910. Source: P.A.M.

MCARTHUR'S MILL, BIRTLE

Although the Riding Mountain area was heavily timbered, the logs were not easily transported to market because the rivers in the area were small and the only early transportation route into the area was a trail from Strathclair along the Little Saskatchewan River and Lake Audy. J.D.McArthur and a partner named Dutton were the first to cut timber in the region that became Riding Mountain National Park. They set up a cutting camp near Gunn Lake and a sawmill near the Birdtail River, probably around 1879-80. A dam was created on the river but the mill only lasted a few years. Thereafter the logs were floated down the Birdtail to Birtle, a distance of 150 miles, to be milled. [87]

When the logs reached Birtle booms were fastened to hold the logs for sorting. Mill machinery had been brought in via the Assiniboine River. Sawing began at once, mainly for flooring, sheeting and shingles for area buildings. In 1882, three million board feet were sawn and this was all used to build new buildings in the developing region. The mill continued to operate for fifteen years. [88] At one point in the early years of operating the Birtle mill, McArthur nearly went bankrupt when, due to weather conditions, he had trouble fulfilling a contract for railroad ties. [89]

ARMITAGE MILL, MINNEDOSA

Another sawmill operating in this same time frame was at Minnedosa. J.S. Armitage and his three brothers arrived at Tanner's Crossing in 1879 and purchased the land to create a townsite that grew into Minnedosa. In 1880 Armitage built a sawmill along the Little Saskatchewan (Minnedosa) River, supplying it with logs from a timber berth which covered 40,960 acres in the Riding Mountain foothills, near the Little Saskatchewan River. The timber was floated down the Rolling and Little Saskatchewan rivers. [90] To do this, lumbermen placed a temporary dam on Lake Audy that provided a sufficient supply of water each spring to send the logs down the river. [91] Many of the logs sent down the river continued on down the Little Saskatchewan to the Assiniboine River, and hence to a mill at Rapid City and another at Brandon. [92] The last log drive to Minnedosa occurred in 1902. [93] In 1910 the Little Saskatchewan was dammed at Minnedosa for electric power, making use of it for log drives impossible.

MILLWOOD MILL, MILLWOOD

Harvesting the trees from the slopes of the Riding and Duck mountains, cousins Messrs. Mitchell and Bucknell, used the Shell and Assiniboine rivers as a conduit to ship logs to their mill at Shellmouth, north of Russell. Their first timber berth, granted in 1885, was 100 square miles along Boggy Creek, which drained into the Shell River and hence the Assiniboine. In 1886 the men moved their sawmill and planing mill southward to where developing communities had a real need for their services. On the east side of the Assiniboine, south of Russell, they operated a sawmill, planing mill and a flourmill until 1910. The site became known appropriately as Millwood. Logs were purchased each spring from the main log drive, headed down river to the mills in Brandon. The logs processed in the Millwood mill were used to build most of the structures in the Russell district. In 1896, frustrated in their efforts to have a spur line built from their mill to the main railway, the cousins moved their big sawmill to Selkirk and set up a smaller one in its place. In 1900, the slopes of the Riding Mountains were incorporated into the Riding Mountain Forest Reserve, drying up the timber supply and causing the commercial mills operating in this region to cease operations. [94] Small local portable mills continued to operate on a small-scale basis.

SHAW BROTHERS' MILL

The Shaw brothers, James and Thomas, arrived in the Dauphin valley in 1889. Their experience as flour millers and sawmillers in Ontario provided them with the means to make a good living in the newly opened Dauphin country. They established both a flourmill and a sawmill on the Valley River. In the first years of operation, logs for the sawmill were floated down the river from the Duck Mountains. The lack of a dam on the river, however, often caused the logs to go through the boom and be carried into Lake Dauphin. After two years of losing much of their winter cut, the Shaw brothers moved their mill into the Riding Mountains, and in 1899 relocated to Edwards Creek, at the base of the mountains. [95]

With timber berths in the Riding Mountains the brothers milled one to two million board feet per year. [96] In 1909, from timber berths in Saskatchewan, in the Duck Mountains, they manufactured almost 11,000,000 bd. ft .[97] The company opened a retail lumber store in Dauphin, just east of Main Street on First Avenue Southeast. This business was later sold to T.A.Burrows, and then Monarch Lumber Company. The Shaws moved their sawmilling operations into Saskatchewan around 1914. [98]

KIPPEN MILL

The Alex Kippen mill was first set up as a portable mill in 1926, during the era of railway tie production, about a mile from Clear Lake along the Thompson Trail, (now PTH#10) leading to Dauphin. [99] By 1928 Kippen had enlarged his operation to a stationary mill, employing 60-75 people each season. It was located near the Native fishing grounds on the west shore of Clear Lake. Kippen's sawing was often for farmers, many from as far away as Hamiota, who had a permit to cut logs in the Park. They either worked for Kippen to cover the cost of sawing their lumber, or they gave Kippen a share of the lumber he milled for them. Many of Kippen's workers brought their families to live with them in shanties during the winter months.

The following, written by Mike Nechwediuk of Sandy Lake, describes how Kippen ran his sawmill to service local clients:

> The winter of 1929 my Dad and I went with a team of horses and sleighs to Alex Kippen's lumber mill in the Riding Mountain National Park. Dad purchased a lumber permit for three thousand board feet, at the office of the mill.
>
> Mr. Kippen provided stables for the horses and a large farmers' camp to live in, with bunk beds, wood heater, cook stove, tables and benches. A man took us to the bush to show us where to cut the logs. Dave Binkley, who was the Game Warden and Forest Ranger, came out and marked the spruce trees at the height they were to be cut from the ground. Kippen's men cut the sleigh trails.
>
> We cut the same number of logs for Kippen, for sawing our logs. It took a lot of work, as all the branches had to be burned, the logs skidded and hauled to the mill site. We used a five-foot cross cut saw to fell the trees and saw into log lengths.
>
> Each weekend we drove home to stock up on more hay and oats for the horses, and more food for ourselves, to last another week or two. When the logs were sawn we hauled the lumber home.
>
> In the fall of 1930 I went to skid logs at Ira DeWitt's sawmill for 50 cents a day – worked one week and earned $3.00. Then my brothers and I went to Alex Kippen's to cut logs for lumber for ourselves. [100]

Kippen's mill provided all the lumber to build the relief camps that were erected in the Park in 1931, as well as lumber for many of the cottages that were build around the lake. [101] In 1936, Kippen relocated his mill on Edwards Creek, on the northern edge of the Park. [102]

PEDEN MILL

William Peden and his family came from Huron County, Ontario where they had previously been involved in the lumbering industry. Originally they operated a sawmill in the Shellmouth area along the Shell River, but they moved to the Riding Mountain area around 1887. They purchased a timber berth on Gunn Lake from J.D.McArthur and in 1895 began operations on Peden Lake, just inside the Park boundary, northeast of Marco. As the timber diminished, the mill was moved further into the wooded area. In 1910, the mill was relocated to the northwestern shores of Whitewater Lake, west of Elphinstone. Since moving a stationary mill was tantamount to moving a small town, the Peden Mill remained there until 1938, when the Pedens sold the mill and it was moved to northern Ontario. Later, John and Matt Glushka bought the Peden planer and returned it to the Rossburn area where they had a sawmill operation from 1936-1953. [103] Two other local men, Maron and Tony Slon, took over the Peden lumber campsites on Gunn Lake and Peden Lake.

The Peden operation was a family affair, run by William Peden Sr., William A.Peden, and other brothers, Jack and Bob Peden. The third generation of Pedens, Clarke and W.J. Peden, also worked at the mill. The Pedens took their families with them into the bush camps, building shanties near the mill. One of the third generations of Peden children was born in a shanty at the mill site. The saw and planing mills were only operated during the winter months when logs were hauled across frozen lakes by sleigh from cutting sites seven to eight miles away. The Whitewater mill site was originally a cutting camp. The Pedens cut timber from their own berths but also sawed lumber from timber cut by local farmers who obtained cutting permits from the Forestry Department.

During the Second World War, a prisoner-of-war camp was set up near the former Peden site on Whitewater Lake. From 1943-45 German prisoners cut thousands of cords of firewood, which were trucked to Brandon and elsewhere. [104]

RAT LAKE SAWMILL

Bert Walker had a sawmill in McFayden Valley in 1915. The valley had originally been the site of David McFayden's lumber mill. In 1881, "McFadden" had been granted a timber berth covering 14,000 on the Little Saskatchewan River.[105] He purchased a mill from W.S. Ritchie in Winnipeg and moved it to this

A timber cutting camp in the Riding Mountains, 1905. Source: P.A.M.

timber berth. [106] In 1925, Walker, with Howard McCracken, began operating a sawmill in the Riding Mountain Forest Reserve. Their mill, located at Rat Lake, employed about 25 men, and

cut mostly jack pine for railway ties. The ties were sawn into 8-foot lengths in the Reserve and then hauled by sled to Riding Mountain to be peeled and loaded on railway cars. In 1935, 16,000 ties were hauled to the railway. Since a sleigh load consisted of 40-50 ties, this meant that as many as 14 teams were needed to make one trip per day each with the ties. This resulted in employment for a lot of people from the area. [107]

The smaller logs were cut into lumber that was sold to local people for $12.00 per thousand feet. One winter so many logs were cut that the mill had to operate on a 24-hour basis with two shifts, in order to remove the logs from the ice before spring break-up. This sawmill camp served a social purpose as well. Every Saturday evening the cookhouse was turned into a dance hall with guests coming by sleigh from Kelwood, Riding Mountain, Eden, Bernie, Springhill, Polonia, Mountain Road, Empire, and Bethany.

In 1938, Walker moved the sawmill out of the Reserve to the banks of McClung Creek. Here, he continued operations for several years before selling the mill to Norman Tyler who moved it to the Duck Mountain Forest Reserve to saw lumber on contract for the Continental Lumber Company. [108]

5. BRANDON

Brandon, like Selkirk, was connected to a forested hinterland by a major river, in this case the Assiniboine. It was also situated along the main C.P.R. route and for a few years was the service centre for the frontier developing to the west, south and north. It was the natural site for a lumber mill and the first business established there, in 1881,was a retail lumber company owned by Charles Whitehead and a partner named Myer. By the end of 1882, eight lumber firms had established themselves in Brandon, many of them retail merchants, and among them Brandon Planing Mills and Brandon Saw Mills.[109] The latter, owned by J.N. Shields and Company was the first lumbering company to log its own timber berths. These were located northwest of Brandon, along the Shell River, a tributary of the Assiniboine River. As timber berths were taken out in this vicinity, the impact on Brandon's development was immense. One firm that dominated the Brandon lumber industry for over a decade was the Hanbury Manufacturing Company.

HANBURY LUMBER MILL

For almost fifteen years, from 1900-1914, the Hanbury Manufacturing Company was the most important industry in Brandon, employing 150 men there in logging, lumbering and manufacturing furniture, sashes and doors. Beginning in 1899, J.A.Christie purchased logs from the Asessippi Milling Company, driving them down river to Brandon. His successor, John Hanbury, soon owned the largest of the early logging operations in northwestern Manitoba. Originally known as Hanbury and McNea, the new name was taken in 1909, when John and Wilfred Hanbury and four other financiers reorganized the company. The firm's milling and manufacturing interests were dependent upon timber taken from northern forests and moved, raft-like, through hundreds of miles of river by drivers. Several million board feet were annually transported to Brandon from Duck Mountain.

Originally Hanbury cut on Riding Mountain, near Lake Audy, driving the logs down the Little Saskatchewan River past Minnedosa, and Rapid City to "the turn near the old dam where it flows into the Assiniboine ten miles west of Brandon." [110] In 1901, Hanburys cut 7,982,147 board feet of lumber, making them the largest operators in Manitoba. [111] In 1902 John Hanbury acquired the Duck Mountain timber berths first assigned to Cameron Bartlett in 1898, and held them until 1915. The five berths varied in size from eleven to fifty square miles (17-80 sq. km.) In the mountains, Hanbury's manager, H.J.Stevenson, began in September preparing for each season, hiring 150 men, many locals, and stocking the bush camps. The end of March brought the end of cutting and the beginning of the log drive, which usually reached Brandon around mid-June. In 1910, the Hanbury drive, consisting of 5,000,000 board feet and controlled by 125 drivers, was probably the largest timber drive on the Assiniboine River. [112]

From 1901-1904, Hanburys was the largest lumber producer in Manitoba. [113] In the fall of 1907, the Hanbury mill was closed temporarily due to an overabundance of stock. The company was reorganized, reducing the number of employees and causing a great deal of economic hardship in the Shell River area where local people had always depended on the income from the Hanbury drives. In 1910, John Hanbury acquired lumber interests in British Columbia and he left Brandon. The firm limped along under his son's management until World War I brought a shortage of manpower. The Hanbury Manufacturing Company's warehouse and contents on Pacific Avenue were sold in 1916. The final real estate holdings and box factory owned by the company were auctioned in 1927.

6. LAKE WINNIPEGOSIS AND LAKE MANITOBA

As early as 1881 timber berths were taken out in this region. The resources, however, were limited in size and were accessible only by water, which, as in the case of Lake Winnipeg timber resources, made them expensive to harvest. The only big player in the region was Peter McArthur. Smaller independent portable sawmills operated in the area into the 1960s, producing rough lumber suitable for local uses.

MCARTHUR'S MILL, MCARTHUR'S LANDING

Peter McArthur, an experienced carpenter, arrived in Manitoba in 1869 and worked on the Dawson Road before the outbreak of the Red River Resistance, when he was imprisoned by Louis Riel. In 1870, he settled near the Brokenhead River and began logging operations. In 1874, his lumber mill was located at Fort Alexander. [114] From his timber stand he supplied Fort Garry with a flagstaff, and he built his first boat, the S.S.Prince Rupert. In 1881, he became involved in the formation of the Northwest Navigation Company, along with the Hudson's Bay Company. The company built the S.S.Marquette and the S.S.Northwest. Throughout his career, McArthur's logging operations were tied to the production of boats, which played a role in another industry in which he was involved, fishing. [115]

The timber in the Brokenhead region soon proved inadequate for McArthur's needs and he turned his attention to logging near the Ebb and Flow Indian Reserve on the west side of Lake Manitoba, another berth at Crane River, south of Winnipegosis, and another near Fairford. In early 1881, he and his partners, one of who was Joseph Whitehead who had earlier received a timber berth in the Whitemouth River, received a timber berth covering 477,760 acres on Lake Winnipegosis and the Waterhen River. [116] Logs from these areas could all be floated on Lake Manitoba to Totogan, near the mouth of the Whitemud River at Lake Manitoba. It is known that a lumber mill existed at Totogan in 1880, because the HBC planned to build inland boats at Manitoba House in the winter of 1880-81, with lumber "procured at the lumber mill at Totogan." [117]

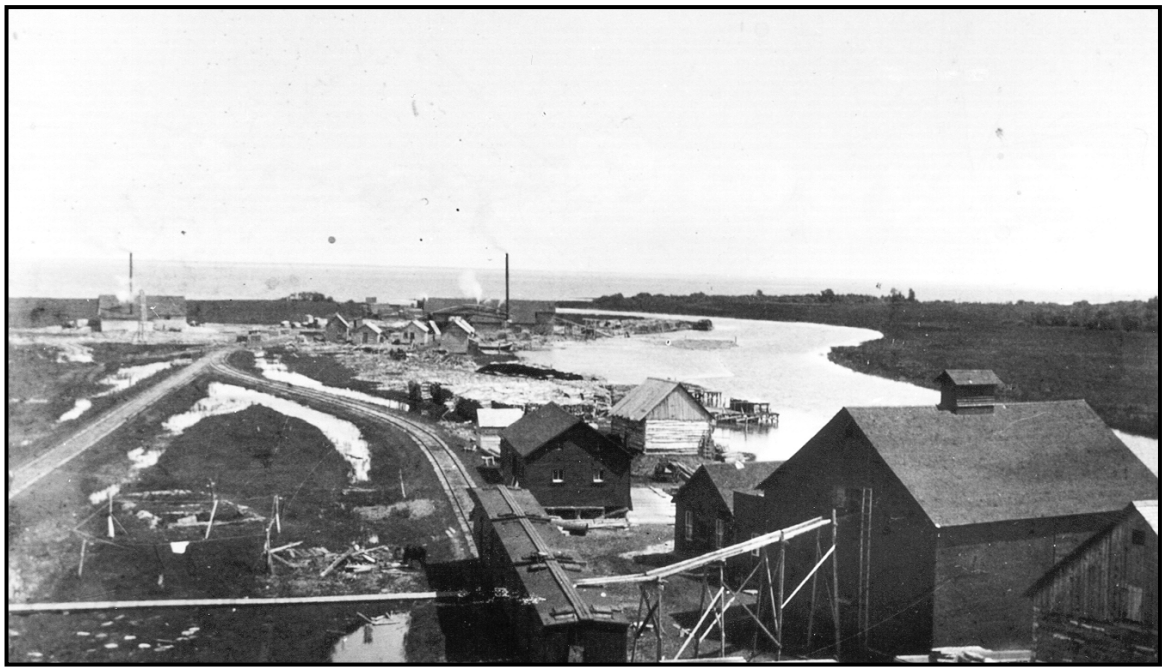
Totogan was first used by William Sifton as a port from which to ship railways ties, via the Totogan Trail. The proposed railway never materialized at Totogan, however, and then flooding made the site unacceptable. In 1890, Peter McArthur moved the landing site farther down the Whitemud River, creating McArthur's Landing on the west side of the Whitemud on SW6-14-8W and SE1-14-9W. Here he set up his new planing mill and his freezer, for the fish he bought and sold to Booth Fisheries. A spurline was built from the Manitoba and North Western Railway at Westbourne to McArthur's Landing. A considerable amount of timber passed through this inland port, as witnessed by a newspaper report of 1891, which showed a photo of a "raft of lumber and railway ties, ….900 feet long. The 500,000 feet of lumber and 25,000 railroad ties were cut at Fairford and sailed through the Narrows to the Landing." [118]

In 1897, McArthur's planer mill burned down at the Landing. By then McArthur had lost enough timber to gales on Lake Manitoba to help him decide not to rebuild on the Whitemud, but to relocate his mill to Winnipegosis. After commuting to Winnipegosis from 1897-1903, he moved his family to the site of the new mill. Peter McArthur was the major player in the area but many small portable mills sawed lumber in the area into the 1950s.

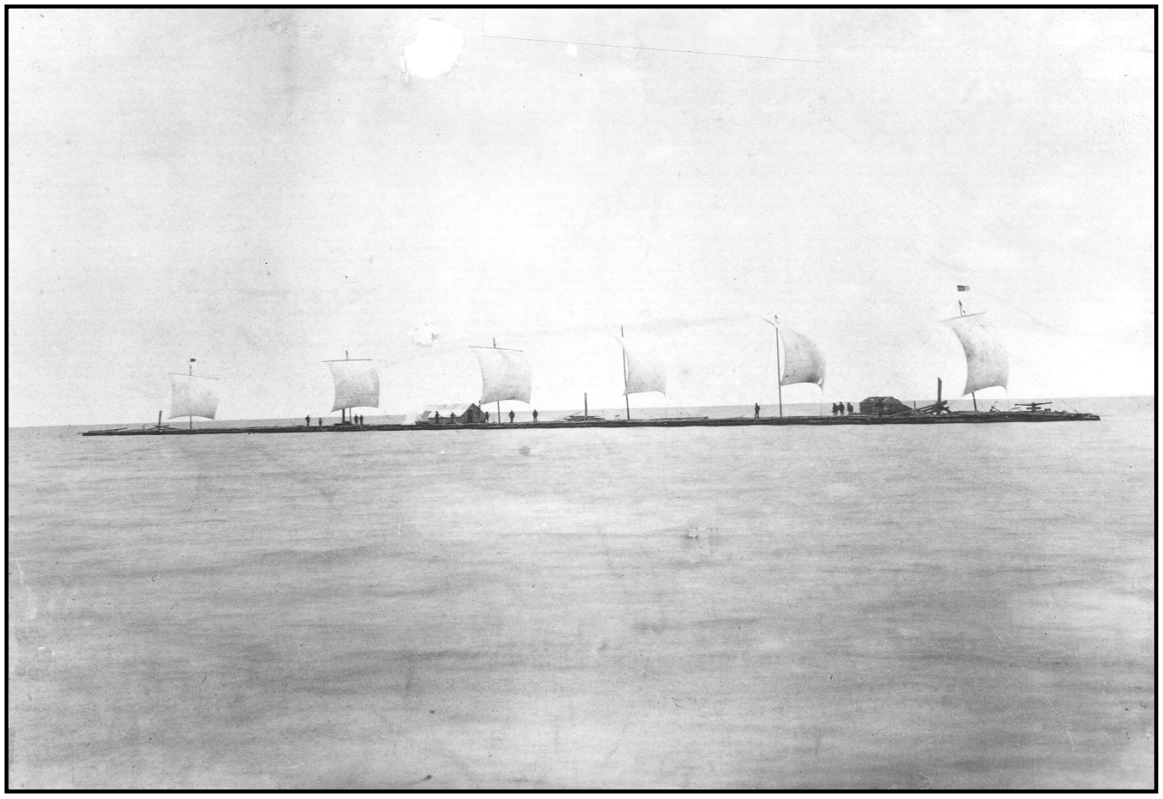
STANDARD LUMBER COMPANY, WINNIPEGOSIS

Peter McArthur re-established his mill on Lake Winnipegosis in 1898, under the name Standard Lumber Company, which operated there for thirty years. [119] The mill site along the Little Muddy River was marshy and had to be built up by fill from sawmill trimmings. There was a dock at which two steamboats owned by the company were docked. The mill site consisted of office, store, lath mill, lumber sheds, barn, icehouse, machine shop, blacksmith shop, bunkhouses, the sawmill and the planing mill, as well as a box factory. A ready market existed along Lake Winnipegosis for boxes to pack fish in, and MacArthur's box mill employed thirty men making fish

boxes, egg crates and butter boxes. In fact, the company appears to have done a better business in boxes than in lumber, as witnessed by a diary entry from John McArthur in 1910: “We are making fish boxes at the rate of 1200 per day – over 30 men employed - load a car of lumber now and then.” [120]



Peter McArthur's sawmill and planing mill in Winnipegosis, 1903. Source: P.A.M.



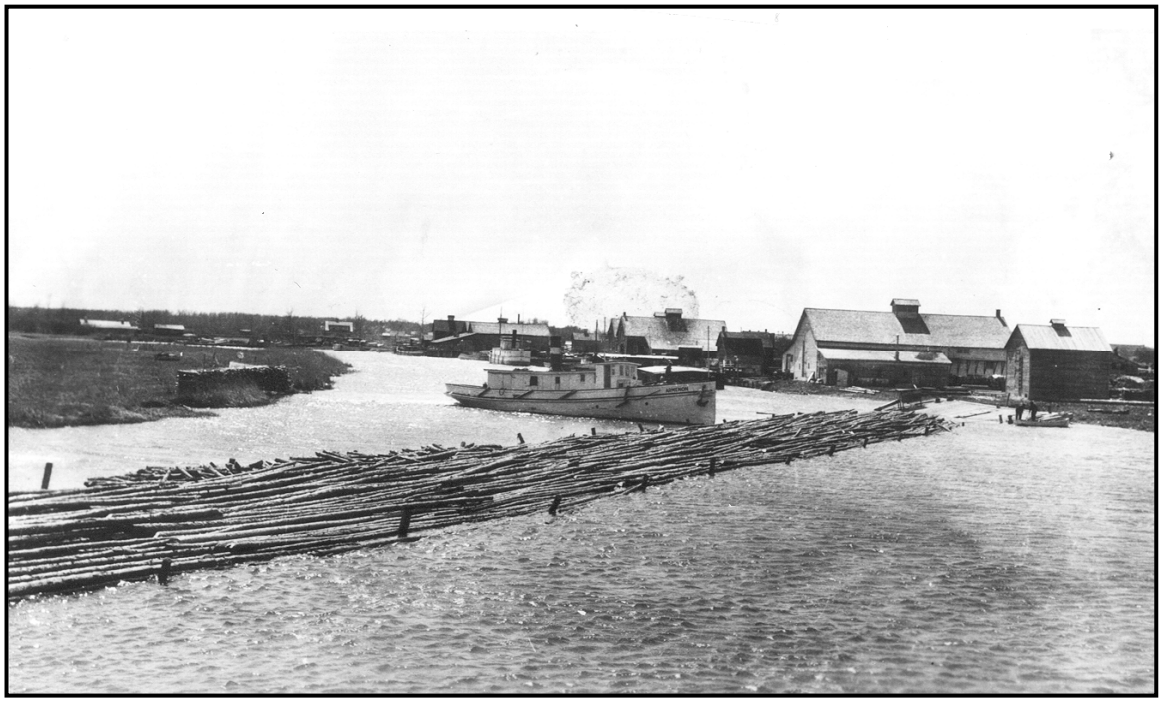
A lumber raft on Lake Manitoba, probably belonging to Peter McArthur, and headed to Totogan, 1891.

Source: P.A.M.

The mill also specialized in spruce flooring and siding, which sold in 1898 for $27.00 per thousand feet, versus 2x4s, which sold for $24.00 per thousand feet. [121]

Many local people, who later operated small private sawmills in the Lake Winnipegosis area, began as employees at Standard Lumber. At different times there were sawmills operating at Big Island, Channel Island, Graves Point, Pelican Bay, Long Point and Red Deer Point. Peter McArthur, himself, had a mill at Graves Point, after 1916. This mill had a capacity of 22,000 board feet and an 80 h.p. steam-driven engine. [122]

Jim Fleming, who moved his sawmill to various sites along Lake Winnipegosis between 1915 and 1950, operated one mill on Red Deer Point. He produced railroad ties and boxwood. John Stefanson also operated a mill on Red Deer Point and various other sites, and eventually owned a box mill in Winnipegosis as well. This mill was sold to George Rodrigue in 1946. The mill turned out 50-60 thousand fish boxes per season, most of which were sold to Booth Fisheries and B.C. Packers. There was a definite economic link between the fishing and lumbering industries in the region. Lumbering continued around Lake Winnipegosis until 1981, when the last box mill, Winnipegosis Box and Mill Works, closed. [123]



A tug towing a raft of timber from Lake Winnipegosis to the mill in Winnipegosis, c. 1905. Source: P.A.M.

7. THE DUCK MOUNTAIN AND PORCUPINE FOREST RESERVE

The first timber berth on Duck Mountain was given in 1882 but it is doubtful if the owner did any logging on the berth since speculators, who anticipated railroad construction, acquired many timber berths. C.A.Boulton, who went on to found the town of Russell, to lead Boulton's Scouts in the North West Rebellion, and to became a Canadian Senator, received a timber berth in 1883. [124] The Shell River Colonization Company, which was responsible for the settlement at Asessippi on the Assiniboine River, was given a timber berth the same year but since it was on the east side of Duck Mountain it was of little value to the settlers, and was later surrendered. [125] Prior to 1883, settlers from Asessippi established a portable sawmill. In 1884, Rufus Stephenson, an inspector for the Department of Interior, reported that "a considerable quantity of lumber has been sawn, sufficient for the settlers, in the neighbourhood, which is sold at reasonable prices." [126] In 1885, the Asessippi Milling and Manufacturing Company built a dam on the Assiniboine and erected a flourmill on the west side of the river and a saw and shingle mill on the east side. Logs were floated down the Assiniboine from Duck Mountain and made into lumber for the local market. In 1890, the Asessippi Milling and Manufacturing Company was granted a timber license and carried out operations until 1899. The Company manufactured lumber and laths and sold its remaining logs to J.A.Christie, and his successor, John Hanbury, of Brandon. The mill only operated for a few years before the railway bypassed Asessippi and the businesses in the village reestablished themselves elsewhere.

BURROWS LUMBER COMPANY

T.A.Burrows is probably the most well known name in the history of the lumber industry in Manitoba. Over time he operated sawmills in most forested areas of the province, beginning with the purchase of a sawmill at Fort Alexander in 1878. He subsequently conducted logging operations in the Lake Winnipeg, Riding Mountain, Duck Mountain and Porcupine Forest areas. His involvement in the lumber trade encompassed all facets, including retailing. In 1890 he was one of the founding members of the Western Retail Lumbermen's Association, an organization that still represents the needs of lumber retailers. In 1929, all the Burrows lumberyards were sold to Beaver Lumber Company. [127]

Burrows also had a successful political career, first as MLA for the constituency of Dauphin in 1892, and then as MP for the area from 1904-1908. From 1926 until his death in 1929, he served as Lieutenant-Governor of Manitoba. He also was the brother-in-law of powerful western Liberal politician, Clifford Sifton, Minister of the Interior from 1890-1911.Undoubtedly Burrows was able to use his political connections to gain access to, or knowledge of, the best timber resources in Manitoba. His career is representative of the early timber barons of Western Canada.

During the 1907-08 parliamentary session, Clifford Sifton came under attack for allegedly showing favouritism in the awarding of timber berths to his brother-in-law, T.A.Burrows. The opposition contended that between 1902 and 1905 the number of Burrows' timber berths grew from three to 19, including nos. 986 and 1047, which formed the backbone of his successful milling operations in Grandview and Bowsman. In all, Burrows had gained control of 1,586 square miles of select timber. [128] The cost of these berths varied, but all were for twenty-year leases. A berth covering 50 square miles cost him $4600 in 1902, but some smaller ones cost as little as $700. [129] Enough irregularities in the tendering process were brought to light to lead to an investigation by the Public Accounts Committee of the House of Commons in 1907. Although no formal charges resulted, the scandal led to Burrows' defeat in the next election. "Imbued with the nineteenth century capitalist's faith in unhindered expansion and exploitation of resources, he was undoubtedly an able entrepreneur."[130]

BURROWS MILL, GARLAND

In the spring of 1890, with lumber prices slumping, Burrows temporarily abandoned his career as a sawmill operator when he was hired by the provincial government to supervise road

construction near Dauphin. He supervised the creation of the Burrows Trail on the east side of Riding Mountain along the Arden Ridge between Neepawa and Dauphin, and then created the Russell Trail on the western side of the Riding and Duck mountains between Russell and Dauphin. This work gave him an opportunity to scout the timber resources of these regions. In 1896, Burrows became land commissioner for the Canadian Northern Railway. This gave him an inside track with the Canadian Northern who would be requiring railway ties to build a line from Dauphin to Cowan. It also gave him a view of the eastern slopes of Duck Mountain. He also traveled to the Swan River Valley on behalf of the federal government, a trip that would have increased his already vast knowledge of the timber stands in the Duck and Porcupine Mountains.

Burrows founded the Dauphin Lumber Company in 1897, assuming cutting operations on Timber Berth 575 in Riding Mountain, assigned to him by a previous lessee. He opened a retail lumberyard in Dauphin the following year. By 1898 the railroad had reached Garland and in 1899, Burrows established a sawmill on the Garland River at 12-31-22, Garland townsite. Lumber, laths, railway ties, and shingles were sawn at this mill, and the ties were likely used in railway construction as the line was continued through to Cowan and Swan River. In 1904, the plant manufactured 4,358,262 board feet of lumber, along with 41,156 laths.[131] Burrows expanded his operations to include a second mill further north at Pine River. In 1903, Burrows greatly expanded the number of his timber berths, from six to 15, some in the name of the Imperial Pulp Company, one of his companies. These holdings stretched from the southern slopes of Duck Mountain, to the North Saskatchewan River.[132] With the best timber resources of Duck Mountain under his control, he built the province's largest sawmill at Grandview.

Meanwhile, the operation at Garland continued. The camp, along the Garland River, consisted of a sawmill, a planing mill, bunkhouses, a cookhouse, warehouses, a blacksmith's shop and stables, an office and nearby, a small store and post office operated by the company. About five million board feet of lumber were sawn annually. Approximately 40,000 board feet were sawn daily and 12 to 15 carloads were shipped by rail each week. [133] The carriage on the sawmill was steam driven with water from the Garland River where a wooden dam had been built. Each year the mill operated from early winter to late summer. Then it was shut down and totally serviced in preparation for the next season. Besides cutting timber on its own timber berths, the company also purchased logs and sawn lumber from sub-contractors who had operations set up closer to the mountain. These included Northern Lumber Company, H.N. Chute, and Harpers.

In 1918, Burrows moved his operations from the Duck Mountain to the Porcupine Forest Reserve, building a new sawmill at Bowsman.

BURROWS MILL, GRANDVIEW

Grandview was the-end-of-track for the Dauphin railway in 1900. In 1902, Burrows obtained timber berth 986, covering 50 square miles of timber in one block on Duck Mountain.

> The Burrows limit included much of the southern portion of the hills from the eastern boundary of the Reserve to at least the Valley River to the west. The lines of the limit were surveyed and cut out, although as time went on the line was difficult to follow. The lines wound around so as to exclude areas that did not contain fairly heavy stands of spruce, thus avoiding the payment of acreage dues on unprofitable acreage. [134]

Logging operations began on this berth in 1903. Even before his new mill in Grandview had been completed, Burrows hired drivers to take the logs down the Valley River. Grandview was an ideal location for Burrows' new mill. The Valley River brought the logs in and the new railway took the finished lumber to market. The mill, located just north of Grandview on the Valley River, was the largest lumber mill in Manitoba, giving Grandview a huge economic boost. Logs were brought from timber berths on both the Riding and Duck mountains.

The original mill cut 80,000 board feet per ten-hour day. In the first year of operation the mill turned out 7,000,000 feet of lumber. By this time the combined seasonal output of Burrows' lumbering activities at Pine River, Fish Creek, Garland and Grandview had reached 12,000,000 feet annually, making Burrows' operation the largest lumber producer in Manitoba. [135]

To service a timber berth that extended west to Silver Creek, an additional sawmill was established about 15 miles north of Grandview on Duck Mountain. Referred to as the Mountain mill, it operated only during

View of the dam on the Valley River and the Burrows mill in Grandview, c. 1910. Source: The Grandview Museum.

the winter months, sawing logs hauled directly to the mill from timber berth 986. The mill was a small frame building powered by a 100 horse power steam engine. The output of the Mountain mill was approximately 80,000 b.f. Horse teams hauled the lumber to Grandview for planing. It was reported that 13 teams were needed to haul the lumber regularly. Later on, logs were hauled by steam tractor over ice roads. In spring the cut was floated down the Valley River to Grandview. [136] Life at this sawmill site was not like camp life, because most men had their families living with them in houses.

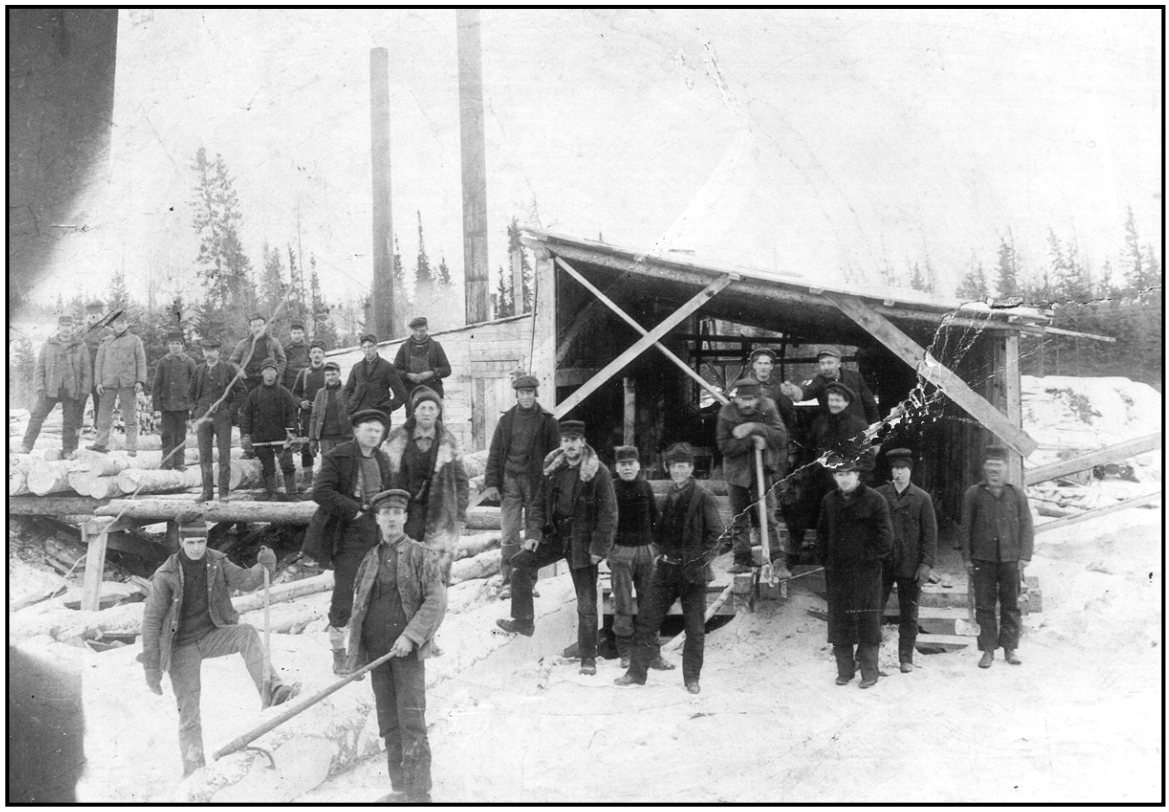
> This mill took care of the cut on the eastern side of the Burrows holdings…. two outlying camps accommodating the required men. The Hart camp …north of the mill is now known as Hart Meadows. To the west there was the Whalen camp. Along a creek running north between these two camps was the Rawson cut where operations evidently were carried on from the mill site itself. [137]

In 1915, a fire in the area, which had never been properly cleared of slash material, destroyed the buildings at the two cutting camps as well as the Mountain mill itself. [138] To salvage some of the timber damaged by the 1915 fire, two additional cutting camps were established, one along Silver Creek and another south of Pearl Lake. A private mill was temporarily set up in the area to process this timber, and the lumber was hauled by steam haulers to Grandview. [139]

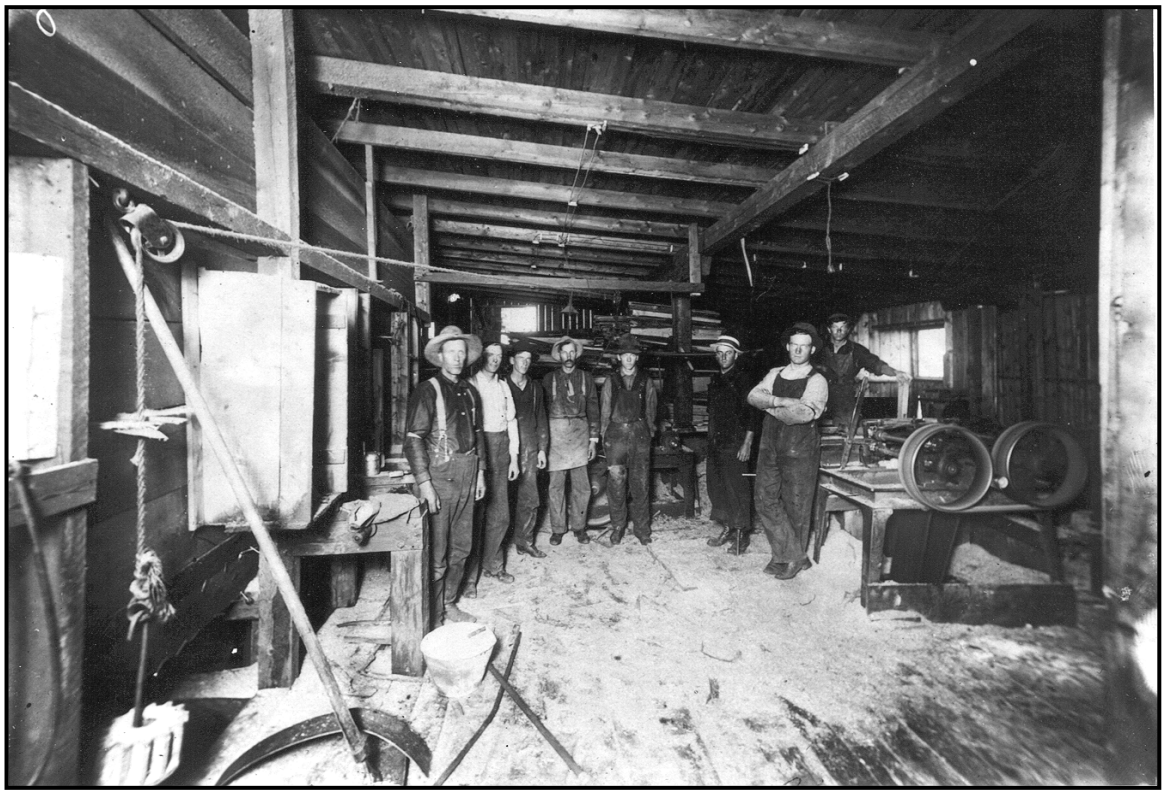
Only mills that had a facility that could store the logs in a pool of unfrozen water, called a hot pond, operated during the winter. Traditionally sawing began in spring and continued until the

winter cut was totally processed. The Grandview sawmill did not operate during the winter months because there was no hot pond in which to store the logs to keep them from deteriorating. The mill generally operated from June until the end of October when the year's supply of logs was spent.

The mill site, located on the west side of Grandview where the sports grounds are presently located, contained the sawmill, planing mill, lath mill, boiler rooms, a sorting table, blacksmith shops, stables, bunkhouses, mess halls, storage buildings, and a house for Burrows. The planing mill was located just south of the present Watson Crossley Museum. The sawmill was a wooden frame building, two storeys high, covering approximately 100 square feet. A rectangular one-storey sorting room adjoined it. The mill was powered by a 250-horse power engine which ran the two band saws and carriages with gunshot feed



Employees at the Burrows mill in Grandview, c.1910. Source: P.A.M.



Inside Burrows mill at Grandview, c. 1910. This is probably the planer. Source: P.A.M.

that sawed very quickly. The double edger was in the middle of the mill and any lumber coming off the carriages that had to be edged or ripped was conveyed by rollers to the edger, the slabs being further conveyed to a pit where they were cut into stove wood lengths for fuel.

In 1910, the Grandview mill burned, but was replaced by an even larger capacity mill with twice the horsepower of the first, 500 h.p. and a capacity of 125,000 ft. B.M. per 10-hour shift. The second mill was a larger building, two and one-half storeys high, and approximately 50x150 feet in dimension. Like the first mill, the building had no heating system and had windows without glass. The first floor of the building was used by the engineers and millwrights to maintain the machinery. Actual sawing took place on the second floor. The attic contained the saw-filing room.

The new mill went into operation in mid-June 1911 and sawed until mid-November. With the mill's increased capacity, the 1911 cut of 13,235,636 board feet was the largest in Manitoba to that point. But the huge cut corresponded with a decline in demand for lumber, and Burrows was forced to carry over more than half of this amount.[140] As a result of this over-supply, Burrows did not operate any lumber camps during the winter of 1911-1912, although the sawmill did saw logs held over from the previous cut. The depressed state of the lumber industry in 1912 caused Burrows to shut down his Grandview operation for a few months in December 1912.

A logging camp in the Duck Mountains belonging to the Burrows Lumber Company, c. 1906. Source: P.A.M.

As many as 1000 men were employed by Burrows Lumber in the woods and mill operation at Grandview. By 1914, however, the cutting sites on the mountain, within hauling distance of the Valley River, were becoming fewer and more scattered, and hauling logs to the river in preparation for the spring river drive was becoming too costly. As a solution to this problem, Burrows purchased four Phoenix steam haulers from the United States to haul the logs on ice roads directly to the Grandview mill. Each Phoenix could haul 25 sleigh loads of logs, thus cutting horse feed and manpower costs. The use of the steam haulers was only a short-term solution to the log supply problem, however. A forest fire accentuated the shortage of nearby timber in 1915. It also destroyed the last vestiges of the Mountain mill as well as several cutting camps. To increase his supply, in 1915, Burrows purchased a large number of old timber berths on Duck

Mountain and imported logs by rail from the Porcupine Reserve. But the costs of running the Grandview mill had become too high,[141] and in 1919, after closing the Grandview mill at the end of the 1918 season, Burrows moved his centre of operations northward to the Porcupine Forest Reserve. [142]

BURROWS MILL, BIRCH RIVER

In 1900, Burrows had already begun to contract to have timber cut in the Porcupine Forest Reserve. In 1910, a small mill was established along the Birch River, becoming the nucleus of the village of Birch River. Company houses, bunkhouses, a cookhouse, and company store were located on the west side of the Canadian Northern Railway tracks. The mill was powered by 150-horsepower and had a capacity of 40,000 board feet per 10 hour shift. [143] In 1914, over 5,000,000 board feet were manufactured at the mill.[144] (In 1918, disastrous forest fires destroyed much timber in the northern Porcupine Forest Reserve, in the Birch River, Mafeking and Novra districts. To speed up the processing of this burnt timber, before its value could be decreased by insect infestation, a large mill was built at Bowsman and sawing ceased at the Birch River mill.

BURROWS MILL, BOWSMAN

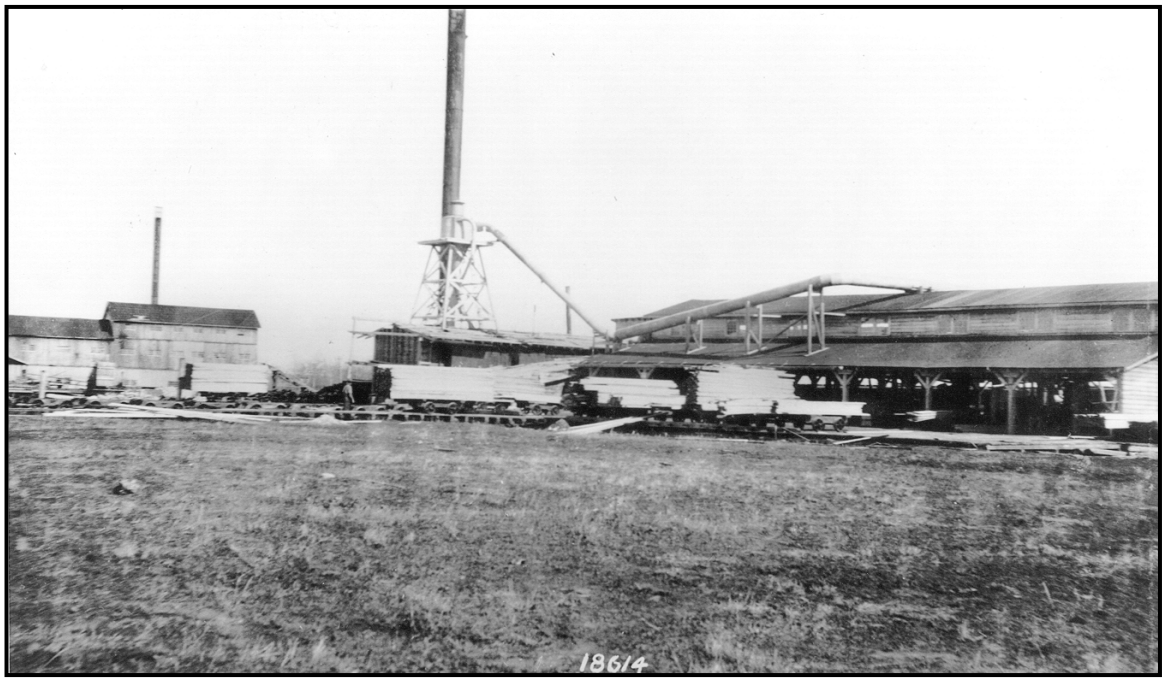
In 1919, the Burrows mill was relocated from Grandview to a site one mile east of Bowsman on the Woody River, on SW1-38-27W, land purchased from the CNR. The Burrows' timber berths in the Porcupine Forest Reserve had suffered a number of extensive fires, requiring that the company log the timber left standing before it became infested with worms.[145] John Hedderly, general manager of the company, oversaw the construction of the sawmill and planing mill, both with a larger capacity than the Grandview mill. The mill manufactured about 20,000,000 board feet of lumber annually [146] and employed 125 men at the sawmill and another 45-50 in the planing mill. [147]

Timber berths were located west of Bowsman, along the Saskatchewan boundary, through which the Woody River ran, and north of Bowsman and west of Birch River. From the first timber berth the logs were taken to the Woody River by sleds and then floated down the river in the spring. Two dams, one on Upper Woody Lake and one at Whitefish Lake controlled the water levels. One year six to seven million board feet of timber were floated down the river to the Bowsman mill. [148]

In the berth north of Bowsman, cutting camps employed an additional 200 men and 50-60 teams of horses. Here the land was more hilly and the rivers not as accommodating for log runs. Also the timber was much larger. There were eight woods camps, each with a landing camp, some close to the railway, some close to a river. The camps west of Bowsman were generally on the river, with dams constructed on the Woody and Whitefish rivers to facilitate a spring river drive of logs. In the northern berths, around Birch River, train transport was easier. The logs were hauled to a railway siding at Mile 10 (Antler Corner) and put in large skidways 50 feet high and running back 200 yards from the railway. After the logs from the river drive had been processed, a log train was sent to Mile 10 and the logs hauled on large Y-flat cars, which carried about 10 million feet per car. In Bowsman the mill had a spur line from the main CNR tracks and the train would bring a load of about 30 cars and leave it on the spur next to the river. The cars were unloaded by cutting the stakes and letting the logs roll off into the millpond. Then an engine would come back from Swan River and return the empty cars to be refilled at Mile 10. As timber was cleared from these berths new ones were taken further north, the timber being moved by rail to the Bowsman mill.

In the 1930s, the company used a Phoenix Steam Log Hauler instead of the railway. These machines could haul 10-15 tons per load and could tow 25-30 sleighs loaded with logs. The horses and sleds used the ice roads to take the logs from the woods to the flat lands. Then the steam haulers took over. During an average winter the steam haulers could transport five to six million board feet of timber to the Bowsman mill. [149]

At the mill the logs were dumped into the millpond and sent into the sawmill, which was powered by three large thirty-six foot boilers. The mill had two band saws with resaws and edgers. The mill had a capacity of 125-140 thousand feet per day.[150] One side of the mill had a double band saw on a piston drive that cut both



A planing mill used by the Burrows Lumber Company in the Porcupine Mountains, probably in Bowsman, n.d. Source: P.A.M.

ways. On the other side of the mill the smaller logs were cut with a carriage that only cut one way, but at a faster speed. The sawdust was channeled into bins and was used as fuel to fire the boilers.

Any trimmings or logs unsuitable for lumber were sent by conveyor to the lath mill. There, the stock was cut into four-foot lengths and put through the lath machine. The operator would grade them as No.1 or No. 2 as they came out of the mill. Every time fifty laths were produced they were tied into a bundle. The residue from the lath mill was put into chutes to be made into firewood. These were piled into six-foot high piles and sold after the wood had dried. What residue remained was sent into a burner constructed of metal and resting on a cement base. The shavings and sawdust from the planing mill were blown into the burner by air pressure.

Two planing mills were located 500 feet from the sawmill. Sitting nearby was a large machine shop with drills and metal lathes on which any kind of machinery repair could be undertaken. The powerhouse for the planer was a cement building with two, thirty-six foot boilers, fired by shavings from the planing mill. Lumber for the planing mill was brought by a narrow gauge railway from the piles drying in the piling yard where 10 to 15 million feet of raw lumber might be drying at any one time, awaiting processing or shipping. Separate piles, 24 feet high, held various lengths and thickness of lumber.

Planed lumber was placed directly on trucks or hauled to railway cars waiting on the platform in front of the planer. Five to six cars were usually loaded per week and shipped to various destinations in Manitoba, Ontario, Saskatchewan and the United States, where nearly half of the

lumber was sent. Burrows had a contract to supply considerable amounts of lumber for constructing Pool Elevators across the prairies in the late 1920s. [151]

In the 1920s, the Bowsman mill also had a fence factory attached to it. Laths, heavier than normally produced by the lath mill, were manufactured into snow fencing and rolled into 100-foot lengths on a special machine. These were then dipped into vats of red paint, and sold to municipal or provincial governments, or retail outlets. [152]

The sawmill employed about 125 men while the planer required additional 40-45 men. Extra shifts required additional men. The mill complex included a large cookhouse and a large barn to care for the horses used to pull the carts around the mill yard. The mill operated until 1930-31. The fence mill was moved to National Mills, the new Burrows mill site, but everything else was salvaged or torn down. For years the barn-blacksmith shop remained on site but gradually deteriorated. [153]

Burrows Lumber Company also operated about 35 retail lumberyards, in Bowsman, in Swan River, Dauphin, and other places in Saskatchewan and Manitoba. The spruce products for these were supplied from the Bowsman mill. In the 1920s, the company secured large contracts for railway ties, and John Hedderly went to Phoenix, Alberta to build a sawmill on the Saskatchewan River to produce the ties. When T.A.Burrows died in 1929, the business was taken over by his son, Theodore, and his nephew, Theodore Sparks. The retail outlets were sold to Monarch Lumber Company in 1929.

In the 1930s, the price of lumber declined. Schwartz Salvage, in 1933, sold the assets of the Bowsman mill at a huge auction sale. One mill was purchased by Jim Hogg who had it moved twenty miles east of Bowsman to his farm, where he operated it for several years on a contract basis for farmers. [154]

BURROWS MILL, NATIONAL MILLS

Having depleted their timber berths in the Duck Mountain and south Porcupine forests, the Burrows Lumber Company closed its Bowsman mill in 1931. The company had already moved their operations northward to a railway siding called National Mills, northwest of Mafeking, Manitoba. As early as 1906, Burrows had secured timber berths that covered all the Porcupine forest on both sides of the border from Bowsman north, well past Mafeking. Timber berths #954, 1002, 992, 1000, 1001, 1121, 1047 covered hundreds of square miles, and timber from these berths had previously been shipped to Bowsman for processing. [155] Now the company set up a sawmill and a selling agency in the middle of these berths. They purchased lumber from other operators to sell to retail lumberyards, as well as producing railway shims from the birch trees, and spruce lumber, at the National Mills sawmill.

In 1928, the company took over three timber berths nearby that had belonged to the Red Deer Lumber Company. The mill produced little lumber after 1930, concentrating on the production of birch railway shims.[156] This in itself was an indication of how depleted the forests in the area were. The National Mills sawmill ceased operations in 1948. [157] By this time the first growth forests in the area had been largely depleted. The remaining stands were in isolated spots, and would be handled by small operators with portable mills. But the company had already opened new mills in northern Saskatchewan and Alberta where it had produced the rough lumber much in demand for building barracks and ships during World War II.

Following the death of Theodore Burrows in 1951, Sparks sold the company to John LePage, owner of a rival lumber company, in 1954.[158] LePage combined the two companies but retained the widely known Burrows Lumber Company name, and shifted the focus in Manitoba to pulpwood. The company worked on extracting pulpwood from the Grand Rapids area before it was flooded by the new hydro dam in 1965. Then the last of the company's sawmills was shifted from northern Manitoba and Saskatchewan to northern Alberta. LePage turned the company over to his son-in-law, Frank Findlay who sold it to his accountant, James W. Clarke in 1976. [159] Today, the Burrows Lumber Company continues to operate out of its Winnipeg headquarters as a wholesaler of hardwoods and softwoods.

CAVERLY MILL, BOWSMAN

In 1899, Jefferson Caverly, a lumberman from Madoc, Ontario, brought his family to the Bowsman area to start a lumbering operation in the Porcupine Forest Reserve where he had acquired a lease on a timber berth. He and his three eldest sons, William, Clifford and Louis, spent the first winter cutting logs and clearing the bed of the crooked Bowsman River so that they could use it to transport logs from the mountain to just north of Bowsman where they set up the sawmill. [160] The next year they began full operations with bush camps. Later they moved their sawmill directly into the bush, abandoning the river drive. In 1919, the three older sons left the business but two younger sons, Clarence and Briggs continued logging after the death of their father in 1922. The sawmill closed in 1942.

The Caverlys operated on contracts to supply lumber to retailers. A big contract for six million board feet in the winter of 1927-28 ended in disaster when the large Winnipeg firm who had ordered it went bankrupt in the 1929 Crash without paying for the lumber.[161] Fortunately the diversified economic activities of the Caverlys (a store and a farm) allowed them to overcome this setback.

ASHDOWN-BOSSON MILL, SWAN RIVER

In 1899, J.H.Bosson and Alf Ashdown arrived in the first settlement in the Swan River Valley, called Tent Town, but soon to be relocated to become Swan River. Ashdown was the brother of J.H.Ashdown, owner of Ashdown's Hardware in Winnipeg. The two men, who had both come from the Portage la Prairie area where they probably knew each other previously, purchased land

on the corner of 5th Ave. N. and Main St. and opened a retail hardware/lumberyard there. They acquired a timber berth, five square miles wide, fifteen miles west of the Manitoba-Saskatchewan boundary on the south slopes of the Porcupine Forest. The former owner, Stewart Murphy, had already cut 7,629 logs in 1905, when he reassigned the berth to Ashdown and Bosson.

The lumber mill was located near 9th Ave N. where the Swan River turns north. There was a dead leg of the river here and the men were granted use of it for a millpond. A 300-400 foot canal was dug from the dead leg to the mill. Two steam boilers supplied the power to saw the logs, which were located down the hill in the river and transferred by jack ladder to the mill. Steel tracks were laid on the east side of the mill for small carts to haul the sawn lumber to 9th Ave. where it was piled for drying.

The company cut throughout the 1908 season, taking a total of 2,840,612 ft of lumber. The logs were hauled to the Jackfish Creek that flowed into the Swan River. Dams were placed on two lesser creeks, but not the Swan River, that would be used to float the logs downstream. One of the dams broke prematurely in spring 1907, making the log drive quite impossible, with logs being trapped up river, while others were lost when the boom broke on the Swan River by the mill. The cost of retrieving the logs, some of which had to be purchased back from men who had salvaged them, was a financial disaster. To make certain this problem did not occur again, the company invested money to build a better transportation system, creating a road in the Thunderhill area. These combined financial expenditures caused the company to fail. The mill and its buildings stood vacant for a number of years before being sold in 1915. The Red Deer Lumber Company purchased some of the equipment.

PARROTT MILL, GRANDVIEW

From 1910-1964, the Parrott family operated a sawmill in the Grandview area, probably on NW13-26-25W, very close to Silver Creek and close to the boundary of the Duck Mountain Forest Reserve. The Parrott family was one of the early families in the Grandview area and Fleming Parrott had worked as a blacksmith at the Burrows Mill in Grandview, maintaining the mill machinery. He and his brother, Sandy, sawed timber from their own lands but also from the Duck Mountains. The lumber was used to build many of the homes in the district. [162]

DALGLEISH MILL, GRANDVIEW

Late in 1938, Robert James Dalgleish of Grandview secured a timber berth in Duck Mountain from Theodore Sparks (General Manager of the Burrows Lumber and, after T.A.Burrows' death, partner of Burrows' son, Theodore, Jr.). Dalgleish operated a mill in the Duck Mountains each winter until 1947, when the mill was destroyed by fire. The family run operation hired about 60 men each year and the average cut was a million board feet per year.[163]

RENWER –COWAN AREA MILLS

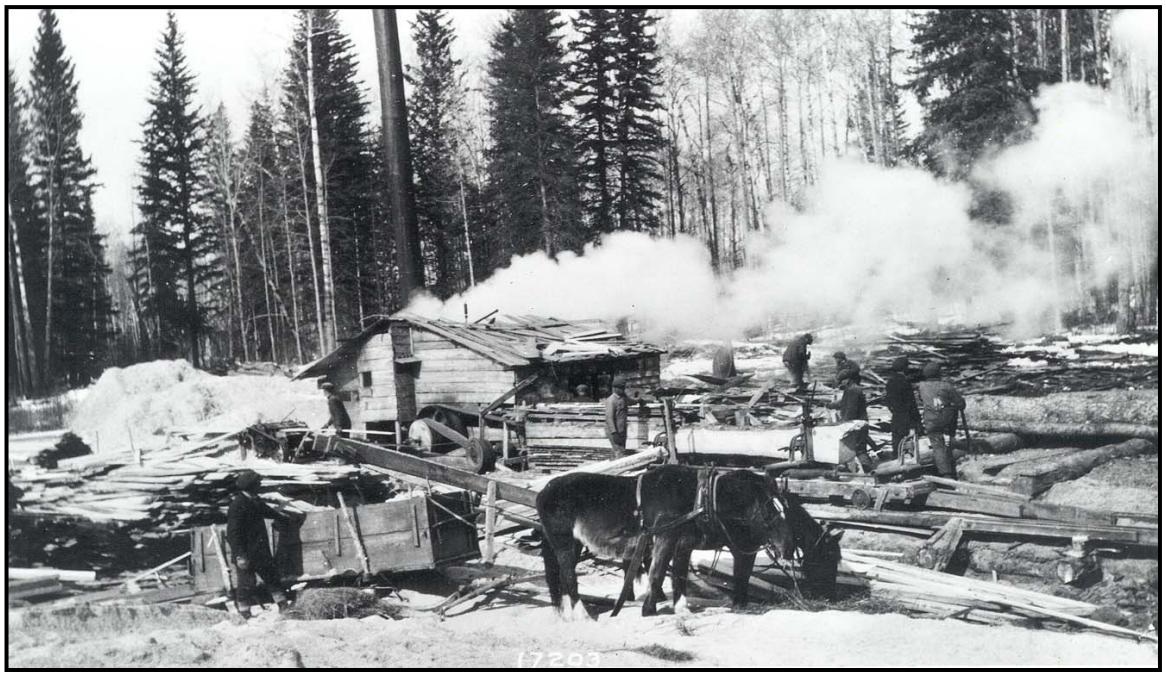
In the 1940s until 1960, Tony Lewicki employed fifty men as pulpwood cutters, loggers and sawmill workers at Renwer. [164] Near Cowan there was a logging operation at what was known as Briggs Spur, in reference to a spurline, which ran from the lumber mill to the CNR mainline. Jack Spurr sold this operation to John Hay Sr. in 1946, and the Hay family operated the business until 1961, when a huge forest fire destroyed all the timber stands between Swan Lake and Cowan.[165] Another sawmill operation owned by Mike Reniak, cut timber in the Slater, Renwer and Cowan area in the 1940s but was transformed into a custom sawing operation around 1951. [166]

COCKERILL MILL, MERRIDALE

Charles and Ruddall Cockerill began operations on Timber Berth #1740 in 1912, milling 159,050 board feet of lumber at their sawmill located on 24-27-27W. Three other timber berths were added to the Cockerill enterprise, one on the Shell River, another near Dark and Crerar lakes,

and a third at Angling Lake, as a second generation of Cockerills entered the lumbering business. As well as cutting their own timber berths, after 1939 the Cockerills also cut on contract for the Continental Lumber Company of Timberton. [167]

Their operations were typical of middle-sized mills in Manitoba. About 35 men were employed in the logging camps with 25 men working at the sawmill.



Rudall Cockerill's sawmill in the Duck Mountains, 1924. Source: P.A.M.

MCBRIDES MILL, TIMBERTON

Robert McBride established the first sawmill in the Timberton district in 1917. While he cut a great deal of timber for farmers on settlers' permits, he also had two timber berths in Townships 30 and 31, Ranges 28 and 29, covering about ten square miles collectively. He held these timber berths until 1935, paying an annual rental fee of $35 in that year, but probably less in the earlier years. In 1909 McBride had acquired an existing sawmill, operated by A. Maquire, north of the Grand Narrows district. In 1940, McBride's lumber camp was in its twenty-third year of operation, and was located "close to the old trail from Fort Pelly to Pine River via Singuish Lake, along the highway between Benito and Roblin." He still owned the lumber mill in 1955, when he died. [168]

RED DEER LUMBER COMPANY, BARROWS

In 1908, for the first time in six years, a company other than Burrows Lumber Company was the largest lumber producer in Manitoba. The new American-owned firm, the Red Deer Lumber Company, had begun operations in 1907 at a state-of-the-art mill erected on the south shore of Red Deer Lake, drawing timber from the north side of Porcupine Forest, but also from virgin territory stretching north towards The Pas and west into Saskatchewan. Many streams drain into Red Deer Lake, including the Red Deer, North Armit and Etomami rivers. Obviously the American lumbermen who chose the mill site believed this would greatly reduce the cost of transporting the logs to the mill. In reality it never worked quite as well as they had anticipated.

In the early 1900s, conditions were perfect for American investment in western Canada's forest industry. The white pine stands of Wisconsin and Minnesota had been depleted, and America's

lumber supply was inadequate for its market. Since 1898 large timber berths, covering up to 50 square miles, had been available in Manitoba and railway construction had finally penetrated the areas close to the timber resources. Lumbermen had been moving northward from Minnesota to work in Canada's forests since the 1890s. Railway companies, who needed settlers and industrial development to make their railways pay, advertised in American newspapers, and news of the potential for sawmilling would not have gone unnoticed by investors in Chicago and Minneapolis, previously involved in the Minnesota lumber business. The Canadian government, too, encouraged investment by American lumber firms because the Timber and Grazing Branch of the Department of the Interior believed that big firms were more likely to prevent forest fires and wastage than the owners of small portable mills were. [169] In this same period American investors were purchasing farmland in western Canada and establishing huge agricultural businesses that became known as Bonanza Farms. The Union Lumber Company of Chicago saw the potential for investment in Manitoba's northern forests and took it.

View of the Red Deer Lumber Company mill on Red Deer Lake, 1918. The planing mill is in the middle of the picture and the sawmill operation is on the right. Source: P.A.M.

A subsidiary company was established and, in 1907, the Red Deer Lumber Company took over Timber Berth #1051 in the Duck Forest Reserve from A.W.Fraser, beginning cutting in the same year on the 30 square mile berth. [170] Subsequently, eight other timber berths along the Manitoba-Saskatchewan border, covering an additional 156 square miles, were acquired. The leasing costs for these berths totaled around $785.00, plus the 50-cent charges per board foot of lumber produced. [171] In its first year the company paid duty on over 5,000,000 board feet, as well as on a substantial number of laths. [172] The lumber products were shipped on a private company-built spurline that ran from the lake to the main Canadian Northern Railway branch line between Swan River and Prince Albert. The majority of the company's products were exported to the United States.

The mill site on the southwest corner of the lake was a huge complex. Besides the mill, there was a complete village called Barrows, where the workers lived. At the junction of the company spurline and the Canadian Northern was a railway siding called Barrows Junction. A small

locomotive, also used to shunt railway cars around the mill yard, hauled the lumber from the mill to Barrows Junction four times a week, returning with supplies and mail. Many former employees remembered the cold walk between Barrows and Barrows Junction if one missed the regular train service, or, as was the case, one was going to pick up alcohol, forbidden at the town site, from a "boot-legger".

The settlement consisted of homes for forty families, all laid out in streets close to the lakeshore, and rented for $8.00 per month, with water, ice and power service included. The company also delivered wood, costing 75 cents per cord. [173] The town had a company store, a school, a church, a hall, poolrooms and a barbershop. A doctor visited the settlement on a regular basis.

Five hundred yards from the village sat the sawmill and planer, the space between them piled high with green (unseasoned) lumber. Attached to the planer was a lath mill, which was operated by the same steam engine as the planer. Another lath mill stood nearby, but it was only operational during the winter. The sawmill, with a capacity of 130,000 board feet per 10-hour shift, [174] was attached to the lake, and the huge boom of logs stored there, by a jackladder that brought the logs to the second floor. Here the logs were processed through a steam driven dual carriage band saw. From there the sawn lumber and slabs left the mill on a series of rollers, for sorting tables. The ground floor of the mill housed the machinery, belts, conveyors, and other power equipment. The top floor was the filing room, where the saws were sharpened.

A brick refuse burner, with a twenty-foot diameter, and eighty feet high, stood near the sawmill. The dome-shaped top was screened to prevent sparks causing fires in the piles of wood products.

> Power for the mill came from the one-cylinder, coreless, steam, stationary engine fed by three steam boilers. Sawdust was blown into the firebox by a huge fan to produce a red-hot heat. Four pie-shaped pieces, bolted together to make a circle, fashioned the huge flywheel which measured twenty-six feet in diameter. This drove another eight-foot pulley. These two were run by a drive belt five feet wide made of thousands of tanned cowhides glued together to a thickness of an inch and a half. [175]

Also part of the mill complex was a blacksmith shop, a huge stable for the large number of horses used in the cutting camps to haul the logs to the lake, bunkhouses for the unmarried workers, and an office. The office had a cement vault and this is the only extant structure left from the mill. This vault was erected after a spectacular robbery at the mill in September 1920. Four men robbed the patrons of a poker game and escaped into Saskatchewan, where they were found and two died in their attempt to avoid capture. [176]

During its first years, the company cut the timber around the lake, setting up cutting camps every three to five miles. There were usually 11 bush camps operating. [177]Later, the camps were along the major rivers, like the Red Deer, and the logs driven down to the lake in spring. The company had trouble with its log drives on the Red Deer, Etomani, and Little Swan River because it did not have proper reserve dams. Because there was not sufficient water to power the logs all the way down the river to the lake, the log drives hung up for four years in a row. [178]A small tugboat moved the logs around the lake during summer. This tug was later replaced by a “steam-driven side wheeler,” built at the mill site itself. The tug would bring a load of logs, sometimes as many as 20,000 board feet, from the huge boom on Armit Bay, on the north end of the lake, to the jackladder of the mill.

The original sawmill burned around 1910 and was rebuilt. The planing mill burned too, in 1924, and was replaced with a large new cement building, with 10 planers set at different regulation cuts, meaning that the planer never had to be shut down to reset the size of cut. By then production had peaked at 20,000,000 board feet annually. [179] There were 140 men employed at the mill itself, divided into two shifts. [180] While the mill appeared to be a thriving place, actually

very little new timber was cut after 1916. [181] Records show some cutting in 1923-24, but mostly the company was manufacturing less and less, until March 1926, when the mill ceased operations. [182] Since the owners had only recently spent a good deal of money rebuilding and upgrading the planer, the closing of the mill was likely dictated by world timber prices, but more likely by the closing of American markets to Canadian lumber. The owners decided that there were not sufficient timber reserves to continue running the mill. They literally picked up the huge belt used to drive the steam engine and left for the forests of British Columbia, leaving everything else as it stood. [183]

The Pas Lumber Company purchased the mill site in 1928. They sent in a timber cruiser who advised them that it was impractical to spend money up-grading the dams on the rivers to improve the conditions for the spring log drive. Instead The Pas Lumber Company decided to set up a planer further west in Saskatchewan on the CNR line, to harvest the timber of the Porcupine Reserve. This mill, dependent on portable mills set up at the cutting camps, opened in 1928 and employed 400 men, many of them former employees of Red Deer Lumber. The mill produced 22 million board feet of lumber, before the Great Depression forced its closure in 1929.

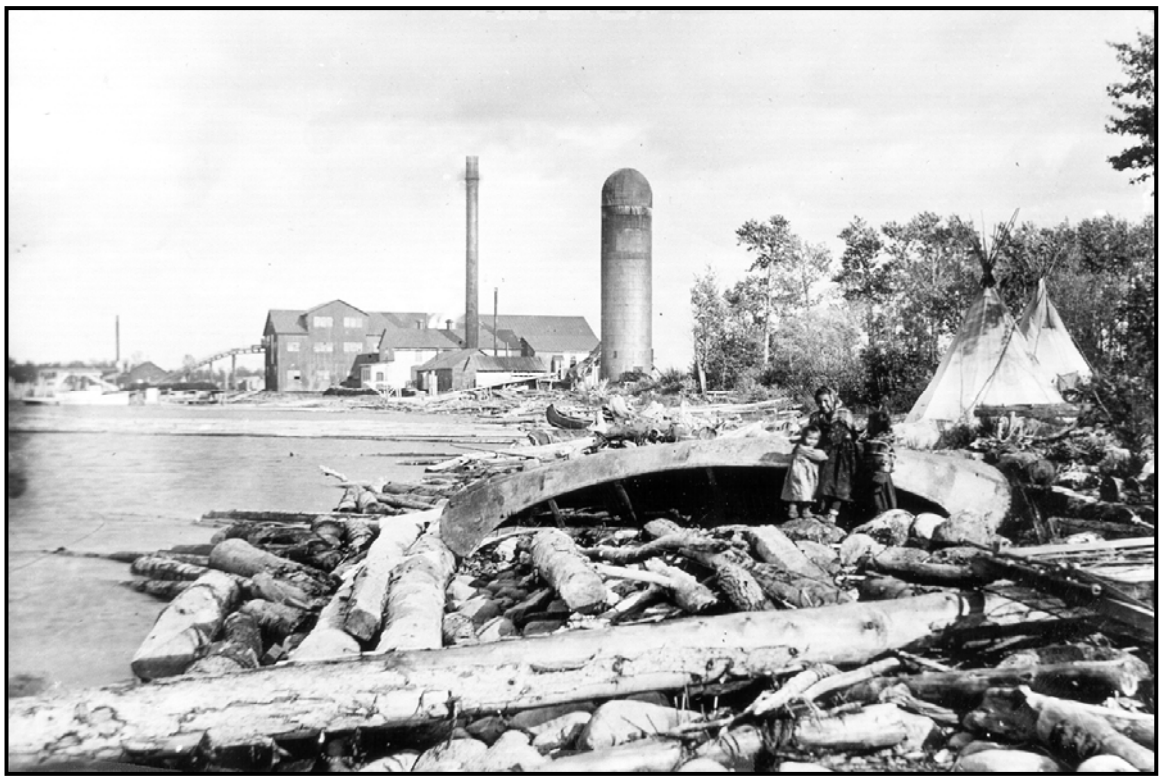
The salvaging of the equipment of Red Deer mill began. The CNR picked up the tracks of the spurline and the carts, rails, planers and saw carriages were moved to The Pas. [184] The railbed was turned into a road on which to haul out the remnants of the mill. In 1936, another company bought the name Red Deer Lumber Company and one boiler from the mill site, so small was their planned operation in comparison to Red Deer Lumber. They set up their mill at Barrows Siding, which now became known as Barrows. [185] In 1937, four more 10-ton boilers were removed from Red Deer Lake and shipped to The Pas. [186] During the Second World War, when the demand for scrap iron was intense, the last remnants of mill machinery were recycled.

What remained at the lakeshore was a small Metis community. Former employees at the Red Deer mill, they later sought employment at other mills in the area, and continued to live in the houses built by the original company.

MUTCHENBAKER'S MILL, MAFEKING

When the Canadian Northern was built to Mafeking in 1900, the railway company opened a sawmill to cut ties and timber for trestles, as the road was constructed northwesterly to Hudson Bay Junction. In 1902, when the railway was completed, the enterprise was sold to Ace and Herman Mutchenbaker. [187] The mill was located close to the railway tracks, with a spurline directly to the mill. A hot pond, a pool where the water was kept from freezing by steam boilers, enabled the sawmill to be operated in either summer or winter.

The Mutchenbaker's timber berth was in Township 35, Ranges 25 and 26, in the Porcupine Forest reserve.
The sawmill was destroyed by fire in 1905, but was rebuilt shortly after. [188] The mill sawed two million board feet per year, but the company had some hard times in 1906-1908, when the operation was heavily indebted to first the Bank of Ottawa, [189]and then the Bank of Toronto. [190] In 1908, the company produced 1,862, 848 bd. ft. of lumber and sold none. [191] In 1909, the company was back on track, producing over 6,000,000 bd. ft. and selling over half of that amount. [192] For a decade Mutchenbakers was the third largest lumbering company in the Parkland region. [193] The company ceased operations in 1918, in part due to the huge forest fire that scorched a large area on the eastern slopes of Porcupine Forest Reserve in the Birch River to Mafeking area.



View of the Red Deer Lake sawmill with natives camped along the shore line of the lake. Source: Russell Photo.

8. THE PAS

The area around The Pas had three natural assets to recommend it as a potential lumbering region: the high ground of The Pas Moraine, a gravel ridge left behind by receding glaciers; the Saskatchewan River, providing a major water route to access the forests; and the surrounding mixed forest, consisting of spruce, pine, poplar, birch and tamarack. The stands of white pine, with diameters of two to three feet and standing 100 feet tall, were especially attractive to American lumbermen who, by 1910, had severely depleted the supply of that species in the forests of Minnesota and Wisconsin. The downside was that the forests of the region were slow growing and once cut, would take 100-125 years to regenerate. The area was also very remote and without railway connections to the south, the bountiful forests would have to remain virgin territory.

The potential of the forests had not gone unrecognized by early inhabitants of the region. When The Pas Band took treaty in 1876, they took timber reserves. Not until 1904, however, were they able to obtain a sawmill. This they set up on Mission Island in the North Saskatchewan River, below the proposed railway crossing. Eventually the Band surrendered their land on the south side of the river and moved their mill to the north side in 1908. Much of the lumber for their new homes on the north side was cut by the aboriginal peoples and processed by this sawmill. Between 1907-1909, the Band cut about 100,000 – 150,000 board feet annually. [194] After the establishment of the Finger Lumbering Company in The Pas, the Natives cut timber intermittently, until 1930, since many of the Band's men found employment in other lumbering operations.

FINGER LUMBER COMPANY, THE PAS

Herman Finger is a good example of the American lumbermen who expanded into the Canadian forests following the exhaustion of the forest resources of north central United States and then northwestern Ontario. Having been a partner in a successful lumber company in Eagle River, Wisconsin, Finger and his partner moved operations to the Port Arthur area of Ontario in the late 1880s, founding the Pigeon River Lumber Company. By 1906, with their timber supply down to 10-12 years, Finger turned his attention to the forests of the North West Territories, selecting timber berths in the Carrot River area because of their supply of white spruce. Because Finger was also considering establishing a pulp and paper mill at some future date, he chose the small aboriginal village near the Hudson's Bay Company post at Pas as the site for a large lumber mill, believing that the forests and location would be ideal for both lumber and paper production.

Timber berths were acquired in 1905-6, some on the Saskatchewan side of the boundary and some in the District of Keewatin, North West Territories (as the area was called before it was joined with Manitoba in 1912). The 194 square miles of forest the Finger Lumber Company controlled were therefore under different government jurisdictions, complicating the company's situation. One complication was the need to have surveys and resurveys carried out to determine the boundaries of the river lot lands Finger had purchased from Metis families. This delayed the building of the mill and caused the federal government to threaten to charge extra dues for the timber that had not been cut on his timber berths, as required by his permit. The mill was also delayed by the slow schedule of Canadian Northern Railways in completing the railway to The Pas.

Construction on the mill began finally in October 1910. The mill was located beside the river, on River lots 1-6, where overgrown, concrete foundations are still visible today. The main mill building was two storeys high and 208 feet long and 64 feet wide. The first saw was a gangsaw, a set of several saws set in a wooden frame. In spring 1912, bandsaws were added. Making a narrower cut and hence less wasteful, the circular bandsaws gave the sawmill a 200,000 board feet capacity per 24 hours. The nearby planing mill could process 250,000 feet per day. The drying yards could hold 30 million feet. [195] The refuse from the two plants was burned to produce fuel for the steam boilers. A diesel generator produced electricity for the mill, and later for the developing town of The Pas.

A spurline was built by Canadian Northern to the mill. A great booster of The Pas, Herman Finger worked hard to have the Hudson Bay Railway build a terminal in the village. He created a development called Fingerville, where 20 houses were built for his married employees, as well as boarding houses for his single workers. Many of the employees were from the United States and only stayed in The Pas during the winter season when 200 men were employed at the mill complex.

In 1911-12, Finger expanded his cutting operations to five camps, employing 500-600 men. [196] With a payroll of $240,000 annually, the Finger operation had a decided effect on the economy of the region. The company shipped most of its lumber across the Prairie Provinces but also sold lower grades to former clients in the United States. In 1913, Finger opened a retail lumber business in The Pas, at the corner of First and the CNR right-of-way. The company also sold firewood and supplied lumber for a box factory that opened in 1915.

The First World War brought a slowdown in the building industry in the West and also a shortage of workers for the mill. But the Americans were not in the war at first and demand for exports to the American market were very high. In 1915-16, the Finger Lumber Company, with a staff reduced to 400, cut 23 million feet of lumber, the largest cut in its history. [197] The sawmill ran night and day to produce lumber for shipment to U.S.A. Prospects seemed so good that Finger leased an additional 93 square miles of timber land, and made plans to increase the size of the sawmill, all in preparation for a building boom after the war. [198]

In 1919, disaster struck. The company barn, worth $12,000, burned in February and water levels during the summer were too low to float the winter cut down the river to the mill. Despite closing the sawmill for the season, Finger's optimism remained, as he made plans to install new mill equipment, and to hire 1000 men for the camps on the Carrot River, to fulfill plans to process 50-60 million feet that season. [199] Instead, the death of a long time financial partner led to the sale of the Finger Lumber Company in November 1919, to David Winton and his partners of Minneapolis.

THE PAS LUMBER COMPANY, THE PAS

In 1919, partners, Charles Winton, David Winton, and Alvin Robertson purchased the Finger Lumber Company. For $1,075,000, the men took possession of the complex in The Pas, one tug, two steam barges, and 324 square miles of timber limits along the Carrot and Saskatchewan rivers. [200] Many of these berths were in Saskatchewan, some berths were cut over, and others were not accessible from The Pas.

The company already owned a mill in Prince Albert, Sask. Machinery from there was used to modernize the mill at The Pas in 1919. The Wintons decided to run the operation at The Pas for a longer period each year, and therefore required that the American mill workers and managers live in The Pas. Like the Finger management, the Wintons played a role in the town's development. All contributions to the town were tied to the fortunes of the mill.

The company replaced the old circular head rig with two single-cutting bandsaws, but kept the gangsaw. [201] This improved the mill's efficiency to 175,000 board feet per 10-hour shift. [202] This meant that 20-25 million board feet of timber were needed to keep the mill running at capacity. Five horses and five men worked constantly transferring lumber from the sorting chain to the drying yard and from there to the planing mill. The horses were kept in a barn at the mill site. Another important transportation mode was the riverboat or barge. The Wintons used the *S.S.Winton*, the *Emma E,* the *David N. Winton*, and the *Alice Mattes*. The latter was a smaller boat more suited to the Carrot River, along which much timber was moved.

A retail operation existed for a few years, but the company soon abandoned the retail sector, concentrating on filling large orders to the United States. Although there was a slump in the lumber industry in 1921, the Wintons carried on, actually improving their business as the 1920s progressed. In 1927, the annual cut was over 50 million board feet, sufficient to justify increasing the size of the boom on the Carrot River to 18 miles. [203] This meant that the river was blocked to all travel during the spring drive, so the company created a system of rough roads as an alternative for travel.

In 1928, The Pas Lumber Company purchased the Red Deer Lumber Company at Barrows. After investigating the mill and the transport system there, they decided to close the Red Deer Lake mill and instead, build a planing mill at the junction of the Pewei and Etomami rivers in the Saskatchewan portion of the Porcupine Forest Reserve. In 1929, this mill employed 400 men and produced 16 million board feet of lumber. [204]

In 1929, the lumber business suffered the same depression as the rest of the economy. With no demand for lumber, due to the lack of new construction projects, most of the lumber produced in 1929 went unsold. When the Smoot – Hawley bill was passed by the American government in 1930, the American lumber market was essentially closed to companies like The Pas Lumber Company. The Wintons chose not to operate logging camps in 1931 and 1932, and did not show a profit again until 1935. Only after the Americans removed the duty on western white spruce, in 1938, did production begin to pick up. Added to the drop in demand for timber during the Depression was the devastation caused by forest fires under the drought-like conditions. Water levels in the rivers dropped, delaying or canceling river drives for whole seasons. Many mill workers lost their jobs and left to find employment in the mines in the North. An agreement was worked out between the Company and the Town Council, in 1932, to give the available jobs to local men in exchange for reduced taxation for the company.[205]

In another cost-cutting measure, the sales offices were transferred to Minneapolis, where the major sales were still concentrated. But the completion of the Hudson Bay Railway to Churchill in 1931 did provide another possible market for the lumber from The Pas region - Great Britain. Some lumber was shipped in 1934, but not even the outbreak of war made this a lucrative venture. Throughout the Depression, the company produced from 27,387,918 bd. ft. (1931) to 148, 699,714 bd. ft. (1941) annually. [206]

The end of the Depression brought a return to better lumber prices, but the company was faced with another concern – the depletion of their timber supply, estimated at occurring in not more than ten years.[207] Also threatening was the invasion of settlers to the Pasquia Valley as the Saskatchewan Government moved farmers from the drought-stricken prairies to the parkland region. While lumbering in the region was intensified by the war, a shortage of skilled loggers existed, many of them being recruited by the Canadian Army Forestry Corps.

Post-war plans for Northern Manitoba also concentrated on the agricultural possibilities of the Carrot River Valley, as well as mining and fur habitation rehabilitation. Preserving and improving the forests for future forest industries was only of secondary concern. [208] Aware that the forest resources were declining and irreplaceable, the company restructured its operation, while the townspeople hoped that a pulp and paper operation could be developed to replace the lumber industry upon which their town depended for prosperity. Such an industry was dependent on the creation of a plentiful supply of hydroelectric power.

After the war, the sawmill began operating only during summer and the planing mill during the winter, employing the same eighty-five men. [209] Before the Depression, the company had employed 350 men per shift. [210] The operations of both the Reserve mill in Saskatchewan, and The Pas mill were gradually tapered off. Since the Saskatchewan Government refused to allow timber from their province to be processed in Manitoba, a permanent mill replaced the portable one at Reserve and timber from Moose Lake was found to supply The Pas complex. Although a supply of about 12 million board feet of merchantable timber existed there, transporting it to The

Pas was difficult, requiring the construction of 50-75 miles of ice road.[211] Opposition from Moose Lake residents and Tom Lamb, who had a small mill in the area, to the awarding of this timber berth to The Pas Lumber Company, combined with the transportation problems to delay the exploitation of this timber. Not until 1951–53 were these trees logged and then they yielded only five million board feet, much less than the original estimate.[212]

For the next three seasons the Saskatchewan Government, under pressure from Manitoba's Government, agreed to provide a supply of timber for the complex at The Pas. No amount of pressure could induce them to extend this arrangement, however, and in 1957 The Pas Lumber Company began to liquidate its logging equipment. The sawmill closed in August 1957 and the planing mill in May 1958. The Wintons moved their operations to the Prince George region of British Columbia, offering jobs to any of their former workers who wished to relocate.

The closing of The Pas Lumber Company brought an end to the era of large lumber mills in Manitoba. What remained of the timber resources that had been so aggressively spent in the previous eighty years were small trees, and isolated timber stands, that continued to be cut by small independent operators with portable mills.

Company houses of The Pas Lumber Company, on First Street, The Pas, c. 1912. Source: P.A.M.

V. PULP AND PAPER OPERATIONS

Since the 1920s, Canada has been the leading producer of newsprint. The pulp and paper industry in Canada has gone through four phases. The first phase, between 1805-1865, involved small locally owned mills that processed cloth rags into paper for a purely local market. The second phase began in the late 1860s with the development of new technology that allowed wood to be ground into fibre, or used chemicals to dissolve wood chips into cellulose pulp. These developments made the abundant forest resources of Canada very desirable. Since large amounts of investment capital were required to purchase the new machinery for these technological processes, the small family run operations soon disappeared. In this stage, Canada's forest resources were often exported to be processed into paper elsewhere.

The third phase occurred in the 1890s as a result of a tremendous increase in the European and American demand for newsprint. Since American tariffs made the importation of wood pulp into the United States difficult, from 1890-1927 the capital to invest in the paper industry flowed into Canada. Huge pulp and paper complexes were built far from urban centres, and close to timber and water resources. Hydroelectric power became essential for the running of the huge complexes, where thousands might be employed. In these years large corporations in Quebec, Northern Ontario and British Columbia vastly expanded the industry.

By 1927, the golden age was over. Overproduction had caused prices to fall and development came to a halt. The fourth phase began after the Second World War when the expansion of world markets and new technology combined to render the Canadian pulp and paper industry a prime position in Canada's economy. Judged by value of output, capital invested, wages paid, and contribution of export earnings, it has been Canada's largest industry for over half a century. [213]

1. PULP MILL OPERATIONS

Logs were cut into short pieces on multi-saw machines, and then rotary drums, or a series of spinning knives, removed their bark. In the mechanical process mills, the blocks were then held against large coarse grindstones by hydraulic pressure, while water was sprayed on the grindstones. Next the pulp was diluted with more water and passed through screens. A wet machine picked up the pulp solution on the screens and pressed it into shape on rollers. Hydraulic presses removed more water and the damp pulp was then air-dried.

In a sulfite type mill, the wood was reduced to chips before it entered the pulping process. Sulfur, or a comparable ore was burned to obtain sulfur dioxide and the cooled gas passed through scrubber towers filled with limestone to produce calcium bisulfate solution. The wood chips were fed into large cylindrical tanks of liquor called digesters. Heat was added and the solution was left to "cook" for eight to fifteen hours. The mixture was then blown under pressure into pits or dumped into vats, the waste sulfite being drained off. The pulp was removed to rifflers where the impurities settled out of it before it was forced through the series of screens. It was then dried and shaped by machines as the water was squeezed out of it. In the final process the paper became rolls, weighing 1500 lbs. each.

2. PORTAGE PAPER MILL

In 1878 Samuel McIlvanie established the Marquette Planing Mills in Portage la Prairie. The venture was supplied with lumber from the markets of Minneapolis, Winnipeg, Selkirk and Rat Portage. [214] He also built a large paper mill along the Assiniboine River in 1880. The mill, with a capacity of four tons per day, manufactured all brands of heavy wrapping and building paper. [215] Much of the tar paper, building paper and building products used in the rushed construction in Portage, during the 1882 boom, came from the McIlvanie plant, which included his planing mill, located near the C.P.R. depot. [216] The paper plant was 36 by 100 feet in size and the machinery cost $30,000. [217] Since the first sulfite type of pulp mill was not built in Canada until 1885, the

Portage plant probably used a groundwood system. A rudimentary factory, it would have employed saws to cut up logs, two or three grinders, and a set of stones to further refine the pulp. The pulp was probably dried by a combination of rollers to squeeze out the water, and air to evaporate it. At some point the wood pulp would have been combined with rag fibres. The machinery, built in Beloit, Wisconsin, was powered by a 60 h.p. steam engine. [218] The plant was still operating in 1892.

3. PINE FALLS PAPER MILL

As early as 1913, interest began to be shown in developing the pulp and paper industry in Manitoba. Once the old growth forests had been harvested, the remaining mixed timber stands of Manitoba were far better suited to pulp production than to lumbering. Interest focused on the Grand Rapids and Saskatchewan River region. Plans were put forth by the Lake Winnipeg Paper Company, a combination of American financiers and Canadian, D.B. Macdonald, to built a huge pulp and paper complex at Grand Rapids. The intention was to ship the finished product by lake steamers to Winnipeg. The Forestry Branch discouraged this endeavour by reporting that over the previous 100 years, forest fires had prevented the maturity of timber in the Grand Rapids region to the extent that it could not support a large pulp mill. This analysis had not changed by 1930. An alternative site, the White Mud Falls – Nelson River region, was then considered for development, but this area was considered too remote until after the Hudson Bay Railway was completed.

Meanwhile, J.D. McArthur, a prominent name in the lumbering trade, had concluded that eastern Manitoba's forests could support a home based paper mill. In 1921, he secured Pulpwood Berth No.1, consisting of 729 square miles in eastern Manitoba, on lands lying north of the Winnipeg River, next to Fort Alexander Indian Reserve. [219] He arranged to lease a square mile of land from the Natives, an area that would be purchased outright in 1927. [220] He also negotiated an option to buy River Lot 25 that adjoined the Reserve. This would be the mill site. The Pine Falls site was chosen because the power potential of the Winnipeg River had been greatly increased in 1923 when the Manitoba Power Company added the Great Falls power plant to its original plant at Pinawa. Further generating stations would be built on the river over the years.

Thus was born the Manitoba Pulp and Paper Company. In 1925, the Spanish River Pulp and Paper Co. took over McArthur's holdings, completing the purchase of River Lot 25 and 390 acres in the southeastern corner of Fort Alexander Reserve. Arrangements were made for the Canadian Northern Railway to build a line from Beaconia to the new mill site. With a $9,000,000 investment, the company built a company town for 4000 people, laid out by Leonard Schlemm of Montreal, and the mill, an 800 foot long structure, over 100 feet tall. The complex consisted of a debarking mill, a cooking mill, a grinding mill, and a mixing mill. In the cooking mill, one-quarter of the pulpwood was digested with steam under pressure, and acid made of limestone and sulfur. In the grinding mill, the other three-quarters of the pulpwood were reduced to pulp without the use of chemicals. In the mixing mill the pulp was purified, dried and calendered until it became 1500 lb. rolls of paper which were loaded directly into railway cars. [221] The Pine Falls pulp mill began production in 1927, one year after the building of the Canadian National Railway line.

In 1928, the Abitibi Paper Co. Ltd. acquired all of Spanish River's mills. By 1929, the Pine Falls mill was producing 258 tons of paper per day. [222] In 1928-9, the company used barges to ship 100 tons of paper down Lake Winnipeg directly to the *Winnipeg Free Press*. A road was created from Pine Falls to Great Falls in 1930 and to Lac Du Bonnet in 1931.

Frank H.Anson, an American, who had worked for Ogilvie Flour Mills in Montreal, founded Abitibi in 1913. When students he had hired to look for mineral deposits in northern Ontario, in 1909, returned with a report on the abundance of trees and river systems sufficient to support a paper mill, Anson built a mill at Abitibi River at Iroquois Falls. In 1927, he began purchasing other mills in Ontario and Quebec, as well as the Manitoba Paper Company at Pine Falls. The timing was wrong, however, as 1928 brought a fall in the price of paper from $80 to $68. By 1932, the price

had fallen to $48 per ton and Abitibi's mills were only working at 28% of capacity.[223] The company went into receivership in 1932, in what would become the longest and largest receivership suit in Canadian history, lasting 14 years. By 1974, the company had recovered sufficiently to maneuver a hostile takeover of the Price Co., which owned large paper mills in Newfoundland. [224]

The Pine Falls plant only enjoyed a few good years before global overproduction lowered the price of paper, causing the company to go into receivership. The mill was closed in February 1932, but the company tried to keep its workers in the community by charging reduced rents for the company houses. In July 1935, the company put one paper machine back into production and then the second machine, in fall 1935. The Second World War brought an explosion in the demand for Canada's forest resources, including paper, and Pine Falls was booming. Between 1944-46, German prisoners of war actually worked in the lumber camps. Mill production was up to 345 tons of paper per day by 1948, and 403.9 tons per day by 1955. [225]

In the post-war period, operations changed. May 1965 saw the last log drive on the Winnipeg River. These log drives, held annually for 25 years, were often 31 miles long, taking 10 days to complete and requiring the help of waters stored on Cat Lake and Bear Lake to push the logs down the Bear River to the Pine Falls Mill. Cutting had progressed well past the river systems and ice roads were now more economical for transporting winter stockpiles of logs via tractor trains and trucks to the mill.[226] Carloads of wood chips began to arrive from Hudson Bay Junction in Saskatchewan. Loads of cordwood were shipped from other places in Manitoba as transportation facilities opened the forests of northern Manitoba. By 1979 the capacity of the Pine Falls mill was 500 tons of finished newsprint. To feed this the company required a secure hardwood supply of 122,000 c. units of spruce and /or balsam fir and 3000 c. units of jackpine. In 1979 the Provincial Government entered into a five-year agreement with the company to undertake intensive forest management responsibilities.

By this time, newsprint was Abitibi-Price's most important product, with 85% of its production in mills in Eastern Canada. 90% of Canada's newsprint production was exported to the United States, but this number began to drop as the American newsprint industry emerged, with a cost advantage of 15%. In 1994, Abitibi decided that the Pine Falls complex was no longer financially worthwhile, and announced that the mill would be closed. According to Abitibi's Forest Management Plan with the Provincial Government, it was required to give two years notice of its plans to close the plant. This time period was sufficient for the employees of the plant to form a company to purchase the operation, renaming it the Pine Falls Paper Company. As such, the mill continued to be productive. In late 1998 a Quebec-based company, Tembec acquired it.

The presence of a pulp mill in Manitoba created winter employment for thousands of Manitobans. Pulpwood was cut all over Manitoba and shipped to the Pine Falls plant. In The Pas area, independent lumbering companies sold their pulp to Pine Falls until 1967, when the Churchill Forest Industries plant opened in the region. To settlers on marginal land, the pulp industry offered an opportunity to supplement their meager earnings from their farms. In the 1930s, a good pulpwood cutter, using an axe and a narrow blade Swede saw, could cut two and one-half cords per day, as well as pile the brush from the trees for burning. His pay was $2.25 per cord and he was charged $1.00 for his board in the camp. [227]

4. CHURCHILL FOREST INDUSTRIES, THE PAS

In 1951, the Canadian and Manitoba governments signed a joint five-year program to work towards developing a pulp and paper industry in northern Manitoba. A forest inventory and aerial survey were undertaken, and a consulting firm, ADL, was hired to produce an economic survey of the potential for this industry. This ADL report, released just as the new Duff Roblin Conservative Government came to power in 1958, recommended the Nelson River-Sipiwesk-Cross Lake region as the most promising site for the pulp mill, but this was dependent on the development of hydro-electric power from the Kelsey project. Only after 1962 did the focus switch from that northerly region to The Pas, which had the advantage of transportation facilities. It was decided

that the pulp from the Nelson River area could be brought to The Pas, thus saving the cost of erecting a new company town in the wilderness. Even with cash grants from the government to help establish the industry, the project did not attract many financiers.

It became apparent that to secure a pulp mill in northern Manitoba, the Manitoba Government would have to do more than provide a favourable climate for private enterprise – it would have to provide funds and concessions to attract a company to establish in the North. The employment opportunities, and stimulation of the local economy, that such a mill would provide in an area that needed economic stimulation, could justify this. In 1962, the Roblin Government established the Committee on Manitoba's Economic Future (COMEF) which determined that the Manitoba lumber industry was in decline and an integrated forest industry must be developed to make use of the mixed forests that remained. It recommended that a bleached craft mill be built in The Pas area by 1970, with promised bonuses of reasonable power rates, reduced stumpage and ground rental fees, as well as financial assistance to build roads and provide fire protection. The cost of developing such a forest complex was estimated at $45 million, meaning that only large corporations could afford to commit to it. But no large corporation would take up such a proposal without receiving larger blocks of timber berths. To facilitate this, a New Forest Act was passed in June, 1965, laying down the foundations for leasing very large areas of Manitoba, for long periods of time, to forest companies. The size and length of these licenses allowed companies to attract investors.

In 1966, an agreement was reached between the Province of Manitoba and Monoca A.G. St. Moritz, a Swiss corporation, that created the Churchill Forest Industries (Manitoba) Limited. Cutting rights were granted to 40,000 square miles of land north of the 53rd parallel, to be reduced or expanded after 12 years. CFI agreed to construct the facilities at The Pas in stages. First, the woodlands debarking and loading facilities for 50,000 cords of debarked wood would be built. Next, the sawmill, capable of producing 30 million board feet of lumber per year would be added. Third, would be the paper mill, with a capacity of 300-400 tons per day. [228] Although the paper mill was originally intended to be a newsprint mill, this was downgraded to a kraft mill. Having both a sawmill and a pulp mill, located together, was considered economical: both types of logs could be harvested jointly and the sawdust from the sawmill could serve as fuel while the trimmings could be chipped for the pulp mill.

The agreement called for the Manitoba Government and the Town of The Pas to provide large sums of money to create the infrastructure for the operation, and these costs seemed to escalate at greater speed than the economic spin-offs that were expected to accrue to the community and the province. From the beginning, the Swiss company had insisted on the details of the agreement being kept secret and this would, in the long run, cause problems. Monoca A.G. turned over the operation of CFI to Technopulp Inc. of Upper Montclair, New Jersey, a company formed by Dr. Alexander Kasser, in 1950, to provide technical services to pulp and paper companies. His name became the most prominent one associated with the apparent failure of the company to fulfill its contractual agreement, without more and more funding from various levels of government.

By January 1971, when the new NDP Government of Manitoba put the complex into receivership, CFI had set up three logging camps, each with the capacity for 100 men, and had invested in 22 mechanical Treefarmer log skidders, not the ones recommended by foresters. The company hoped to cut down half a million cords of timber per year, half by its own cutters and half by contractors. [229] Many of the cutters were unfamiliar with the Manitoba Forest Regulations and much useable wood was left behind for cleanup. This woodcutting operation was shut down in April 1970, however. The small sawmill (30 million board feet) was producing only green lumber because the drying kilns were not ready. The pulp and paper mill was not built, although a site had been cleared.

The new temporary managers of the mill, Stothert Engineering, took over the task of completing the complex. The Woodland operation was soon up and running again. The costs of completing

the plant were underestimated, and even though the company produced sales of over $8 million from 44,500 tons of pulp and paper, and 25 million board feet of lumber, operating losses continued for 1971 and 1972.[230] The good news was that the high quality unbleached sack and multi-wall kraft paper produced at the plant was well received on the market.

In October 1973, CFI became a Crown Corporation called Manitoba Forestry Resources Ltd. Two important changes resulted: the increased employment of Metis and Aboriginal peoples, something that had been a government expressed objective from the very outset of the project, and an influx of new government money to upgrade the facility. From its inception, innovative European equipment was purchased by Dr. Kasser – a dry debarker, which cut down pollution; a froto pulper which reduced wood chips to fibre by rubbing the chips together and thus keeping the fibres intact for a stronger paper; and a flak dryer which used a cushion of air to dry the paper evenly. Now added to these were two kilns, new chipping equipment, and a new power boiler. The complex could produce 430 tons of pulp per day, a production level that made it competitive. Unfortunately, a recession caused the market to deteriorate and the pulp and paper and lumber mills had to be shut down temporarily, and the profits shown in its first two years soon disappeared. To improve its efficiency and financial position, the company diversified by adding a fence post plant to utilize the large stands of jackpine, and by producing bales of unbleached pulp for sale to other plants.

Once new government-financed roads had accessed forest resources, and made them available to the complex, an expanded plant was required. Because interest rates were very high, this expansion was very costly. By 1981, the mill was still not operating to capacity. A new manager was hired with a mandate to reorganize, recapitalize, and retrofit. The reorganization saw the Company President and Chairman move to The Pas and four new directorships created. Staff was cut by over 30%. Recapitalization finally freed the company of the $50 million debt it had carried since its inception.[231] Retrofitting was more complex.

Manitoba Forestry Resources, called Manfor after 1982, produced a high quality brown paper, made from the strong long fibres of the plentiful black spruce. But this became unprofitable because grocery stores were switching from paper to plastic bags, and bulk-shipping practices had reduced the number of industrial sacks needed. As well, the Canadian tariff of 15% on unbleached paper imports, was removed in the 1980s. Refitting efforts, estimated at $40 million, [232] entailed switching to the production of a new high quality unbleached kraft paper, called SPK, used for fertilizer and cement bags. Manfor purchased its main opposition, a company in Florida, and became the sole supplier of this product.

It was necessary to modernize the logging practices. Most of the logging was still done by cut and skid method. Manfor began to phase in mechanized harvesting methods. As the price of lumber rose, the sawmill became profitable.

Although the costs involved in refitting paid off, and Manfor showed profits in the 1ate 1980s, the Manitoba Government was anxious to divest itself of the Crown Corporation, and return The Pas enterprise to private ownership as had been the original intention at its inception in the 1960s. In May 1989, Repap Enterprises acquired the Manfor complex for $132 million. A Canadian company headquartered in Montreal, Repap made plans for a comprehensive development plan that included expanding the mill's capacity, installing environmentally friendly technology, and expanding harvesting and reforestation efforts. Twenty million dollars were spent on upgrading and on training local people in the required technology. The heavy kraft paper, called SPK, remained the company's main product. Although the company originally had planned to close the sawmill, changes in the lumbering scene across North America actually produced a larger market for Manitoba lumber. Repap's product, dried in one of the six kilns, was mould and insect resistant, strong and of sufficient quality to enable the company to produce and market 62 million board feet of kiln dried, planed lumber, in 1990.[233] The woods operation continued to grow, as the company's timber license was increased to 8.9 million hectares of Provincial Crown Land, of which 4.1 million hectares constituted productive forest land.[234] Allowed by Manitoba Government

regulations to cut two million cubic metres of softwood per year, Repap only cut 1.1 million cubic metres. [235]

In the woods, mechanical harvesting systems, using feller bunchers and grapple skidders, have replaced the old cut and skid practice. Chain saws have been replaced by one piece of equipment, which de-limbs, debarks, chips, and loads the product into truck units that haul the material directly to the plant. The impact on the forest is greatly decreased by the reduction in machines, men and roads that used to be needed to harvest a tree and remove it to the riverbank.

In 1997, Repap sold its complex in The Pas to Tolko Industries Ltd. Founded in 1961, Tolko is headquartered in Vernon, B.C. and is involved in manufacturing solid wood, paper and panel products. What it acquired from Repap was a 165,000 metric tonne pulp and kraft mill, a 100 million fbm sawmill and extensive timberlands, all of which fit nicely into its previous holdings. The company divided the two operations into two decentralized business units: one called the Solid Wood Business Unit and the other the Kraft Paper Business Unit. Both divisions continue to work closely with each other, and both have undergone a major capital upgrade.[236]

VI. MANITOBA'S FOREST INDUSTRY TODAY

Manitoba's forests will probably never again support the magnitude of cutting that occurred at the turn of the 19th century, when most of the accessible quality timber was harvested. It will take hundreds of years to replace it. The remaining forests, located predominantly in central Manitoba, consist of spruce, tamarack, and birch. These are presently being harvested by Tolko to supply their kraft paper and lumber complex at The Pas. Their cutting area is vast, dwarfing the combined timber berths of all the loggers in the historical period.

In the Swan River Valley, another large complex, owned by the American giant, Louisiana Pacific, is producing strand board from trembling aspens, which today are the predominant species in the Duck Mountain and Porcupine Forest Reserves. Their cutting rights are on Crown Lands throughout the region. Pulpwood, cut at substantial distances, is shipped, mostly by truck, to the processing plant at Minitonas.

In eastern Manitoba, and the areas bordering Lake Winnipeg, the cutting rights belong to the Pine Falls Paper Company. Pulpwood is cut in provincial parks and forest reserves, as well as other Crown Lands, to supply this plant. The logs are brought to the mill by water, railway and road transport, to be manufactured into paper.

These three big complexes in Manitoba are all operated by large corporations, which have similar operations elsewhere in North America and/or Europe. The companies use products from Manitoba forests to compliment goods they produce at other plants located half a continent away. This is representative of the global economy into which the Manitoba forest industry must fit to exist at all. Several times in the past two decades, down turns in the world market have resulted in lay-offs in local plants.

There are still small operators in Manitoba forests. These are companies with a specialty product, such as treated fence posts, or plywood. Many buy their timber supply from the three big corporations who sell stands of timber from their cutting areas that are not suitable for manufacturing their primary product. Others, like Spruce Products, which has a plant in Swan River, have small timber berths. They also purchase timber from Louisiana Pacific.

During the 1970s, the idea of managing forests to ensure the future of the timber industry became important. Manitoba developed a 20-year forest management plan, as a blueprint for forest utilization, industrial development, and forest management. In its original agreement with Churchill Forest Industries (CFI) in 1967, the Manitoba Government assumed responsibility for reforestation. That meant money had to be voted for that purpose every year and estimating the amount needed was difficult. In 1979, a deal with Abitibi-Price of Pine Falls saw half the stumpage fees paid by the company allotted to reforestation. The work was done by Abitibi-Price, with approval from the Department of Natural Resources. After the work was inspected, the money from the reforestation fund was paid to the company. In 1984, a similar deal was worked out with Manfor (successor to CFI). Manfor was to take responsibility for regenerating 80% of the area harvested each year within a seven-year period. The burden of protecting the industry's future thus passed from the government to the corporation.

There remained the problem of how to regenerate the forests that had been cut prior to 1980. Also in need of reforestation were the thousands of acres decimated by forest fires, an amount much higher than the acres cut by Manfor and Abitibi-Price. Under a Canada/Manitoba Forest Renewal Agreement, to run from 1984-1989, funding worth $27.2 million was provided for additional forestry renewal. After public discussions, the Forest Ministers from all the Provinces joined to create a new national strategy regarding forests. The Canadian Department of Forestry was created, in 1989, with sustainable development as its guiding principle. The corporations were brought onside as sustainability became part of the public domain.

In 1994, the Standing Committee on Natural Resources of the House of Commons released its report on clear cutting – the process whereby all the timber in an area is totally removed, thus denuding the landscape. The report concluded that clear cutting is a method ecologically suitable to most types of forests in Canada. The present big companies in Manitoba are allowed to practice clear-cutting. They make a variety of clear cuts, leaving strips between the cut blocks and buffer zones along the watercourses and roads. These variations are intended to protect the ecological balance of waterways and wild life in the region.

Today, a company cutting in Manitoba's forests must sign a Forest Management Area agreement with the Manitoba Government before it receives a license. This Forest Management Plan describes timber harvesting, access development and forest renewal activities planned on the Forest Management License area, and requires approval from Manitoba Conservation. It also requires a separate Environmental Impact Statement to be submitted to Manitoba Conservation.

VII. CONCLUSIONS

During the decades from 1880 to 1960, lumber companies, large and small, harvested the timber resources that had been maturing in Manitoba for hundreds of years. This economic undertaking coincided with, and aided in, the development of this province from a small settlement along the Red and Assiniboine rivers to a territory covering 650,087 square kilometres with a population of 921,685 in 1960.[237] During those years Manitoba's infrastructure - railways, roads, bridges, grain elevators, warehouses, churches, schools, universities, public buildings, mines – was created. Added to this were all the farm buildings in southern Manitoba and the homes and mercantile establishments in Manitoba's many service centres. This amount of construction entailed vast amounts of building products, many processed from Manitoba's own forests.

The development of the lumber industry had many spin-offs. For example, the Lake Winnipeg trade required schooners and barges to transport the logs to Selkirk. A boat-building industry developed along Lake Winnipeg and this, in turn, supplied boats for the fishing industry. Crates and boxes were needed to haul the fish catch to market, so box factories sprung up in the lake communities. In small towns, the smaller sawmills created the lumber for local buildings. More importantly, the sawmills and logging camps created winter employment opportunities for many farmers. The cash they earned there gave them the capital to transform their homesteads into farms.

The lumber industry received its jump-start from Winnipeg's first growth spurt in 1880, but it was the railway era that ushered in the glory days for lumbermen. Railway building required timber for ties and trestles. Once completed, the railroads could take the finished lumber products to market. Driving logs down Manitoba's numerous rivers to sawmills was only the first step in lumber production. The same transportation method could not be used for planed boards. The Manitoba and Southeastern Railway brought large amounts of lumber from the Lake of the Woods area to Winnipeg, just as the Canadian Northern Railway, two decades later, carried T.A.Burrows' finished product from the Duck and Porcupine mountains to Winnipeg, and on to western cities. American lumbermen like Herman Finger waited for the development of, or negotiated for, railways to The Pas before they developed huge lumber complexes in that region.

While American lumbermen from Minnesota and Wisconsin did move into Manitoba once they had spent the timber resources of their home states, for the most part they did not arrive in Manitoba until the early 1900s. Other timber barons, like Duncan McArthur, Daniel Sprague, and T.A.Burrows were Canadians, and their impact on the industry was earlier and equaled that of the Americans.

While Manitoba's forests were valuable, they were limited and they could not sustain intensive logging for long. The illusion of limitless forests in the 1880s, however, led to careless logging operations with no thought of reforestation. This practice invited the specter of forest fires. Trees left on a timber berth were often destroyed by fire, especially in the dry years of the 1930s when devastating forest fires occurred. Much of the forest resources was therefore wasted.

Today, greater care is taken to control the harvesting of Manitoba's remaining forests. Companies working in the forest industry are required to sign agreements that detail plans for reforestation. Since the number of companies in the lumber industry has decreased substantially, such regulations are easier to enforce. Gone are most of the small portable mills cutting lumber for farmers with small cutting permits. Gone are the middle-sized operators like the Mutchenbaker Brothers who controlled timber berths totally 35-100 square miles. Gone are the larger logging, sawmilling and planing complexes owned by men like T.A.Burrows, who once controlled vast timber berths, spread across three sets of Manitoba's mountains in the parkland region. Their disappearance coincided with the disappearance of the large stands of spruce that could be transformed into quality lumber. Today, three large international companies share most of the

province's remaining timber resources, using them for producing paper, wafer board and some lumber.

What remains of the large lumber mills that once existed along Manitoba's major rivers and lakes? The large three-storey frame sawmill buildings, and smaller nearby buildings that housed planers, have all disappeared. Most were hastily erected of rough lumber and had little aesthetic value. Remnants of their foundations can be found in The Pas, Barrows, and Bowsman, and likely other isolated sites as well. These are generally overgrown with shrubs and tall grass and are only visible during the spring and fall. The large brick stacks of their incinerators have also been dismantled, leaving remnants of bricks where they once stood. An occasional auxiliary building, such as a machine or storage shed, or office, can be found in former sawmill communities, usually adapted for some subsequent use. Of these scattered relics, the most complete set of foundations is located in the small lakeside community at Red Deer Lake.

The last remaining building of the former Red Deer Lumber Company, the planer, was bulldozed in the 1970s. A fieldstone vault, once part of the mill office, still stands at the entrance to the community. But the foundations scattered across several acres of land provide the outline of a former large sawmill operation. One can follow the imaginary path of timber as it was moved from the water in the bay, up the boom to the large sawmill building, about 200feet x 60 feet wide. The foundations on which the huge steam engines sat to produce power for the mill machinery stand uncrowned. Nearby sits the base of the huge brick refuse burner. Footings lead down to the lake and to the former planer site. When one looks out at the water it is easy to imagine the lake filled with logs awaiting their entry to the mill. One can visualize the nearby busy loading platform, with train cars being loaded with the finished product to be shipped southward. The large empty field at the edge of the community seems out of place until one is reminded that a large barn, used to stable the many horses employed in the lumber operation, once occupied the site.

Of the many companies and individuals who made their livelihoods or fortunes from Manitoba's forests in the boom years of 1880-1930, the name of T.A.Burrows is "writ large." His knowledge of forest potentials, whether gained through practical experience, inside information or by being in the right place at the right time, resulted in his developing large mills in the major forested areas of Manitoba. His largest impact was in the parkland region where he established mills in Garland, Grandview, Pine River, Bowsman, Birch River, and National Mills, progressing further northward as the resources of each area were depleted. All these mill sites led to the creation of communities that still exist today. The lumber industry, in a much-altered state, still provides employment in these communities, and in the parkland belt in general. There is no denying Burrows' impact on Manitoba's industrial development. His achievements as a lumber producer and retailer were capped in 1926 by his appointment as Lieutenant–Governor of Manitoba.

Remnants of the foundations that supported the steam engine used at the Red Deer Lumber Company mill at Red Deer Lake, 1998. Source: HRB.

Remnants of the stack used for heating the water to power the steam engine at the Red Deer Lake mill, 1998. Source: HRB.

Remnants of refuse stack used to burn the bark and trimmings at the Red Deer Lake mill, 1998. The fire transformed water into steam to power the sawmill. Source: HRB.

Remnants of cement footings along Red Deer Lake, 1998. Probably supported the jack ladder that carried the logs from the lake shore to the sawmill. Source: HRB.

Remnants of the planing mill at Red Deer Lake, 1998. The planing mill structure was bulldozed by staff from the Department of Natural Resources in the 1960s. Source: HRB.

The remains of the vault that once stood in the offices of the Red Deer Lumber Company, 1998. Source: HRB.

The vault remains and the empty field nearby that once held the huge horse barn of the Red Deer Lumber Company, 1998. Source: HRB.

BIBLIOGRAPHY

PRIMARY SOURCES

Hudson's Bay Company Archives. D. 20/16, D.20/18, D. 20/19, D.20/25, D. 20/28
Interviews, April 1998, with Barrows residents.
Manitoba Free Press
Nan Shipley Collection P5002, Files 8, 9
Scrapbooks, Legislative Library
Sessional Papers, Department of the Interior Annual Reports
Swan Valley Star and Times
The Brandon Sun, 75th Anniverary Issue. June 22, 1957.
Manitoba Department of Mines and Natural Resources, Forestry Branch, Timber Berth License Registers PAM.A0093

SECONDARY SOURCES

Abra, Marion.
A View of the Birdtail. 1974.
Clanwilliam History Book Committee.
Forest to Field, A History of the Rural Municipality of Clanwilliam and Village of Erickson. 1984.
Clear Creek Lake Audy History Committee.
Pioneers and Progress along the Clear Creek. 1984.
Collier, Anne.
Portage la Prairie. 1970.
Community Centre Committee.
Tent Town, 1898-1979: A History of Minitonas and District. 1979.
Crossley, Watson.
"Grandview – Duck Mountain - T.A.Burrows History."Unpublished Report, HRB files.
Dauphin Historical Society.
Dauphin Valley Spans the Years. 1970.
Dick, Lyle.
"T.A.Burrows: Timber Baron of the Northwest," HRB unpublished Report, 1976.
Dobbyn, Ed.
"Swan River Logging and Lumbering."Unpublished manuscript. 1978. PAM.MG9 A105.
Donaldson, Bruce.
York Factory: A Land-Use History. Parks Canda Manuscript. No. 444. 1981.
Eden-Birnie History Book Committee.
East of the Mountain, Eden-Birnie Story 1877-1984. 1984.
Edge, Fred. *The Iron Rose*. 1992.
Enns, Gerhard.
"Eastern Lake Planning District," HRB Unpublished Report, 1983.
Francis, J.D.
Western Retail Lumbermen's Association,75 Years. Calgary. 1965.
Garland History Book Committee.
In Memory of Our Pioneers, A History of Garland and District, 1874-1985. 1986.
Gerrard, Nelson.
Icelandic River Saga. 1985.
Hadashville Women's Institute.
A Packsack of Seven Decades. 1970.
Hambley, George. *The Last of the Pioneers*. 1971.
Hume, Mary.
Brandon: A Prospect of a City. 1981.

Mathias, Phillip.
Takeover. 1976.
McCarthy, Martha.
Harvesting the Northern Forests: *A History of the Forest Industry in The Pas and Area*. 1997.
McQueen, Elwood.
Profile of the Town of Grandview. 1989.
Nicholson, Karen.
"A Review of the Heritage Resources of the Russell-Binscarth Planning District." HRB Unpublished Report, 1986.
Nicholson, Karen.
"A Review of the Heritage Resources of the Roblin Planning District." HRB Report, 1985.
Neiderheiser, Clodaugh M.
"Forest History Sources of the United States and Canada," Forest History Foundation Inc., St. Paul, 1956
Norsundal Cultural Group.
Yesterday's Dreams Today's Memories. Dallas, Mb., 1985.
Pioneer History Book Committee.
McMunn, East Braintree and Glenn Pioneer History. 1989.
Porth, Bob, and MacKenzie, Craig, ed.
Trails to Rails to Highways. A History of the Rural Municipality of Whitemouth. 1979.
Potyondi, Barry.
Selkirk: The First One Hundred Years. 1982.
Preston, Emily, ed.
Pioneers of Grandview and District. 1976
Repap Enterprises Inc.
Annual Report, 1994 Competing in the Global Marketplace.
Riding Mountain and Area History Book Committee.
History of the Riding Mountain Area. 1984.
Ringstrom, Emma.
Riding Mountain Yesterday and Today. 1981.
Rossburn History Club.
On the Sunny Slopes of the Riding Mountains, A History of Rossburn and District. 1984.
Sandy Lake Historical Society.
Sandy Lake, Our Roots. 1984.
Senior Citizens Historical Society.
Logs and Lines from the Winnipeg River: A History of the Lac du Bonnet Area. 1980.
Sharpe, Alice, ed.
Bowsman's History: Through the Years. 1977.
Somers, J.G.
"History of Forest Legislation Re Timber Disposal – Manitoba." MG9A 14-2 PAM.
St. Clements History Book Committee.
East Side of the River: The R.M. of St. Clements. 1983.
Steen and Bryce.
Portage la Prairie, Manitoba and Her Industries. 1882.
Stokes, Kathy Rooke.
Wood, Lumber and Boardrooms. 1987.
Swan River Valley History Book Committee.
80 Years in the Swan River Valley. 1978
Swan Valley Historical Society. *Lasting Impressions, Historical Sketches of the Swan River Valley*. 1984.
Taylor, C.J.
"A Brief Overview of the Development of the Pulp and Paper Industry in Canada to 1930," Historic Sites and Monuments Board of Canada Agenda Paper. 1983-20.
Thompson, Steinn.
R*iverton and Icelandic Settlement*. 1976

Welch, Deborah,
"A History of the Lumber Industry in Manitoba." HRB Unpublished Report, 1980.
Welch, Deborah.
"T.A.Burrows Lumber Company Mill, Grandview, Manitoba, 1903-1919," HRB Unpublished Report, 1981.
Westbourne-Longbourne History.
When the West Was Bourne, A History of Westbourne and District, 1860-1985. 1985.
Winnipegosis History Book Committee.
Reflections from Little Muddy River, A History of Winnipegosis. 1990.
Winnipeg River Historical Project Committee
From the Falls to the Beaches: A Winnipeg River – Lake Winnipeg Heritage. 1989.

END-NOTES

[1] Sessional Papers, Department of Interior Annual Report, 1901.
[2] Deborah Welch, "A History of the Lumber Industry in Manitoba," (HRB Unpublished Report, 1980) p. 12.
[3] Ibid., p.9.
[4] J.G.Somers, "History of Forest Legislation Re Timber Disposal – Manitoba," (MG9A 14-2 PAM).
[5] Martha McCarthy, *Harvesting the Northern Forests: A History of the Forest Industry in The Pas and Area.*,(1997) p. xii.
[6] Rossburn History Club,On the Sunny Slopes of the Riding Mountains, A History of Rossburn and District (1984), p. 239.
[7] Karen Nicholson, "A Review of the Heritage Resources of the Roblin Planning District" (HRB Report, 1985) p. 54.
[8] Watson Crossley, "Grandview – Duck Mountain - T.A.Burrows History,"(Unpublished Report, HRB files.)
[9] Prof. Tim Ball's research, reported in Val Werier's column, *Winnipeg Tribune*, Feb. 1987.
[10] Bruce Donaldson, *York Factory: A Land-Use History*, (Parks Canada Manuscript No. 444, 1981), p. 11.
[11] A.McDonald to J.A.Grahame, February 9,1881, HBCA, D.20/18, fo. 170d-171.
[12] Ed Dobbyn, "Swan River Logging and Lumbering," (Unpublished manuscript, 1978, PAM.MG9 A105).
[13] Alice Sharpe, ed. *Bowsman's History: Through the Years* (1977) p.160.
[14] Interview, Stanley Andrewchuk, Barrows, Manitoba, April 9, 1998.
[15] Canada House of Commons, Debates and Proceedings, 1907-08 Session, vol., Jan 21,1907. P.1833.
[16] J.D.Francis, *Western Retail Lumbermen's Association, 75 Years* (Calgary, 1965) p.3.
[17] Ibid.
[18] Emily Preston, ed. *Pioneers of Grandview and District*, (1976) p.239.
[19] J.D.Francis, Op.Cit.
[20] Ibid.
[21] Dauphin Historical Society, *Dauphin Valley Spans the Years* (1970) p.243.
[22] Le Site Historique Lagimodiere Gaboury Homestead, Oct. 1999, (draft report), p.20.
[23] Welch, Deborah, Op. Cit., p. 4.
[24] Sessional Papers, Department of Interior Annual Report, 1882, p.13.
[25] Sessional Papers, Department of the Interior, Annual Report, 1883, p.27.
[26] Deborah Welch, Op. Cit. p.6.
[27] Ibid., p.10, from Ruben Bellan's *Winnipeg's First Century*.
[28] Ibid., p.12.
[29] Lyle Dick, 'T.A.Burrows: Timber Baron of the Northwest"(HRB, 1976).
[30] *Manitoba Free Press*, March 1, 1881, p.1.
[31] HBCA D.20/28R.Ross to J.A.Grahame, March 27, 1884, fo.253.
[32] HBCA, D. 20/25 R.Ross to J.A.Grahame, January 3, 1883.
[33] Lyle Dick, Op. Cit.
[34] Sessional Papers, Department of Interior Annual Report, 1882.
[35] Norsundal Cultural Group, *Yesterday's Dreams Today's Memories* (1985) p.2.
[36] Sessional Papers, Department of Interior Annual Report, 1880.
[37] Norsundal Cultural Group, Op. Cit., p.2.
[38] Steen and Bryce, *Winnipeg, Industries*, (Winnipeg, 1882) p.47.
[39] Gerhard Enns, "Eastern Interlake Planning District," (HRB, 1983) p.135.
[40] Ibid.
[41] Steinn Thompson, *Riverton and the Icelandic Settlement*, (1976), p. 76.
[42] Ibid.
[43] Ibid., p.101.
[44] Nelson Gerrard, *Icelandic River Saga*, (1985), p.80.
[45] Steinn Thompson, Op. Cit. p.79-80.
[46] Nelson Gerrard, Op. Cit., p.80.
[47] Steinn Thompson, *Riverton and the Icelandic Settlement*,p.164.

[48] Ibid., p.165
[49] Ibid., p.166.
[50] Nelson Gerrard, Op. Cit., p. 82-3; Steinn Thompson, Op. Cit., p.173.
[51] Ibid., p.83.
[52] Gerhard Enns, Op. Cit., p. 90.
[53] St. Clements History Book Committee, *East Side of the River: The R.M. of St. Clements*, (1983), p. 59.
[54] Barry Potyondi, *Selkirk The First One Hundred Years*, (1982), p.44.
[55] Ibid., p.49.
[56] Lyle Dick, Op. Cit..
[57] Manitoba Department of Mines and Natural Resources, Forestry Branch, Timber Berth License Registers, Set 1, Book 5, 1916-1921.
[58] Pioneer History Book Committee, *McMunn, East Braintree and Glenn Pioneer History*, (1989), p.46.
[59] Ibid., p. 73 "Report by Edward Parnell, 1921."
[60] Fred Edge, *The Iron Rose*, (1992), p.154.
[61] *Manitoba Free Press*, 1 March, 1881, p.1.
[62] Bob Porth and Craig MacKenzie, ed. *Trails to Rails to Highways, A History of the Rural Municipality of Whitemouth*, (1979) p. 42.
[63] Sessional Papers, Department of Interior Annual Reports, 1883, p.138.
[64] Sessional Papers Department of Interior Annual Reports, 1900 No. 13, p. 85.
[65] Ibid., 1901, p.31.
[66] Bob Porth and Craig MacKenzie, ed. Op. Cit., p.7.
[67] Sessional Papers, Op. Cit., 1901 No.25, p.84.
[68] Pioneer History Book Committee, Op. Cit., p.33-4.
[69] Ibid., p. 244.
[70] Ibid., p. 43.
[71] Ibid., p. 56.
[72] Eleanor Stardom, "Some Aspects of the Economical Development in the Lac du Bonnet Area," in Senior Citizen Historical Society, *Logs and Lines From the Winnipeg River*, (1980), p.164-65.
[73] Kathleen Rooke Stokes, *Wood. Lumber and Boardrooms*, (1987), p.83.
[74] Sessional Papers, Op. Cit., 1900, No. 13, p.85.
[75] Sessional Papers, Op. Cit., 1901, No. 25, p. 31.
[76] Ibid.
[77] Sessional Papers, Op. Cit.,1901-1909.
[78] Sessional Papers, Op. Cit.,1906, No. 25, p.91.
[79] Kathleen Rooke Stokes, Op. Cit., p.83.
[80] Ibid., p..139-40.
[81] Henry Youle Hind, *Narrative of the Canadian Red River Exploring Expedition of 1857 and the Assiniboine and Saskatchewan Exploring Expedition of 1858*, (1971), p.81.
[82] HBCA, D.20-18, A.McDonald to J.A.Grahame, February 9, 1881, fo. 170d-171; Alex. Christie to J.A.Grahame, March 28, 1881, fo. 419d.
[83] HBCA D.20/19, A.McDonald to J.A.Grahame, June 24, 1881, fo. 394d.
[84] Emma Ringstrom, *Riding Mountain Yesterday and Today*, (1981) pp. 35-6.
[85] Clanwilliam History Book Committee, *Forest to Field, A History of the Rural Municipality of Clanwilliam and Village of Erickson*, (1984), p.90; Sandy Lake Historical Committee, *Sandy Lake, Our Roots*, (1984), p.53.
[86] Sandy Lake Historical Committee, Op. Cit., (1984), p.53; Clear Creek Lake Audy History Committee, *Pioneers and Progress Along the Clear Creek*, (1984), p. 41.
[87] Rossburn History Club, *On the Sunny Slopes of the Riding Mountains*, (1984), p.242: and Marion Abra, *A View of the Birdtail*,(1974) p.38.
[88] Marion Abra, Op. Cit., p. 38.
[89] Ibid., p.47.
[90] *Manitoba Free Press*, March 1,1881, p.1.
[91] Clear Creek Lake Audy History Committee, Op. Cit., (1984), p.34.
[92] George Hambley, *The Last of the Pioneers*, (1971) p. 113.
[93] Ibid., p. 310-313.

[94] Karen Nicholson, "A Review of the Heritage Resources of the Russell-Binscarth Planning District," (HRB Unpublished Report, 1986) p.64-65.
[95] Dauphin Historical Society, *Dauphin Valley Spans the Years*, (1969), p. 216.
[96] Sessional Papers, Op. Cit., No. 25, 1901-1909.
[97] Sessional Papers, Op. Cit., No. 14, 1909, p.67.
[98] Dauphin Historical Society, Op. Cit., p. 216.
[99] Emma Ringstrom, Op. Cit., p.38.
[100] Sandy Lake Historical Society, Op. Cit., p.338.
[101] Clear Creek Lake Audy History Committee, Op. Cit., p.35.
[102] Emma Ringstrom, Op. Cit.,p. 39.
[103] Rossburn History Club, Op. Cit., p. 244-46.
[104] Ibid., p.256.
[105] *Manitoba Free Press*, 1 March, 1888, p.1; Eden – Birnie History Book Committee, *East of the Mountains, Eden-Birnie Story*, (1984), p.237.
[106] Sessional Papers, Op. Cit., 1881, p. 60.
[107] Riding Mountain and Area History Book Committee, *History of Riding Mountain Area*, (1984), p.46.
[108] Ibid., pp.43- 45.
[109] Deborah Welch, Op. Cit. p. 10.
[110] *The Brandon Sun*, 75th Anniversary Edition, June 22, 1957, p. B10 "Hanbury Mills Played Leading Role."
[111] Sessional Papers, Op. Cit., 1902, p.98-99.
[112] Karen Nicholson, "A Review of the Heritage Resources of Roblin Planning District," Op. Cit., p.59; Mary Hume, *Brandon, A Prospect of a City*, City of Brandon, (1981), p. 61.
[113] Sessional Papers, Op. Cit., 1902, p.92; 1903, p. 92

[114] Robert Bell, "Report on the Country West of Lake Manitoba and Winnipegosis with Notes on the Geology of Lake Winnipeg," dated February 18, 1875, in Geological Survey Board of Canada, *Report of the Progress for 1874-75*, (Ottawa, 1876), p.40.
[115] Westbourne-Longbourne History, When the West Was Bourne: A History of Westbourne and District, (1985), p.396-97.
[116] *Manitoba Free Press*, March 1,1881, p.1.
[117] HBCA, D.20/16, Report of William Clark, Junior Chief Trader at Oak Point to Commissioner Grahame, fo. 255-256.
[118] Westbourne-Longbourne History, Op. Cit., p.83.
[119] Winnipegosis History Book Committee, *Reflections from Little Muddy River, A History of Winnipegosis*, (1990), p.47-48.
[120] Ibid., p.48.
[121] Ibid.
[122] Manitoba Department of Mines and Natural Resources, Forestry Branch, Timber Berth License Registers, Set 1, Book 5, 1916-1921.
[123] Winnipegosis History Book Committee, Op. Cit., p.49.
[124] Karen Nicholson, "A Review of the Heritage Resources of Roblin Planning District," Op. Cit., p.52.
[125] Deborah.Welch, "T.A.Burrows Lumber Company Mill, Grandview, Manitoba 1903-1919", (HRB Unpublished Report, 1981), p.2.
[126] Ibid.
[127] Garland History Book Committee, In Memory of our Pioneers, History of Garland and District, 1874-1985, (1985) p.13.
[128] Lyle Dick, "T.A.Burrows: Timber Baron of the Northwest", (HRB Unpublished Report, 1976).
[129] Deborah Welch. "T.A Burrows Lumber Company Mill, Grandview, Manitoba," Op. Cit., p.6.
[130] Lyle Dick, Op. Cit.
[131] Sessional Papers, Op. Cit., 1905.
[132] Ibid., 1904.
[133] Garland History Book Committee, Op. Cit., p.13.
[134] *Grandview Exponent*, March 27, 1903.

[135] Lyle Dick, Op. Cit., taken from *Grandview Exponent*, March 18, 1904; Sessional Papers, Op. Cit., 1904, p. 92.
[136] Watson Crossley, "Grandview-Duck Mountain Area-T.A.Burrows History," (Unpublished Report HRB files.)
[137] Watson Crossley, "Notes re: Duck Mountain" pp. 1-2, cited in Deborah Welch, "T.A.Burrows Lumber Company Mill, Grandview," Op.Cit., p. 12.
[138] Watson Crossley, Op. Cit.
[139] Op. Cit.
[140] Deborah Welch, "T.A.Burrows Lumber Company Mill, Grandview," Op. Cit., p.12.
[141] Ibid., p. 13-14.
[142] Elwood McQueen, in Profile of the Town of Grandview, (1989).
[143] Sessional Papers, Op,. Cit., 1914.
[144] Ibid.
[145] Alice Sharpe, ed. Op. Cit, p.159.
[146] Ernest A.Koons, "Reminiscences of a District Forester," p.11, MG9 A12, PAM cited in Lyle Dick, Op. Cit.
[147] Swan Valley History Book Committee, *80 Years in the Swan River Valley*, (1978), p.193.
[148] Alice Sharpe, ed. Op. Cit., p.161.
[149] "Shades of the Past", *Swan Valley Star and Times* undated clipping.
[150] Alice Sharpe, ed. Op. Cit., p.161.
[151] Swan Valley Historical Society, *Lasting Impressions, Historical Sketches of the Swan River Valley*, (1984), p.216.
[152] Alice Sharpe, ed. Op.Cit., p.163.
[153] Ibid.
[154] Swan Valley Historical Society, *Lasting Impressions, Historical Sketches of the Swan River Valley*, Op. Cit., p. 217.
[155] Manitoba Department of Mines and Natural Resources, Forestry Branch, Timber Berth License Registers, Set 3, Books 3 and 4.
[156] Ibid., Set 1, Book 7.
[157] Interview, Lawrence Zastre, Barrows, April 9, 1998.
[158] Nan Shipley Collection P5002 f. 9, p.47.
[159] Ibid., p.50.
[160] Alice Sharpe, Op. Cit., p.104.
[161] Ibid., p.104.
[162] Emily Preston, *Pioneers of Grandview and District*, (1976) p. 200.
[163] Ibid., p. 36.
[164] Community Centre Committee, *Tent Town 1898-1979*, (1979) p.299.
[165] Ibid., p. 316.
[166] Ibid., p.324.
[167] Karen Nicholson, "A Review of the Heritage Resources of the Roblin Planning District,"Op.Cit., p.55.
[168] Ibid., p.56-7.
[169] Sessional Paper No.25, XLVI No. 17 (1912) Department of the Interior, Dominion Lands, Report of Inspector of Crown Timber Agencies, E.F.Stephenson to J.W.Greenway, Commissioner of Crown Lands, 12 June, 1911, cited in Martha McCarthy, *Harvesting the Northern Forest*, (1997), p.15.
[170] Manitoba Department of Mines and Natural Resources, Forestry Branch, Timber Berth License Registers, Set 1, Bk 3.
[171] Ibid., Set 3, Bk 4 and 5.
[172] Ibid., Set 1, Bk.3, 1905-1909.
[173] Swan Valley Historical Society, *Lasting Impressions, Historical Sketches of the Swan River Valley*, (1984), p.193.
[174] Manitoba Department of Mines and Natural Resources, Op. Cit., Set 1, Book 5.
[175] Swan Valley Historical Society, *Lasting Impressions*, Op. Cit., p.195.
[176] Ibid., p.196.
[177] Interview with Lawrence Zastre, Barrows, April 9, 1998
[178] Martha McCarthy, Op.Cit., p.30.

[179] Swan Valley Historical Society, *Lasting Impressions*, Op. Cit., p.195: Interview with Lawrence Zastre, Barrows, April 9, 1998.
[180] Ibid.
[181] Manitoba Department of Mines and Natural Resources, Forestry Branch, Timber Berth License Registers, Set 1 Book 4, 1909-1916.
[182] Ibid., Book 6, Set 1 1921-1926.
[183] Interview, Lawrence Zastre, Op. Cit.
[184] Martha McCarthy, Op. Cit., p.30.
[185] Interview, Lawrence Zastre, Op. Cit.
[186] Martha McCarthy, Op. Cit., p.28.
[187] Ed Dobbyn, "Swan River Valley Logging and Sawmills," PAM MG9, A105, p. 3.
[188] Undated clipping from *Swan Valley Star and Times*.
[189] Sessional Papers, Op. Cit.,1906, No. 25 p.91.
[190] Sessional Papers Op. Cit., 1908, No. 25. p.50-51.
[191] Ibid.
[192] Sessional Papers, Op. Cit.,1909, No. 25, p.67.
[193] Sessional Papers, Op. Cit., 1917-1918, K193.
[194] Martha McCarthy, Op. Cit., p.10-11.
[195] Ibid., p.19.
[196] Ibid., p.21.
[197] Ibid.
[198] Ibid., p.22.
[199] Ibid.
[200] Ibid.
[201] Ibid., p.28.
[202] Ibid.
[203] Ibid., p. 30.
[204] Ibid.
[205] Ibid., p.32.
[206] Ibid., p.34.
[207] Ibid., p.33.
[208] Ibid., p.35.
[209] Ibid., p.36.
[210] Ibid., p.29.
[211] Ibid., p. 36.
[212] Ibid., p.37.
[213] C.J. Taylor, "A Brief Overview of the Development of the Pulp and Paper Industry in Canada to 1930," Historic Sites and Monuments Board of Canada Agenda Paper. 1983-2 , p. 303.
[214] Steen and Boyce (Comp.) *Brandon, Manitoba and Her Industries*, 1882, p.41.
[215] Anne Collier, *Portage la Prairie*, (1970), p.69.
[216] Steen and Boyce, (Comp.) *Portage la Prairie, Manitoba: and Her Industries*, (Winnipeg, March, 1882), p.20.
[217] Anne Collier, Op. Cit., p.51, 69.
[218] Stein and Boyce, Op. Cit., p.25; C.J.Taylor, Op. Cit., p.309.
[219] Winnipeg Free Press August 25, 1928 in Scrapbook M8, p.230.
[220] Ibid.
[221] Scrapbook M8, p. 174, May 31,1926.
[222] Winnipeg River Historical Project Committee, *From the Falls to the Beaches: A Winnipeg River – Lake Winnipeg Heritage*. (1989) p.117.
[223] Philip Mathias, *Takeover*, MacLean-Hunter Ltd. Toronto, (1976) p.181-182.
[224] Ibid.,p.194.
[225] Winnipeg River Historical Project Committee, Op.Cit., p.117.
[226] Scrapbook, M16, p.173, *Winnipeg Tribune*, May 5, 1965.
[227] Winnipeg River Historical Project Committee, Op. Cit., p. 122.
[228] Martha McCarthy, Op. Cit., p.57.

[229] Ibid., p.61.
[230] Ibid., p.62.
[231] Ibid., p.68.
[232] Ibid.
[233] Ibid., p. 74.
[234] "Competing in the Global Marketplace," Repap Enterprises Inc. Annual Report 1994.
[235] Martha McCarthy, Op. Cit., p.74.
[236] Tolko 1997 Annual Review; *Circular Tolko*, Volume 14 No.2 March/April 1999.
[237] *Canadian Encyclopedia*, Edmonton, Vol. 2, p. 1294.