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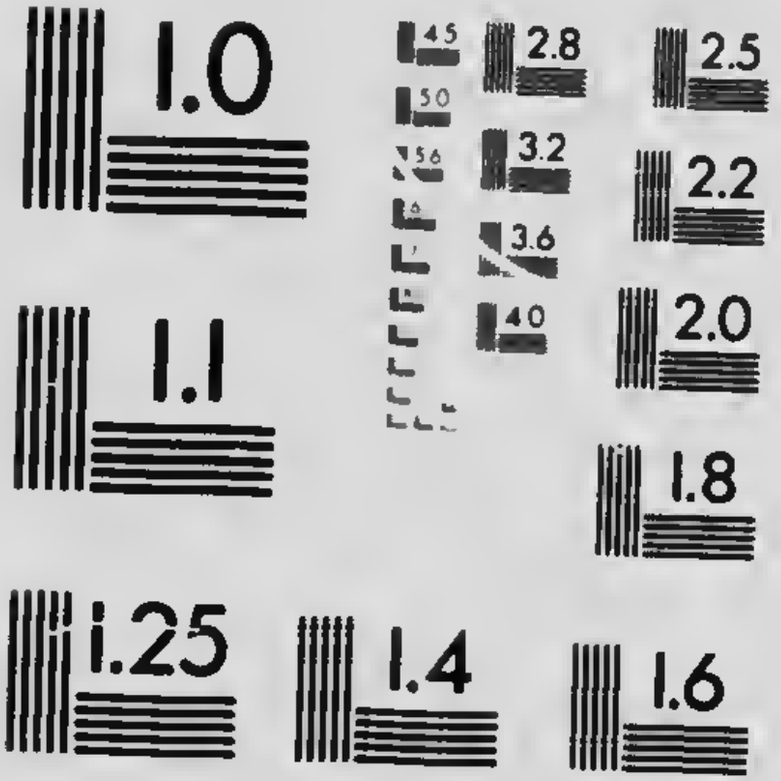

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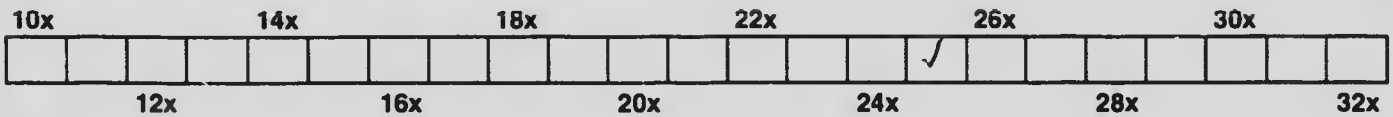

VEHICLES—*Continued*

Patterson, Joseph, Buckingham.
Paquette, W., La Patrie.
Payette, Oscar, Varennes.
Pepin, G. E. N., Drummondville.
Perron, Narcisse, Montauban—Repairs.
Plaisance, George E., Cookshire.
Ploude, Elisée, Ste. Lucie.
Plouffe, Frs., St. Jude.
Poirier, A., 1581 St. James, Montreal.
Poirier, Fidèle, Valleyfield.
Poitras, Joseph, Mont Louis—Repairs.
Pollock, W. J., Mille Isles.
Portelance, A., Ste. Anne de Bellevue.
Prangley, Frank, Bury.
Presse, Alfred, Ste. Emélie de Lotbinière.
Prevost, Chas., Bergerville, Bruchesi (Pontiac Co.)
Pouliot, J. R., Lyster Station—Repairs.
Quintal, Omer, 74 Papineau, Montreal.
Racicot, F. X., Boucherville.
Racine, E., St. Honoré—Repairs.
Rainville, A., St. Césaire.
Ray, A., Cournoyer.
Remière, W., Hunterstown.
Rhéaume, A., Pike River.
Rivard, Aimé, Lotbinière.
Riverin, Gustave, La Malbaie—Repairs.
Roberge, J. A., Mansonville.
Robichaud, Alexander, Bécancour.
Rousseau, E., St. Stanislas de Champlain.
Roux, J. A., Gentilly.
Roy, Chas., St. Félicien.
Roy, J. C., 197 Island, Montreal.
Roy, U. & Cie., Delormier, Montreal.
Ruelland, Jos., St. Roch, Quebec.
St. Amant, François, Pierreville.
St. Cyr M., St. Didace.
St. Jacques, H., Lachute.
St. Jean, Zotique, Rivière des Prairies.
St. Lawrence Wagon Co., Ltd., 34-36 King, Montreal.
St. Onge, Félix, St. Etienne des Grès.
St. Pierre, Alex., Box 264, Three Rivers.
Saulnier, Arsene, L'Anse au Foin.
Saulnier, F., Hebertville.
Séguin, Ovila, Ripon.
Sévigny, A. Sorel.
Scowen, Herbert, Bishop's Crossing.
Soucy, Mag., Grand'Mère Village.
Soule & Christie, Cowansville.
Stone, E., Waterloo.
Tardif, C., Wilson's Mills—Repairs.
Tardif, Eugène, Adstock.
Thibodeau, Henri, R. R. No. 2, St. Hermase.
Thurber, Jas., Lake Megantic—Repairs.
Torney & McNamara, Thurso—Repairs.
Toulouse, Jean, St. Georges Est—Repairs.
Tourigny, L., Davelnyville.
Tremblay, Ernest, Bagotville.
Tremblay, J. N., Jonquières.
Tremblay & Frère, St. Félicien—Repairs.
Trudeau Carriage Co., 266-68 Visitation, Montreal, Carriages, Sleighs & Automobiles.
Vachon, S., Beaurivage.
Vaillancourt, L., L'Islet.
Vallée, Octave, La Baie.
Venne, George, Ste. Anne des Plaines—Supplies.
Venne, Henri, Joliette.
Vincent, J. A. S., & Co., 307 Papineau, Montreal.
Watt, John, Aylmer.
Wilkins, W. F., Adamsville.
Wright & Co., Hull.

VENEER

Dominion Mahogany & Veneer Co., Ltd., Montreal.
Guelph Patent Cask Co., Ltd., Scotstown—Special Heading for Casks.

WOODENWARE

Audet, E. O., Victoriaville.
Babin, J. Philippe, Fauvel.
Belanger, J. T., Laval des Rapides.
Canadian Ingersoll-Rand Co., Ltd., Sherbrooke.
Champoux, Henri, Joliette.
Corbeil, J. T., Laurentides.
Crevier & Fils, 496 and 498 Clarke, Montreal.
Danville Mfg., Co., Ltd., Danville.
Davidson, Thos., Mfg. Co., Ltd., 187 Delisle, Montreal.
Demers Clothespin Mfg. Co., Drummondville.
Disraeli Box Co., Disraeli.
Dominion Textile Co., Ltd., Magog.
Dusablon, The Joseph Roger, Co., Ltd., St. Tite.
Eddy, E. B., Co., Ltd., Hull.
Gignac, J. H., 142 de l'Eglise, Quebec.
Gossum, J. A., Drummondville.
Goulet, D., Lake Megantic.
Guertin & Bouchard, 410 Parthenais, Montreal.
Guilmette, Jos., St. Félicien.
Hayes, Joseph, Shigawake—Tubs.
Hayes, J. B., 9 Bleury, Montreal.
Larouche, Armand, & Hippolyte, Metabetchouan.
Leblanc, J. A., Nicolet.
Megantic Broom Mfg. Co., Ltd., Lake Megantic—Clothes-pins.
Millette & Son, Lawrenceville.
Perreault, J. M., Beloeil Village.
Pilon, Joseph, Hull.
Quintin, J. B., Marieville.
Richard, A., St. Denis, River Richelieu.

WOOD-PULP, MECHANICAL AND CHEMICAL

Belgo-Canadian Pulp and Paper Co., Ltd., Shawinigan Falls—Ground-wood Pulp and Sulphite Fibre.
Brompton Pulp and Paper Co., Ltd., Bromptonville and East Angus—Ground-wood Pulp and Sulphate Fibre.
Brown Corporation, La Tuque (office, Portland, Maine)—Sulphate Fibre.
Canada Paper Co., Ltd., Windsor Mills—Ground-wood Pulp and Soda Fibre.
Chicoutimi Pulp Co., Chicoutimi and Ouiatchouan Falls—Ground-wood Pulp.
Donnacona Paper Co., Donnacona—Ground-wood Pulp and Sulphite Fibre.
Dominion Paper Co., Kingsey Falls (office Montreal)—Ground-wood Pulp and Sulphate Fibre.
Eddy, E. B., Co., Ltd., Hull—Ground-wood Pulp and Sulphite Fibre.
Gulf Pulp and Paper Co., Clarke City—Ground-wood Pulp.
Jacques Cartier Pulp and Paper Co., Pont Rouge (office Montreal)—Ground-wood Pulp.
Lake Megantic Pulp Co., Lake Megantic—Ground-wood Pulp.
Laurentide Co., Ltd., Grand'Mère—Ground-wood Pulp and Sulphite Fibre.
Lotbinière Lumber Co., Nicolet Falls (formerly Nicolet Falls Pulp and Lumber Co.)—Ground-wood Pulp.
Maclaren, James, Co., Ltd., Buckingham.—Ground-wood Pulp.
Nairn Falls Power and Pulp Co., Murray Bay (formerly East Canada Power and Pulp Co.)—Ground-wood Pulp.
News Pulp and Paper Co., Ltd., St. Raymond—Ground-wood Pulp.
Price Brothers and Co., Ltd., Kenogami and Jonquière—Ground-wood Pulp and Sulphite Fibre.
Price-Porritt Pulp and Paper Co., Rimouski—Ground-wood Pulp.
Rivière du Loup Pulp Co., Ltd., Fraserville—Ground-wood Pulp.

WOOD-PULP, MECHANICAL AND CHEMICAL—*Continued*

St. Lawrence Pulp and Lumber Corporation, Chandler (office Chicoutimi)—Sulphite Fibre.
St. Maurice Paper Co., Ltd. (formerly Grès Falls Co.), Cap Magdeleine—Ground-wood Pulp.
Soucy, F., Old Lake Road—Ground-wood Pulp.
Wayagamack Pulp and Paper Co., Ltd., Three Rivers—Sulphate Fibre.
Wilson, J. C., Ltd., St. Jérôme—Ground wood Pulp.

MISCELLANEOUS

Alleyn, John, 225 St. Paul, Quebec—Tents, Awning Poles.
American Broom Works, St. Basile—Brooms.
Austin & Laverty, 1 St. Paul, Montreal—Brooms.
Blais, G., Co., Ltd., St. Euphémie—Shims.
Bordeas, Frédéric, St. Hyacinthe—Spinning-wheels.
Canadian Match Co., Ltd., Drummondville—Matches.
Cantin, H. E., Belair—Evaporators.
Charland, A., 2107 Drolet St., Montreal—Slat Window Blinds.
Cloture, G., Loretteville—Snow Shoes.
Danville Mfg. Co., Ltd., Danville—Skewers, Clothes-pins.
Delfosse & Co., 247 Craig, Montreal—Fixtures.
Demers, Onésime, Parisville—Hames.
Demers Clothespin Mfg. Co., Drummondville—Coat-hangers, etc.
Fenderson, John, & Co., Sayabec—Dowels.
Gale, Geo., & Sons, Ltd., Waterville—Excelsior.

MISCELLANEOUS—*Continued*

Gendron, Joseph, Beauharnois—Decoy Birds, etc.
Giddings, Ltd., Granby—Baby Carriages.
Hayes, J. B., 9 Bleury, Montreal—Hat- and Cap-blocks, etc.
Hodgson, W. A., 40 Dufferin Sq., Montreal—Fancy Cases.
Jacques Cartier, La Cie., Quebec—Brooms.
Jones, F. W., Bedford—Bee Supplies.
Jutras, La Cie., Ltée, Victoriaville—Evaporators.
Lay Whip Co., Ltd., Rock Island—Whips.
Martin, C., 36-38 Craig, Montreal—Artificial Limbs.
Montreal Broom Mfg., Co., 821 St. Paul, Montreal—Brooms.
National Bridge Co. of Canada, Ltd., Montreal—Toeplates.
Naud, D., St. Marc des Carrières—Matches.
Paradis, A., St. André de Kamouraska—Spinning-wheels.
Paradis & Boisvert, 276 Craig, Montreal—Safe Fittings.
Parker, J. B., Dixville—Track Shims.
Paquette, Joseph, Co., 750, Lizotte, Montreal—Dry Goods Bolts.
Petrie, Alex., 13 St. James, Quebec—Tent Pegs.
Pilon, Joseph, Hull—Tent Pickets, etc.
Poirier, E., Valleyfield—Signs.
Pope, F. M., & Son, Bury—Railway Track Shims.
Rochfort, L., Bécancour—Bee Supplies.
Ross Rifle Co., Quebec—Rifle Stocks.
White, W. H., Ville St. Pierre—Bungs, Plugs and Dowels.
Williams Mfg. Co., Ltd., 1789 St. James, Montreal—Sewing-machines, Typewriters.

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" 11. Forest Products of Canada, 1909; Lumber, Square Timber, Lath and Shingles.
" 12. Forest Products of Canada, 1909: Pulpwood.
" 14. Forest Products of Canada, 1909; Cross-ties Purchased.
" 15. Forest Products of Canada, 1909.
(Being Bulletins 11, 12, 13, 14, 19 and 20.) French edition only.
" 16. Forest Fires and Railways.
" 22. Forest Products of Canada, 1910: Cross-ties.
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" 24. Wood-using Industries of Canada, 1910: Agricultural Implements and Vehicles, Furniture and Cars and Veneer.
" 27. Forest Products of Canada, 1910: Cooperage.
" 31. The Turtle Mountain Forest Reserve.
" 33. Forest Conditions in the Rocky Mountains Forest Reserve.
" 34. Forest Products of Canada, 1911: Lumber, Square Timber, Lath and Shingles.
" 35. Forest Products of Canada, 1911: Poles and Cross-ties.
" 36. Wood-using Industries of Ontario.
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" 48. Forest Products of Canada, 1913: Lumber, Lath and Shingles.
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" 54. Forest Products of Canada, 1914: Pulpwood.
" 56. Forest Products of Canada, 1914: Lumber, Lath and Shingles.
" 57. Forest Products of Canada, 1914 (Being Bulletins 54, 55 and 56).
" 58a. Forest Products of Canada, 1915: Lumber, Lath and Shingles.
" 58b. Forest Products of Canada, 1915: Pulpwood.
" 58c. Forest Products of Canada, 1915: Poles and Cross-ties.
" 58. Forest Products of Canada, 1915 (Being Bulletins 58a, 58b, and 58c).
" 59. Canadian Woods for Structural Timbers.
" 60 Douglas Fir, Its Mechanical and Physical Properties.
" 62a. Forest Products of Canada, 1916: Lumber, Lath and Shingles.
" 62b. Forest products of Canada, 1916: Pulpwood.
" 62c. Forest Products of Canada, 1916: Poles and Cross-ties.
" 62d. Forest Products of Canada, 1916: Directory of Saw-mills.
Circular 5. Planning a Tree Plantation for a Prairie Homestead.
" 6. Preservative Treatment of Fence-posts.
" 7. Manitoba a Forest Province.
" 8. The Forest Products Laboratories.
" 9. Chemical Methods for Utilizing Wood Wastes.

DEPARTMENT OF THE INTERIOR, CANADA
Hon. ARTHUR MEIGHEN, Minister; W. W. CORY, Deputy Minister

FORESTRY BRANCH—BULLETIN No. 68
R. H. CAMPBELL, Director of Forestry

WOOD-USING INDUSTRIES OF QUEBEC

OTTAWA
J. DE LABROQUERIE TACHÉ
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1918

7

Table of Contents

WOOD-USING INDUSTRIES OF QUEBEC

The Dominion Forestry Branch has already published, in separate bulletins, studies of the wood-using industries of the province of Ontario, of the Maritime Provinces (including New Brunswick, Nova Scotia, and Prince Edward Island), and of the three Prairie Provinces (Manitoba, Saskatchewan and Alberta).

The main purpose of these studies is to show the importance of wood in general as a raw material in the making of different articles, and particularly the use which is made of our native woods. Such studies are not only interesting to all but are important to both forest owners and wood consumers.

This bulletin deals with the wood-using industries of the Province of Quebec. The figures given were gathered during the years 1914 and 1915, unfortunately at a period when the wood-using industries of the province and of the whole of Canada were badly affected by the European war. It is probable that the total consumption reported was reduced because of the conditions prevailing.

In 1915 the province of Quebec led all the provinces of the Dominion in lumber production. Its total output of logs for the year 1915 was approximately 1,570,356,000 feet board measure, of which 1,078,787,000 feet were sawn by the various saw-mills of the province.

It should be understood that, in this study as well as in those previously published, the prime object is a presentation of the general conditions rather than a census of the quantity of wood consumed, although the bulletin will convey a fair idea of the quantity of the native and foreign woods necessary to supply the wood-using manufacturers of the province.

These statistics are compiled from reports received from 864 manufacturers. They show that the wood-using industries of the province consume yearly a quantity of raw wood material equal to 44·55 per cent of the total log output of its forests, and 61·8 per cent of the total lumber sawn in the province. Eighty-five per cent of the material consumed is native to the province, ten per cent is purchased in the other provinces of the Dominion, and five per cent outside of Canada, mainly in the United States.

It is to be regretted that about 350 firms have not replied to requests for reports but most of the important manufacturers in every class of industry have been kind enough to give such reports.

The figures given above show the importance to the province of Quebec of keeping its forests in the best condition possible, not only for meeting the present demand of its manufacturers but also with a view to providing for the future in all classes of wood-using industries. With the steadily increasing population of the province and the rapid improvement of the financial condition of its inhabitants the manufacture of wooden articles is capable of much further development as long as the raw material is available.

It is true that the province of Quebec, like most of our Canadian provinces, does not possess much hardwood of very high value. Quebec's small supply of hickory and white oak is almost exhausted. However, its large supply of woods such as spruce, balsam fir, pine, birch, maple, and beech, which form the basis of the wood-using industries, strongly emphasizes the importance of preserving the forests stocked with these woods and also the necessity of the establishment of a rational policy of silviculture for assuring a permanent supply

of the most valuable native woods, which are becoming scarce. This is a great economic problem in view of the gradually decreasing quantity of foreign supply and its increasing cost. There are certain species of trees that cannot be grown in this country. These we must import. But we should firmly establish our wood-using industries and ensure an economical balance between imports and exports by growing all the valuable woods which are adaptable to this country.

This could be done if public and private effort were earnestly applied to the problem. We have the foundation needed for the purpose; the land, the resources and finally the labour; we further require legislation and popular support.

It would be a great satisfaction to the Forestry Branch if this bulletin, besides its primary object stated above, would also help to promote the preservation and regeneration of the forests.

Kinds of Wood

TABLE A—SUMMARY OF WOOD USED IN QUEBEC, BY KINDS OF WOOD

Kind of Wood.	Per cent.	Quantity.	Value.	Average value.	Supply by Regions.						
					Quebec.	Ont.	N B	N.S.	B.C.	U.S.A.	Foreign.
		M FT. B.M.	$	$ cts.	M FT. B.M.	M FT. B.M.	M FT. B.M.	M FT. B.M.	M FT. B.M.	M FT. B.M.	M FT. B.M.
Total	**100·0**	**698,459**	**12,409,003**	**17 76**	**596,108**	**41,225**	**7,796**	**750**	**15,332**	**36,215**	**1,033**
Spruce	52·2	364,855	5,298,185	14 52	350,595	9,165	4,345	750			
Balsam Fir	17·6	122,947	1,208,563	9 83	122,947						
Pine	8·6	60,040	1,678,945	27 96	35,653	23,571	801		15		
Birch	6·4	44,563	963,950	21 63	37,596	4,467	2,434			66	
Hard Pine	4·0	27,844	981,583	35 25						27,844	
Douglas Fir	2·1	15,223	580,426	38 13					15,223		
Jack Pine	2·0	14,431	170,177	11 79	14,431						
Basswood	1·6	11,157	289,147	25 92	10,355	788				14	
Maple	1·5	10,113	190,853	18 87	8,093	1,939				81	
Hemlock	1·0	6,872	129,129	18 79	6,615	82	175				
Oak	0·6	4,144	160,402	38 71	677	44				3,423	
Poplar	0·5	3,467	51,817	14 95	2,517	950					
Ash	0·4	3,028	94,146	31 09	2,698	59				271	
Tulip Tree	0·3	2,455	104,296	42 48						2,455	
Elm	0·3	2,336	67,595	28 94	2,184	152					
Beech	0·2	1,139	22,007	19 32	1,139						
Mahogany	0·1	898	154,659	172 23							898
Chestnut	0·1	766	51,097	66 71	1					765	
Walnut	0·1	652	130,610	200 32	13					639	
Cedar	0·1	533	14,222	26 68	394	1	41		94	3	
Redwood	*	289	15,387	53 24							
Cypress	*	194	12,005	61 88						289	
Butternut	*	139	3,620	26 04	139					194	
Spanish Cedar	*	131	19,850	151 52							
Black Cherry	*	103	9,156	88 89	29						131
Red Gum	*	87	2,385	27 41						74	
Hickory	*	39	2,033	52 13	30	7				87	
Satinwood	*	5	1,773	354 50						2	
Teak	*	4	600	150 00						5	
Willow	*	2	200	100 00	2						4
Red Juniper	*	2	120	60 00						2	
Baywood	*	1	65	65 00						1	

*Less than one-tenth of 1 per cent.

Thirty-two different kinds of wood appear in the above table of which twenty are native to the province. It should be noted that of many of these twenty kinds of wood there are several species. For instance, spruce includes three species; birch, four; pine, two; maple, at least two main species; oak, two; and poplar, four species. Thus there are about thirty-one species of wood native to the province of Quebec represented in the table.

Tamarack is the only important native wood which the manufacturers have not reported. In 1915 the saw-mills of the province cut over two and a half million feet board measure of tamarack. There is no doubt that some of this wood is used by such industries as the building of boats and the manufacture of pumps and tanks. It is a durable and elastic wood. However, the greater quantity of tamarack cut in the province of Quebec is turned into railway ties or used in the state of raw lumber for rough construction.

Photo 7394. J. A. DOUCET.

Gasoline boats at rest, Lachine, Que. The favourite woods for building these boats are redwood, white pine, and cedar.

In the above list the wood of coniferous trees largely predominates, forming 87·9 per cent of the total. Spruce alone forms 52·2 per cent. Spruce is also the predominant species in the lumber output in the province of Quebec.

That some industries require special kinds of wood, whose characteristics make them most suitable for certain purposes, is true; but for many of them the use of one kind of wood instead of another is merely a matter of habit, convenience, and economy. Economy influences a great deal the choice of many kinds of wood for the manufacture of certain articles. Thus the kind of wood used would depend a good deal on the quantity available in the neighbourhood and the distance of the factories from the source of different wood supplies.

As regards the consumption of native wood, the wood-using industries of the province could be supplied by the home production of the province, with

the exception of white oak, walnut, cherry and white ash. Other than these, the purchase from other provinces of wood native to Quebec is merely a matter of convenience. It may be remarked that the province of Quebec gives as much of its raw material to the wood-using industries of the other provinces as it receives from them for its own consumption. Wood material from Ontario forms 5·9 per cent of the total consumption of the industries of Quebec. The Maritime Provinces contribute 1·2 per cent. The kinds of woods furnished by these two provinces are also native to Quebec.

Further, British Columbia furnishes 15,332,000 feet board measure, or 2·2 per cent of the total consumption. Quebec also purchased from the United States 36,215,000 feet board measure of high class woods, of which some are native to Quebec, but of which the supply is about exhausted, and some are not grown in this province. This is equal to 5·2 per cent of the total consumption of the province. Other foreign countries furnished 1,033,000 feet board measure.

The following table gives details concerning wood supplies purchased outside of the province of Quebec:—

TABLE B—WOOD PURCHASED OUTSIDE OF QUEBEC

Kind of Wood.	Total Quantity Purchased.	Supply by Regions.					
		Ont.	N.B.	B.C.	N.S.	U.S.A.	Foreign.
	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**102,351**	**41,225**	**7,796**	**15,332**	**750**	**36,215**	**1,033**
Hard Pine	27,844					27,844	
Pine	24,387	23,571	801	15			
Douglas Fir	15,223			15,223			
Spruce	14,260	9,165	4,345		750		
Birch	6,967	4,467	2,434			66	
Oak	3,467	44				3,423	
Tulip Tree	2,455					2,455	
Maple	2,020	1,939				81	
Poplar	950	950					
Mahogany	898						898
Basswood	802	788				14	
Chestnut	765					765	
Walnut	639					639	
Ash	330	59				271	
Redwood	289					289	
Hemlock	257	82	175				
Cypress	194					194	
Elm	152	152					
Cedar	139	1	41	94		3	
Spanish Cedar	131						131
Red Gum	87					87	
Black Cherry	74					74	
Hickory	9	7				2	
Satinwood	5					5	
Teak	4						4
Red Juniper	2					2	
Baywood	1					1	

DETAILED DESCRIPTIONS OF KINDS OF WOOD

TABLE I—SPRUCE

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.			
					Que.	Ont.	N.B.	N.S.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**364,855**	**5,298,185**	**14 52**	**350,595**	**9,165**	**4,345**	**750**
Wood-pulp	69·1	252,161	2,914,369	11 55	252,161			
Boxes and Crating	14·7	53,638	1,149,271	21 43	42,350	6,293	4,245	750
Sash, Doors, etc.	13·4	48,924	1,024,445	20 94	46,061	2,863		
Car Construction	0·7	2,606	56,786	21 79	2,606			
Miscellaneous	0·6	2,157	53,931	25 23	2,137			
Boats	0·3	1,093	24,476	22 40	1,086	7		
Furniture	0·2	818	13,540	16 55	718		100	
Pumps, Tanks and Silos	0·2	745	14,850	19 93	745			
Woodenware	0·1	601	8,717	14 50	601			
Cheese Boxes	0·1	490	5,585	11 40	488	2		
Coffins, Caskets and Shells	0·1	477	8,296	17 39	477			
Vehicles	0·1	405	9,777	24 14	405			
Agricultural Implements	0·1	269	4,701	17 48	269			
Foundry Boxes	*	182	2,375	13 05	182			
Machinery	*	179	3,834	21 42	179			
Musical Instruments	*	123	3,101	25 21	123			
Cooperage	*	4	81	20 25	4			
Toys and Sporting Goods	*	2	30	15 00	2			
Handles and Tools	*	1	20	20 00	1			

*Less than one-tenth of 1 per cent.

The spruce used is made up mainly of three species, white, black, and red. White spruce (*Picea canadensis*) and black spruce (*Picea mariana*) form the larger proportion. Red spruce (*Picea rubra*) forms a small percentage. It is probable that the greater percentage of the black spruce is used by the wood-pulp industries, but it is impossible to give reliable figures as to the percentage that each species forms of the total. Most manufacturers use the various species of spruce indifferently. Only a few demand a particular species, and even with these it is less the species than the grade which is sought.

Spruce, on account of its large distribution, its comparatively easy regeneration, its adaptability for use in the different industries, and also because of the rapid decrease in the quantity of pine, has now become the most important timber tree of the province of Quebec. In 1915 it formed 53 per cent of the total log production of the forests of the province. In the wood-using industries it exceeds in quantity all the other species together, forming 52·2 per cent of the total wood consumption.

White and black spruce are found throughout all the wooded regions of the province of Quebec. White spruce seldom occurs in extensive pure stands, but is generally mingled with hardwoods and black spruce. The red spruce is confined entirely to the southwest portion of the province, and particularly to the district adjoining the states of Maine, New Hampshire and Vermont.

Of the three species, the red spruce is supposed to have the best technical and physical qualities. It has a fine, showy grain and a reddish tinge, and has more

elasticity and greater longevity than white spruce. Black spruce has a much finer grain than the other two species. It is a good deal stronger and more durable, but it has a strong tendency to warp and twist.

Spruce is used by nineteen industries, both for the manufacture of articles and for packing and crating. Only two species are reported as having a greater variety of uses.

The wood-pulp industry is the greatest consumer of spruce. It requires a supply of 252,161,000 feet board measure, over 69 per cent of the total spruce used; or 139,467,000 feet more than all the other industries together.

Spruce is gradually taking the place of pine in boxes and crating, sash, doors, building material, dimension lumber, etc. The comparatively low average of the price of spruce is due mostly to the large proportion consumed by the wood-pulp industry and the raw state of the material used by it. Apart from this industry, the average price of spruce is nearly $19 per thousand feet board measure.

Some manufacturers claim that it is becoming difficult, almost impossible, to obtain large quantities of clear spruce in the markets of Quebec. This may be explained by the fact that a large proportion, and probably the best, of the spruce lumber of Quebec is sold to foreign countries, the local consumption being supplied mostly by small saw-mills cutting, chiefly, second-growth timber of small dimensions or grown in open stand.

TABLE II—BALSAM FIR

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.
					Quebec.
		M FT. B. M.	$	$ cts.	M FT. B. M.
Total	**100·0**	**122,947**	**1,208,563**	**9 83**	**122,947**
Wood-pulp	96·1	118,210	1,130,455	9 56	118,210
Boxes and Crating	1·8	2,199	30,220	13 74	2,199
Sash, Doors, etc.	1·4	1,680	35,866	21 35	1,680
Woodenware	0·1	650	9,050	13 92	650
Cheese Boxes	*	132	1,527	11 56	132
Vehicles	*	64	1,234	19 28	64
Coffins, Caskets and Shells	*	7	121	17 29	7
Agricultural Implements	*	3	60	20 00	3
Cooperage	*	1	15	15 90	1
Foundry Boxes	*	1	15	15 00	1

*Less than one-tenth of 1 per cent.

Balsam fir (*Abies balsamea*) is well distributed throughout the province of Quebec, mixed with spruce or hardwoods. It germinates easily, and the policy of natural regeneration of forest areas generally followed, the heavy debris of logging operations, and the greater proportion of fir below the diameter cutting limit give to this species considerable ascendency over the other coniferous species. It is even considered by some that if the present policy of lumbering is continued there is a possibility of balsam fir becoming the predominant tree in a large part of the Quebec forests. This condition exists in parts of Ontario and New Brunswick as well as in Quebec.

The reports for 1915 give for Quebec a total saw-mill cut of 170,794,000 feet board measure of balsam fir. The ten industries which have reported its use altogether consume 122,947,000 feet. The wood-pulp industry is responsible for the bulk (over 96 per cent) of this consumption.

Balsam fir is a softer and more perishable wood than spruce. It is also much weaker, but it has long, tough and colourless fibres which make it valuable in paper-making and nearly equal to spruce for that industry. Apart from wood-pulp the bulk of balsam fir material was used by the box and crating industries.

Photo 8273. J. A DOUCET.

Spruce and fir pulpwood ready for consumption, Belgo-Canadian Pulp Co., Shawinigan Falls, Que.

On account of the great resemblance between balsam fir and spruce wood the former species is generally mixed with the latter and sold as such for rough construction material and dressed lumber. As in the case of spruce, the large proportion of balsam fir used by the wood-pulp industry in the rough state contributes to lower its average price to $9.83; otherwise it would be $16.49 per thousand feet board measure.

Balsam fir will probably never be very much desired by other wood-using industries than those manufacturing wood-pulp, boxes and crating. In boxes and crating it is used as a substitute for pine and spruce. However, in consequence of the rapid decrease of available pine, the increasing demand for spruce by most of the industries, and the probable ascendency of balsam fir over the two other species in the natural regeneration of the forests it is logical to suppose that the use of balsam fir is bound to increase in proportion to the decrease of pine and spruce.

Outside of its consumption for wood-pulp, boxes and crating, the use of balsam fir is less a matter of suitability than of economy and necessity.

TABLE III—PINE

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.			
					Que.	Ont.	B.C.	N.B.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**60,010**	**1,678,945**	**27 96**	**35,653**	**23,571**	**15**	**80**
Sash, Doors, etc	43·2	25,886	857,698	33 13	21,038	4,813		33
Car Construction	24·1	14,476	423,300	29 24	6,304	8,172		
Boxes and Crating	15·1	9,147	197,307	21 57	4,751	3,646	15	735
Miscellaneous	12·1	7,272	101,253	13 92	506	6,766		
Coffins, Caskets and Shells	1·4	831	15,826	19 04	831			
Boats	1·4	812	34,270	42 20	804	8		
Furniture	0·5	314	6,716	21 39	314			
Musical Instruments	0·5	280	7,025	25 09	280			
Patterns	0·5	275	10,735	39 04	244			31
Pumps, Tanks and Silos	0·4	250	10,625	42 50	125	125		
Machinery	0·2	129	5,391	41 79	88	41		
Vehicles	0·2	127	3,741	29 46	127			
Refrigerators	0·2	100	1,800	18 00	100			
Agricultural Implements	0·1	73	1,460	20 00	73			
Foundry Boxes	0·1	66	1,766	26 76	66			
Cheese Boxes	*	1	15	15 00	1			
Woodenware	*	1	17	17 00	1			

*Less than one-tenth of 1 per cent.

In the above table pine includes four species. White pine (*Pinus Strobus*) forms the largest proportion, about 90 per cent; red pine (*Pinus resinosa*) forms the greater part of the remainder, with a small quantity of western yellow pine (*Pinus ponderosa*) and western white pine (*Pinus monticola*). Whenever possible, jack pine has been differentiated and reported separately. No effort was made in the compilation of these statistics to separate red from white pine.

Pine comes third in the list. It is used by seventeen industries, but leads in only two of them. The average price paid for pine material was $27.96 per thousand feet board measure. Two industries paid over $42. The average price paid by the manufacturers of New Brunswick and Ontario was $23.58 and $25.60 respectively. The price paid for pine is the highest paid for coniferous material purchased in the province of Quebec.

Pine was, from the beginning of the timber trade in Canada, its most important lumber. The axes of the farmers and the lumbermen, and forest fires, have greatly depleted the forests of this most important species, and, although the province of Quebec still possesses extensive areas of pine forest, there is no hope that this species will again become Canada's leading wood material.

Quebec's total white pine log production for 1915 is reported to be 251,330,000 feet board measure, and red pine 32,545,000 feet board measure. The wood-using industries consumed only 21 per cent of the total white and red pine output. Canada's white pine is so well known that a large quantity of Quebec pine is sold for export, to the detriment of the industries of the province which have to substitute for it a large quantity of hard pine and redwood, imported

from the United States, and Douglas fir, imported from British Columbia. Not only the bulk of, but the best of the white pine lumber of Quebec is exported to Europe. According to the statements of manufacturers of certain classes of commodities, the greater proportion of the quantity remaining on the home market is of inferior grade.

For most purposes white pine is the best species amongst those mentioned. It combines comparative durability and elasticity with great softness and lightness and remarkable ease in working. It is very easily seasoned. The wood of the red pine is harder and possesses greater strength, which recommends it for structural purposes. It contains much more resin than the white pine.

The western yellow pine supplied by British Columbia belongs to the same class as the red pine of Eastern Canada, while the western white pine resembles very much the eastern white pine.

The manufacturers of Quebec purchased 23,571,000 feet board measure of pine from Ontario, this quantity forming over 39 per cent of their total consumption.

However, this is less than the quantity of pine logged in the province and sawn by mills situated in Ontario. New Brunswick furnished 801,000 feet board measure, equal to 1·3 per cent of the consumption. Fifteen thousand feet board measure of western yellow pine and western white pine were purchased from British Columbia.

TABLE IV—BIRCH

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.			
					Que.	Ont.	N.B.	U.S.A.
		M FT. B. M.	$	$ CTS.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**44,563**	**963,950**	**21 63**	**37,596**	**1,467**	**2,434**	**66**
Hardwood Flooring	34·6	15,409	308,233	20 00	11,035	4,374		
Furniture	27·4	12,206	234,329	19 20	9,806		2,400	
Sash, Doors, etc	11·6	5,182	148,945	28 74	5,081	54		47
Shuttles, Spools, Bobbins, etc	8·3	3,703	112,899	30 49	3,703			
Boxes and Crating	3·2	1,444	19,798	13 71	1,422	3	19	
Miscellaneous	3·0	1,353	24,290	17 95	1,310	24		19
Vehicles	2·7	1,209	28,652	23 70	1,207	2		
Cooperage	2·2	1,000	12,000	12 00	1,000			
Car Construction	1·7	776	28,249	36 40	751	10	15	
Agricultural Implements	1·3	563	11,105	19 72	563			
Handles and Tools	1·1	484	7,271	15 02	484			
Musical Instruments	1·0	466	12,699	27 25	466			
Machinery	1·0	428	9,240	21 59	428			
Boot and Shoe Findings	0·3	114	1,454	12 75	114			
Pumps, Tanks and Silos	0·2	70	1,750	25 00	70			
Cheese Boxes	0·1	64	1,050	16 41	64			
Coffins, Caskets and Shells	*	34	715	21 03	34			
Toys and Sporting Goods	*	25	418	16 72	25			
Refrigerators	*	16	320	20 00	16			
Patterns	*	9	315	35 00	9			
Boats	*	8	218	27 25	8			

*Less than one-tenth of 1 per cent.

Birch comes fourth in the list. Its total consumption, 44,563,000 fe board measure, is equal to 99 per cent of the total Quebec production of th species reported for 1915. In fact birch is now the most important nati hardwood material of the wood-using industries of the province, not only account of its wide distribution throughout the province but because of i qualities. It is reported to be used by twenty-one industries, leading all woo in that respect.

The general name birch includes four species: yellow birch (*Betula lutea* sweet birch (*Betula lenta*), paper birch (*Betula alba* var. *papyrifera*) and whit birch (*Betula populifolia*). In the wood-using industries yellow birch is th

Photo 7391. J. A. DOUCET.

Piles of native birch, maple, and ash used for the manufacture of chairs, Roxton Mill and Chair Mfg. Co., Ltd., Waterloo, Que.

most important of the four species named. Yellow birch is usually found mixed with maple and white spruce. It does not extend north of the basin of the St. Lawrence. Paper and white birch are the most common but they do not grow to so large a size as yellow birch. They are found in virgin forest, but particularly on restocked land. They extend north as far as the Hudson Bay drainage basin, although in that region they are small in size and of little commercial value. Paper and white birch are mostly used in woodenware and turnery and for making spools and bobbins. They are lighter and much softer than the others. Sweet birch is claimed to possess all the qualities of yellow birch and to an even greater degree. It is darker in colour, of greater density, and has not so large a percentage of the less valuable sapwood. Sweet birch does not occupy a wide range in Quebec.

In general the wood of birch is fairly hard and strong, and has a fine, even grain and texture. Birch wood checks easily in moist situations and presents considerable difficulty in seasoning.

The manufacture of hardwood flooring is the industry which consumes the greatest quantity of birch wood, not only in the province of Quebec but also throughout the whole of Canada. It is bound to occupy a still higher place among the other industries using hardwood on account of the continually decreasing supply of more expensive hardwoods and their increase in price.

Quebec imports birch from Ontario, New Brunswick, and the United States. The total quantity imported is equal to 15 per cent of the total consumption of that material in the province. The material imported from Ontario and New Brunswick is chiefly yellow birch. The United States furnished 66,000 feet board measure, or 0·1 per cent of the total consumption. This quantity is believed to be made up mostly of sweet birch.

TABLE V—HARD PINE

Industry.	Per cent.	Quantity	Value.	Average Value.	Supply by Regions. U.S.A.
		M FT. B. M.	$	$ cts.	M FT. B. M.
Total	**100·0**	**27,844**	**981,583**	**35 25**	**27,844**
Car Construction	96·6	26,892	946,208	35 19	26,892
Sash, Doors, etc.	2·9	817	29,622	36 26	817
Pumps, Tanks and Silos	0·3	100	4,000	40 00	100
Machinery	*	19	1,093	57 53	19
Agricultural Implements	*	10	450	45 00	10
Boats	*	6	210	35 00	6

*Less than one-tenth of 1 per cent.

Hard pine is not a Canadian wood. It is imported from the Southern States. It comprises four distinct species: longleaf, shortleaf, Cuban and loblolly. Longleaf pine (*Pinus palustris*) is characterized by close grain and density, and is mainly used for structural purposes. Shortleaf pine (*Pinus echinata*) is coarser grained and softer than longleaf pine. Cuban pine (*Pinus heterophylla*) has characteristics similar to longleaf pine but is not so common. Loblolly pine (*Pinus taeda*) has the coarsest and softest wood of the four. Manufacturers do not differentiate these species of pine. Hard pine is sold under many trade names, such as: Georgia pine, Southern pine, yellow pine, Carolina pine, pitch pine.

Six industries report using hard pine material to the extent of 27,844,000 feet board measure, forming 4 per cent of the total consumption. Car construction used 96·6 per cent of the hard pine material reported. The use of hard pine is increasing perceptibly in Canada. The decrease of available white pine will to some extent account for that condition. In many cases, and particularly in the boat-building industries, hard pine is now used because of the difficulty of obtaining high grade white and red pine. The average price paid, $35.25 per thousand feet board measure, was over $7 higher than the price paid for the native pine.

In regard to the relation of the hard pine to Douglas fir, the grow
appreciation of the latter is due not only to the fact that it is a Canadian w
but also, and chiefly, because of its strength, stiffness, and other high qualit
See Forestry Branch Bulletin No. 59, "Canadian Woods for Structural Timbe

Photo 7385. J. A. Doucet

Broom handles made of birch and maple. The Megantic Broom Mfg. Co., Lake Megantic, Que.

TABLE VI—DOUGLAS FIR

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions
					B.C.
		M FT. B. M.	$	$ cts	M FT. B. M.
Total	**100·0**	**15,223**	**580,426**	**38 13**	**15,22**
Car Construction	93·0	14,159	534,821	37 77	14,15
Sash, Doors, etc.	6·7	1,024	43,377	42 36	1,02
Boats	0·2	32	1,770	55 31	3
Machinery	*	6	368	61 33	
Boxes and Crating	*	2	90	45 00	

*Less than one-tenth of 1 per cent.

Douglas fir (*Pseudotsuga mucronata*) is native to the Pacific coast. All the supply used by Quebec was purchased from British Columbia. This species comes third in the list of wood material purchased outside of province and forms 2·1 per cent of the total wood used. The average price paid for Douglas fir was $38.13 per thousand feet board measure, being the highest price paid for coniferous wood.

This species is reported to be used by five industries only, and car construction used 93·0 per cent of the total.

Douglas fir is one of the world's most valuable structural woods, on account both of its intrinsic qualities and its large dimensions. It is rapidly growing in popularity and its use should be still further encouraged. It was, at first, valued only for framework and structural purposes, but now it is frequently used for more ornamental purposes, such as all kinds of interior finishing, flooring, panelling, sash and doors, etc. It is also used as sliced veneer, in which form it gives a fine effect on account of its striking grain.

The wood of Douglas fir is very strong, elastic, tough, hard, ...ght-grained, comparatively light, and fairly durable. Its chief fault lies in the difficulty there is in working it, on account of its comparative hardness when seasoned and its liability to split.

The high price asked for Douglas fir on the Quebec market is very likely the chief reason why it is not used by more industries. Bulletin 58, "Forest products of Canada, 1915," places the price of Douglas fir at the saw-mills of British Columbia at $11.76. The long haul by rail across the continent is the chief factor in raising the price of Douglas fir.

TABLE VII.—JACK PINE

Industry	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions
					Que.
		M FT. B. M.	$	$ cts.	M FT. B. M.
Total	**100·0**	**14,431**	**170,177**	**11 79**	**14,431**
Wood-Pulp	99·6	14,378	169,259	11 77	14,378
Sash, Doors, etc.	0·4	53	918	17 32	53

Jack pine (*Pinus Banksiana*), coming seventh in the list, is given a high rank amongst the wood material used by the wood-using industries of Quebec on account of the consumption of this material by the wood-pulp industry. Ninety-nine per cent of the jack pine reported was used by the pulp manufacturers. Only two industries have reported its use. [Jack pine is largely used for railway ties, but ties are not included in this study.]

It is probable, however, that a small quantity of jack pine is mixed with red pine and used as such by a few other industries.

Compared with white and red pine, jack pine is a much inferior wood, being weaker, more brittle, and more perishable. The tree is not so tall and the wood is seldom found clear of knots. The wood of jack pine is very resinous.

Fifty-seven per cent of the jack pine used by the wood-pulp industry is manufactured by the sulphate process. Wood-pulp factories pay $11.77 per thousand feet board measure for jack pine; while sash, door and building material factories pay $17.32. The first mentioned factories buy round logs, while the la...er buy in the form of sawn lumber.

TABLE VIII—BASSWOOD

Industry.	Per cent	Quantity	Value.	Average Value.	Supply by Regions.					
					Que.		Ont.		U.S.A.	
		M. FT. B. M.	$	$ cts.	M. FT. B. M.		M. FT. B. M.		M. FT. B. M.	
Total	**100 0**	**11,157**	**280,147**	**25 92**	**10,355**		**788**		**14**	
Boxes and Crating	39 1	4,371	108,570	24 84	3,806		565			
Sash, Doors, etc	17 7	1,977	57,529	29 10	1,995		4		8	
Coffins, Caskets and Shells	12 2	1,360	33,808	24 86	1,360					
Furniture	7 8	865	21,317	24 57	865				3	
Musical Instruments	6 4	711	17,784	24 91	711					
Car Construction	5 1	604	23,618	39 10	594		10			
Vehicles	2 8	309	9,767	31 61	305		1		3	
Boot and Shoe Findings	2 5	277	3,231	11 68	277					
Miscellaneous	2 2	244	6,770	27 74	244					
Cooperage	1 9	208	2,253	10 83			208			
Machinery	1 0	110	2,335	19 62	110					
Agricultural Implement	0 6	63	1,226	19 40	63					
Shuttles, Spools, Bobbin	0 2	25	550	22 00	25					
Patterns	*	5	120	24 00	5					
Cheese Boxes	*	4	60	15 00	4					
Handles and Tools	*	3	65	22 00	3					
Toys and Sporting Goods	*	3	54	18 00	3					
Boats	*	1	40	40 00	1					
Woodenware	*	1	17	17 00	1					

*Less than one-tenth of 1 per cent.

Photo 7353. J. A. DOUCET.

Gasoline boat made of white pine, manufactured by Louis St. Pierre, Verchères, Que. The oar is made of basswood.

Basswood heads the list of what might be termed the "soft hardwoods" and comes second of all the hardwoods. The quantity consumed by the industries using it is given as being approximately 93 per cent of the total Quebec output given for 1915. Its value at the factory ranges from $11.68 to $40 per

thousand feet board measure, boot and shoe findings, and boat-building industries paying respectively the lowest and the highest prices. The average value for all uses, $25.91, is $5.56 more than the price reported by the saw-mill. Basswood is reported by nineteen industries and leads in two. Birch is the only wood material which occupies a wider range.

There is only one species of basswood growing in Canada (*Tilia americana*) and the small quantity of basswood imported from the United States is cut from the same species. Basswood is light and soft. It has a fine, even texture and a coarse grain. It is odourless and tasteless, tough and easily worked. It does not check, and holds nails and paint well. Its poor qualities are its weakness and non-durability.

Box and crating industries are the greatest consumers of basswood. Nearly ninety-three per cent of the basswood used is native to the province. Ontario furnishes 7 per cent and the United States a little over one-tenth of 1 per cent.

TABLE IX—MAPLE

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.		
					Que.	Ont.	U.S.A.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.	M FT. B.M
Total	**100·0**	**10,113**	**100,853**	**18 87**	**8,093**	**1 939**	**81**
Boot and Shoe Findings	35·2	3,558	55,466	15 59	3,558		
Furniture	21·8	2,203	42,714	19 39	2,203		
Hardwood Flooring	19·2	1,941	32,949	16 98	190	1,751	
Handles and Tools	4·7	478	7,737	16 19	478		
Sash, Doors, etc	4·4	451	20,089	45 92	314	137	
Boxes and Crating	2·5	251	2,765	11 02	251		
Cooperage	2·5	250	2,750	11 00	250		
Vehicles	1·9	190	4,574	24 07	189	1	
Miscellaneous	1·8	185	3,398	18 37	185		
Musical Instruments	1·6	165	5,373	32 56	80	50	35
Agricultural Implements	1·5	151	3,546	23 48	151		
Car Construction	1·1	111	2,876	25 91	111		
Machinery	1·0	100	4,341	43 41	54		46
Shuttles, Spools, Bobbins, etc.	0·5	50	1,000	20 00	50		
Pumps, Tanks and Silos	0·2	19	475	25 00	19		
Toys and Sporting Goods	*	5	88	17 50	5		
Boats	*	3	72	24 00	3		
Woodenware	*	1	24	24 00	1		
Cheese Boxes	*	1	16	16 00	1		

*Less than one-tenth of 1 per cent.

Maple is one of the most valuable trees of the province of Quebec and northeastern America generally, not only because it is one of the main sources of hardwood supply of the province but also because of its economic value as a source of food supply in the manufacture of maple sugar.

The wood-using industries use over ten million feet of maple wood of which over 80 per cent is native to the province of Quebec; 19·1 per cent is purchased from Ontario, and 0·8 per cent from the United States.

Nineteen industries out of a total of twenty-four have reported the use of maple material. Its value ranges from $11 to $45.92 per thousand feet board measure. The average price paid, $18.87, is only 84 cents more than the price reported by the saw-mill owners. This may be partly explained by the relatively low price paid by the boot and shoe findings industries which used over 35 per cent of the total maple wood consumed. These manufacturers purchased most of their raw material in the form of round logs.

Four different species of maple grow in the province of Quebec, but only three of these are classified as being commercially important: sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), and silver maple (*Acer saccharinum*). The sugar maple is also known as "hard" maple and the red and silver maples as "soft" maple. The red maple is not used in the industries to any large extent. The wood of the red and silver maples is tougher than that of sugar maple, but also much softer, lighter, and more perishable. The value of maple wood depends largely on its hardness and stiffness. It is a difficult material to season. It warps badly and checks easily.

The "bird's-eye", "wavy", and "curly" effects found in the sugar maple are only accidental forms of the grain of the wood. It is supposed that bird's-eye maple is more likely to be found on dry and thin soil. Bird's-eye, wavy, and curly maple are much valued for decorative work, in which they are mostly used as veneer.

Maple material occupies a very high rank in most of the industries into which it enters, but leads in only one.

In the wood-using industries of Ontario, maple leads the hardwood list: in New Brunswick, it occupies the third rank, coming after birch and oak, but leads in three industries. The total used in Ontario is over 88,000,000 feet board measure and in New Brunswick 3,600,000 feet.

TABLE X—HEMLOCK

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.		
					Que.	Ont.	N.B.
		M FT. B. M.	$	$ cts	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**6,872**	**129,129**	**18 79**	**6,615**	**82**	**175**
Sash, Doors, etc	81·4	5,798	109,981	18 97	5,541	82	175
Miscellaneous	10·3	706	15,116	21 44	706		
Boxes and Crating	2·6	182	2,399	13 19	182		
Wood-pulp	2·3	158	1,144	7 24	158		
Cheese Boxes	0·3	19	266	14 06	19		
Vehicles	*	4	92	23 00	4		
Coffins, Caskets and Shells	*	4	91	22 75	4		
Foundry Boxes	*	1	16	16 00	1		

*Less than one-tenth of 1 per cent.

Hemlock (*Tsuga canadensis*) was used by eight industries to the extent of 6,872,000 feet board measure, or 1·0 per cent of the total wood consumption

Hemlock comes fifth in the list of Quebec forest production with an output of 55,960,000 feet of which over 5,000,000 feet is sawn outside of the province. The wood-using industries consumed only 12·2 per cent of the annual forest production of hemlock.

Hemlock is a fairly common tree in Canada. Its bark has a great economic value in tanning. Its wood is fairly hard and stiff, more so than spruce, but on account of characteristic defects is not very much appreciated in the wood-using

Photo 9538. R. G. LEWIS.

The box and crate industry requires yearly 73,752,000 feet board measure of lumber. The engraving shows shell, tobacco, cigar, cocoa, and can boxes, crates, etc.

industries, being brittle, splintery, harsh, and cross-grained. The bulk of hemlock goes for rough construction, its stiffness and durability recommending it for that use. In durability it ranks between pine and spruce.

In the wood-using industries it is chiefly used in building construction, where 84·4 per cent of the total reported is used, and there it is mostly used for rough work and for crating for sash and doors. The other industries use hemlock chiefly for boxing purposes. It is also reported that Quebec manufacturers purchased 82,000 feet board measure of hemlock from Ontario and 175,000 feet from New Brunswick, or, respectively, 1·2 per cent and 2·5 per cent of the total consumption. The average price paid for hemlock was $18.79 per thousand feet board measure; the vehicle industry paying the highest price, $23.

TABLE XI—OAK

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.		
					U.S.A.	Que.	Ont.
		M FT. B. M.	$	$ CTS.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**4,144**	**160,402**	**38 71**	**3,423**	**677**	**44**
Car Construction	68·0	2,816	91,190	32 38	2,816	.....	.....
Furniture	11·0	441	18,345	41 60	291	150	.....
Vehicles	8·0	346	15,856	45 83	10	302	34
Machinery	6·5	265	15,912	60 05	218	46	1
Boats	4·1	172	12,935	75 20	33	139	.....
Coffins, Caskets and Shells	1·3	55	3,150	57 27	30	25	.....
Musical Instruments	0·5	20	1,715	85 75	20	.....	.....
Miscellaneous	0·3	14	578	41 28	4	10	.....
Agricultural Implements	0·3	13	596	45 85	.....	5	8
Pattern	*	1	85	85 00	1	.....	.....
Cooperage	*	1	40	40 00	.....	.....	1

*Less than one-tenth of 1 per cent.

The province of Quebec supplied in 1915 only 677,000 feet board measure of oak, while its manufacturers required a supply of 4,144,000 feet. The production is equal only to 16 per cent of the consumption. The bulk of the oak wood is purchased from the United States, to the extent of 82 per cent of the total. Ontario supplies a small quantity, equal to 1 per cent of the total quantity used. There is a larger importation of oak into Quebec than of any other hardwood. It is reported as being used by eleven industries. In quantity it does not lead in any of them, while in value it leads in one.

The price paid for oak ranges from $32.38 to $85 per thousand feet board measure, its total value being $160,402.

The supply of native oak is rapidly decreasing in Canada. In New Brunswick it is commercially exhausted. In Quebec and Ontario the supply is confined to small groups or isolated trees in farmers' woodlots. It is much scarcer in Quebec than it is in Ontario, the quantity in Quebec having always been less.

The species of oak native to the province are red oak (*Quercus rubra*), white oak (*Quercus alba*), and bur oak (*Quercus macrocarpa*). In trade this last species is not differentiated from the white oak. Red oak is the most common in Canada. The imported oak wood comprises chiefly the three species mentioned above. The superior qualities of oak material are well known to the manufacturers of the different classes of goods. White oak is generally superior to red oak. It is heavier, stronger, harder, tougher, more durable, and easier to season. The grain of the wood is finer and more even, the appearance of the medullary rays, which gives so much value to quarter-cut oak, is more striking and attractive. But the main reason of the superiority of white oak over red oak wood is its density, stiffness, and strength. Red oak wood is more easily worked or tooled.

Red oak can be substituted for white oak in most industries and for most articles, except for barrels or casks destined to contain alcoholic liquors. No substitute has been found for white oak for that purpose.

It would seem advisable to encourage oak plantations. Red oak grows relatively quickly. This species of wood produces commercial material in about 75 to 100 years. White oak is slower in growth.

Photo 9541. R. G. LEWIS.

Strips of Spanish cedar, basswood and tulip of an average of 6 ft. long and varying from ¼ to 1 inch wide. Such material is usually burnt under the boiler of the factory, while it would appear that a good deal of it could be utilized in the manufacture of toys and small boxes.

TABLE XII—POPLAR

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.	
					Que.	Ont.
		M FT. B. M.	$	$ CTS.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**3,467**	**51,817**	**14 95**	**2,517**	**950**
Wood-pulp	50·8	1,762	21,806	12 37	1,762	
Boxes and Crating	38·0	1,317	23,906	18 15	367	950
Furniture	4·4	151	1,755	11 62	151	
Sash, Doors, etc.	3·7	129	2,557	19 82	129	
Hardwood Flooring	2·9	100	1,600	16 00	100	
Vehicles	0·1	5	120	24 00	5	
Coffins, Caskets and Shells	0·1	3	73	24 33	3	

Poplar includes four species: balsam poplar (*Populus balsamifera*), aspen (*Populus tremuloides*), cottonwood (*Populus deltoides*), large-toothed aspen, (*Populus grandidentata*), which are all represented in the wood-using industries of the province. Poplar trees are largely distributed over Canada and more so throughout the northern portion, where aspen and balsam poplar are the only species of the genus to be found.

Balsam poplar and cottonwood are considered the best material of the four for lumber, while aspen is preferred for pulp and excelsior. In general the wood of poplar is weak, soft, light, perishable; its fibre is tough; it is colourless and tasteless. It is easy to work but difficult to season, and is subject to shrinking, swelling, and warping. Aspen is the toughest and strongest of the poplars, but the most difficult to season.

In the wood-using industries poplar comes twelfth in the list, forming 0·5 per cent of the total. In the output of logs this species comes tenth with approximately 4,500,000 feet board measure. The wood-using industries consumed nearly 77 per cent of this production.

With the development of the making of pulp by the soda process, aspen is bound to become a more popular wood material and to attain a much greater economic value, more or less in proportion to the decreasing quantity and increasing value of spruce and balsam fir.

It appears by the reports received that Ontario sells 950,000 feet of poplar to manufacturers in Quebec, which quantity is equal to 27 per cent of the total consumption.

TABLE XIII—ASH

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.		
					Que.	Ont.	U.S.A.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**3,028**	**94,146**	**31 09**	**2,698**	**59**	**271**
Sash, Doors, etc.	30·4	920	24,011	26 10	891	25	3
Furniture	26·8	810	16,644	20 55	810		
Car Construction	12·3	372	24,300	65 32	80	30	262
Vehicles	11·8	359	15,858	44 17	350	3	6
Handles and Tools	9·1	277	4,953	17 88	277		
Refrigerators	5·0	150	3,750	25 00	150		
Boxes and Crating	2·5	76	1,710	22 50	76		
Miscellaneous	0·7	22	698	31 73	22		
Machinery	0·6	19	1,468	77 26	19		
Boats	0·3	8	450	56 25	8		
Musical Instruments	0·2	5	125	25 00	5		
Toys and Sporting Goods	0·1	4	69	17 25	4		
Agricultural Implements	0·1	3	60	20 00	3		
Coffins, Caskets and Shells	*	2	35	17 50	2		
Cheese Boxes	*	1	15	15 00	1		

*Less than one-tenth of 1 per cent.

Ash is one of the most valuable hardwoods of Eastern Canada. At one time it was quite plentiful, but now most of the choice ash trees have been cut.

In 1915 the forests of Quebec produced approximately 6,156,000 feet board measure of ash. In this respect the province of Quebec is reported to lead the other provinces of the Dominion. The ash cut in Quebec is known generally under two names, white ash (*Fraxinus americana*) and black ash (*Fraxinus nigra*), although it includes a certain quantity of red ash (*Fraxinus pennsylvanica*) and green ash (*Fraxinus pennsylvanica* var. *lanceolata*).

Fifteen different classes of manufacturers report ash, but the sash, doors, and building material, and furniture industries use more than all the other industries together. Ash leads in only one industry (refrigerators) but it occupies a prominent rank in most of the industries using hardwood.

The average price of ash material was $31.09 per thousand feet board measure, cheese box manufacturers paying the lowest, $15, and machinery makers the highest, $77.26. Manufacturers of cars imported most of their ash supply from the United States, paying $65.32 per thousand feet.

It is claimed that black ash is still fairly plentiful but that white ash is getting very scarce. The choice white ash has been mostly cut. Home industries which demand a superior quality of white ash are already suffering from a scarcity of this wood.

Toughness and elasticity are the marked characteristics of white ash. Its texture is fine and straight, although the wood is not particularly hard and strong. The wood is not very durable but it seasons well and takes an attractive polish. Ash is often used as veneer in panelling for interior decorative work, for doors, etc.

On account of its tasteless and odourless qualities, ash is especially serviceable for baskets, barrels, boxes, etc., intended to contain food.

White ash is especially used where strength and elasticity are required. No other Canadian wood is reported that is equal to white ash for holding its shape. Black ash is considered to have more decorative qualities than white ash.

Quebec purchased from the United States about 9 per cent of the ash material consumed by its industries, and from Ontario 1·9 per cent.

TABLE XIV—TULIP TREE

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.
					U.S.A.
		M FT. B. M.	$	$ CTS. M FT. B. M.	M FT. B. M.
Total	**100 0**	**2,455**	**104,296**	**42 48**	**2,455**
Car Construction	45·4	1,114	52,346	46 99	1,114
Boxes and Crating	22·4	550	10,000	18 18	550
Sash, Doors, etc.	12·4	305	17,230	56 27	305
Musical Instruments	7·8	192	13,460	70 15	192
Miscellaneous	6·2	152	5,988	39 39	152
Furniture	4·7	115	3,055	26 57	115
Vehicles	1·0	25	2,028	81 12	25
Machinery	0·1	2	180	90 00	2

Tulip tree (*Liriodendron Tulipifera*) is also known under the common names of "whitewood" and "yellow poplar". This wood is not native to Canada, except in a small section of the southern part of Ontario. Tulip wood is practically all imported from the United States. It comes fourth in the list of imported woods, and occupies the fourteenth rank amongst the woods used. The average price paid for tulip, $42.48 per thousand feet board measure, is higher than the price paid for ash. Machinery manufacturers paid $90 for this material.

Tulip is reported to be used by eight industries to the extent of 0·3 per cent of the total. Over 45 per cent is used in car construction.

It is claimed that tulip is the best American wood for holding its shape after seasoning, and it seasons without checking or warping. It is easy to work and takes paint well. Tulip wood combines softness, lightness, and toughness, with durability.

TABLE XV—ELM

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.	
					Que.	Ont.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**2,336**	**67,595**	**28 94**	**2,184**	**152**
Furniture	36·1	843	15,485	18 37	843	.....
Cheese Boxes	17·2	401	17,816	44 43	394	7
Boxes and Crating	14·5	338	8,375	24 78	338	.....
Boats	8·1	189	11,565	61 19	189	.....
Sash, Doors, etc	6·7	157	3,188	20 31	157	.....
Vehicles	5·6	131	3,919	29 92	128	3
Musical Instruments	5·1	120	3,840	32 00	40	80
Cooperage	4·8	112	2,140	19 11	50	62
Machinery	1·0	22	773	35 13	22	.....
Miscellaneous	0·7	16	350	20 63	16	.....
Refrigerntors	*	3	54	18 00	3	.....
Agricultural Implements	*	2	55	27 50	2	.....
Coffins, Caskets and Shells	*	2	35	17 50	2	.....

*Less than one-tenth of 1 per cent.

Elm is one of the most popular hardwoods of the province of Quebec, both as an ornamental and as a lumber tree. It is used for almost every purpose for which Canadian hardwood can be employed; but it has been particularly in demand for cheese boxes and basket material. It grows to a very large size. The species is mostly confined to the basin of the St.Lawrence.

The greatest proportion of the elm used is white elm (*Ulmus americana*), with a much smaller proportion of rock elm (*Ulmus racemosa*) and red, or slippery, elm (*Ulmus fulva*). The wood of elm is fairly heavy and hard when dry, and fairly elastic and strong. It has an even and rather fine texture. The chief faults of the elm are its non-durability and the difficulty of seasoning it.

Rock elm is considered the most valuable wood of the three species. It is harder, stronger, tougher, and more durable than the others. Rock elm is

found in the vicinity of Montreal, and particularly in the section of the province of Quebec adjoining the lower valley of the Ottawa river. White and red elm are very common in the central plain of the St. Lawrence. They are mostly found isolated along roads and fences, and in pasture fields. In the lower Laurentians elm is still found in small groups of fine appearance. The northern limit of these two species is a line running through Chicoutimi, La Tuque, Nominingue, Ferme Neuve, and North Timiskaming. Generally elm is not found above 1,000 feet elevation.

Bulletin 58, Forest Products of Canada, 1915, gives the province of Quebec as having an output of 3,490,000 feet board measure of elm. The wood-using industries reported the consumption of 67 per cent of that production.

The quantity purchased from Ontario is equal to 6 per cent of the total quantity used.

Elm was used by thirteen industries. A comparatively large quantity of elm is turned into veneer for cheese boxes and fruit crating. The manufacturers of furniture use over 36 per cent of the elm reported. Manufacturers of boats paid the highest price for elm, $61.19 per thousand feet board measure, over twice the average price reported.

TABLE XVI—BEECH

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions. Que.
		M FT. B. M.	$	$ cts.	M FT. B. M.
Total	**100·0**	**1,139**	**22,007**	**19 32**	**1,139**
Furniture	52·2	595	9,788	16 45	595
Hardwood Flooring	22·1	252	5,954	22 63	252
Handles and Tools	9·3	106	1,970	18 58	106
Sash, Doors, etc	8·8	100	2,566	25 66	100
Boot and Shoe Findings	2·2	25	300	12 00	25
Machinery	2·1	24	660	27 50	24
Vehicles	1·6	18	369	20 50	18
Pumps, Tanks and Silos	1·0	11	275	25 00	11
Toys and Sporting Goods	0·4	5	80	16 00	5
Miscellaneous	0·3	3	45	15 00	3

Beech (*Fagus grandifolia*) is a very common hardwood in the province of Quebec, although not quite so much so as in the Maritime Provinces where it is the commonest hardwood.

Quebec wood-using industries consumed 1,139,000 feet board measure of beech, which quantity is equal to 0·2 per cent of the total wood consumed in the different industries. The furniture and hardwood flooring industries used over 74 per cent of the beech wood which was reported by ten industries. The average price paid was $19.32 per thousand feet board measure; machinery manufacturers paying the highest figure, $27.50.

The wood of beech is hard, fairly strong and stiff, but not elastic. The best beech wood is of even grain and fine texture and is easily worked, but a

good deal of it is cross-grained, particularly when not grown under good conditions. Beech wood takes a good polish, but in moist conditions it checks easily and is very perishable.

Photo 8278. J. A. DOUCET.

Tram-cars constructed of iron and wood, Hull, Quebec. The wood used is birch and pine.

TABLE XVII—MAHOGANY.

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions. Foreign.
		M FT. B. M.	$	$ cts.	M FT. B. M.
Total	**100·0**	**898**	**154,659**	**172 23**	**898**
Car Construction	81·8	734	119,538	162 86	734
Furniture	8·0	72	13,675	189 93	72
Sash, Doors, etc	6·2	56	10,314	184 18	56
Musical Instruments	1·7	15	7,800	520 00	15
Boats	1·2	11	1,777	161 55	11
Coffins, Caskets and Shells	0·7	6	715	119 17	6
Machinery	0·1	1	250	250 00	1
Vehicles	0·1	1	200	200 00	1
Patterns	0·1	1	200	200 00	1
Miscellaneous	0·1	1	190	190 00	1

Mahogany is a tropical wood coming into Canada through United States and West Indian ports. The mahogany wood found on the market is made up of many species, of which American mahogany (*Swietenia mahagoni*) probably forms the greatest percentage. Mahogany is a very expensive wood. Its physical qualities are very high. It is strong, hard, heavy, and durable. Its

attractive colour and grain also give it high value. The wood has a natural lustre which darkens with age to a deep wine-colour.

Mahogany wood was used by ten industries. Car construction used over 81 per cent of the total. The average price paid was $172.23 per thousand feet board measure, which price was exceeded by only two woods. A good deal of mahogany is used in the form of veneer of one twenty-fourth to one twenty-eighth of an inch in thickness.

Mahogany forms 0·1 per cent of the total wood used by the different industries.

SPECIES NOT SO LARGELY USED.

Chestnut.—Chestnut (*Castanea dentata*) does not grow commercially in the province of Quebec. It is found only in the most southwestern part of the province, in very small quantities and much scattered.

Chestnut wood is reported as used by five industries to the extent of 776,000 feet board measure, or 0·1 per cent of the total wood consumption.

Chestnut wood has an attractive grain, but it is very soft, light, and weak. It resembles ash in texture. The chestnut tree is subject to the attack of an insect known as the chestnut borer (*Lymexylon sericeum*), and a good deal, known to be wormy, is used as core for veneer. Otherwise it is sound and very durable. Chestnut wood has a fine appearance which makes it a favourite wood for interior finishing and decorative work.

Chestnut material costs, on an average, $66.71 per thousand feet board measure. Sash, door and building material manufacturers are reported to have paid the highest price, $68.88, and toys and sporting goods the lowest, $35.

Walnut.—Walnut (*Juglans nigra*) is very scarce in the province of Quebec. It is not indigenous to the province but was introduced into a few localities from Ontario and the northern United States.

Walnut is the most expensive native wood reported and the second in price of all the list. The bulk of the supply of walnut material is imported from the United States.

Seven industries report using black walnut to the extent of 652,000 feet board measure.

In such manufactures as furniture and musical instruments most of the walnut is used as veneer.

Cedar.—Cedar is Canada's most durable soft wood, and because of this it is used to a very large extent for shingles, posts, poles, railway ties, etc. The wood-using industries of Quebec have reported a consumption of only 533,000 feet board measure of cedar, although the output of logs of this species in the province was reported to be nearly 63,000,000 feet, of which four and one-half million feet board measure were cut into lumber in the province. Four industries report using cedar material, the greatest demand being for sash, doors and building material which consumed over 88 per cent of the total given. The boat industries used 62 per cent of the remainder.

The cedar wood used is of two species: eastern white cedar (*Thuja occidentalis*), and western cedar (*Thuja plicata*) of British Columbia and the Western States.

Seventy-three per cent of the cedar used is native to Quebec and 17 per cent is purchased in British Columbia, New Brunswick furnishing most of the remainder.

The eastern white cedar does not grow to a very large size, and, besides, the best of the supply has been cut. The western cedar grows to a much larger size and is much more abundant. This is why the eastern manufacturers are purchasing western cedar, which is mostly used in boat construction, sash

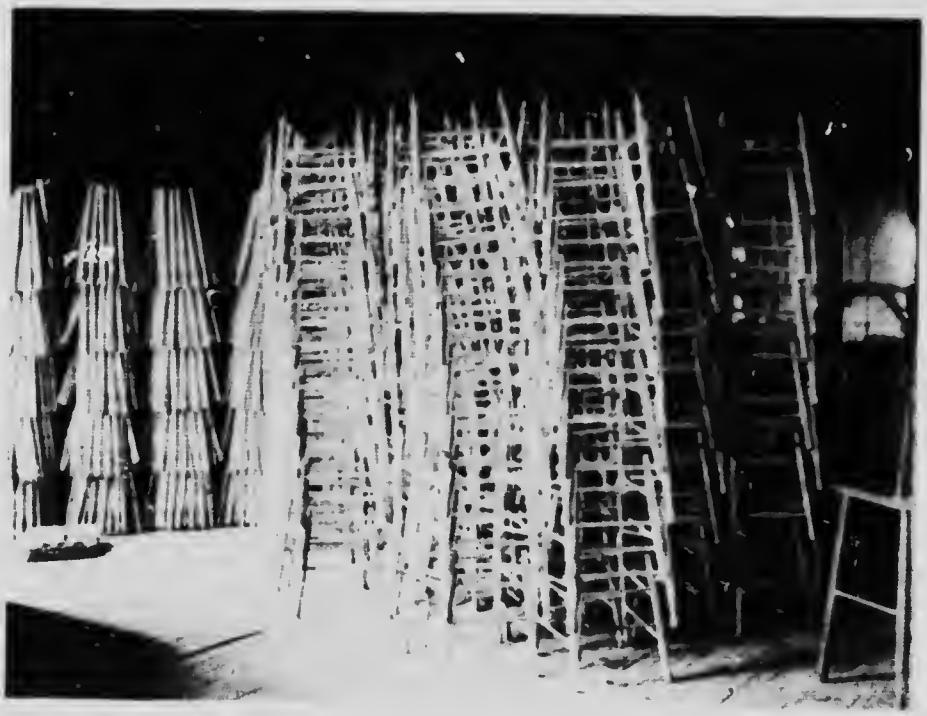

Photo 9543. R. G. LEWIS.

Kitchen chair frames, made mostly of birch, Roxton Mill and Chair Mfg., Co., Ltd., Waterloo, Que.

and door work, and interior finishing. Both eastern and western species are soft, light, and durable. The eastern species is of a lighter colour, is spongy in texture, and has superior physical qualities, being stronger, more durable, harder, and not so easy to split.

The price paid for cedar lumber, $26.68 per thousand feet board measure, is comparatively low.

In Quebec, Ontario, and New Brunswick, the forests of cedar have been largely cut over, at least it is safe to say that the best trees have been cut. White cedar is a very slow-growing tree, mostly found in wet or moist land. In lumbering operations, even if great care is taken, it is almost impossible to avoid the destruction of a large number of young trees which are covered under the heavy slash.

Redwood.—Redwood (*Sequoia sempervirens*) is imported from California. This species furnishes some of the largest trees in the world. Its wood is used as a substitute for white pine and cedar in the boat-building and sash, doors, and building material industries. These are the only two industries which have reported the use of redwood.

Redwood is fairly light and has a moderately fine, very straight grain. It is more durable than pine and harder than white pine and cedar, but is considered to be more brittle and not quite so resistant as either of the others, although it is more impervious to water.

Redwood material was used to the extent of 289,000 feet board measure at an average price of $53.24 per thousand feet board measure. This species is the first in the list of species of which the quantity used is less than one-tenth of one per cent of the total.

Cypress.—Cypress (*Taxodium distichum*) is all imported from the Southern States. It grows very slowly and on wet land. It is fairly soft and light and has a fine grain and texture. In the annual ring there is a very clear distinction between the spring-wood and the summer-wood. Cypress wood has a greasy feeling, without being very resinous. It is supposed to be the most durable soft wood of North America.

Cypress was used by four industries to a total of 194,000 feet board measure, over half being used by the pump, tank, and silo industries. Boat-builders paid the highest price, $79.06 per thousand feet board measure. United States mills cut over a billion feet of cypress yearly.

Butternut.—Butternut (*Juglans cinerea*) is a Canadian tree. In 1915, according to Bulletin No. 58 "Forest Products of Canada, 1915," the province of Quebec produced 246,000 feet board measure of butternut. The wood-using industries report using some 139,650 feet, nearly 57 per cent of the production.

Six industries have reported the using of butternut wood, but 76 per cent of the consumption is taken up by the box and crating industry. The average price paid was $26.04 per thousand feet board measure. The boat manufacturers paid the highest price, $50, and foundry box manufacturers the lowest, $20.

Butternut wood resembles the black walnut a good deal in grain and texture, and is often called "white walnut", but it is considerably lighter in colour, and much softer and weaker.

Spanish Cedar.—Spanish cedar (*Cedrela odorata*) is all imported from Mexico and used in the manufacture of cigar boxes. Its high price, $151.52 per thousand feet board measure, is due to the fact that this wood material is mostly used in the form of veneer. Its price in board feet was obtained by converting superficial square feet into thousand feet board measure, without allowing either for waste or manufacturing cost. The price of Spanish cedar in rough boards or square timber would be about $70 per thousand feet board measure.

Black cherry.—The wood-using industries of the province of Quebec report a consumption of 103,000 feet board measure of black cherry (*Prunus serotina*). In 1915 the saw-mills are reported to have cut 58,000 feet board measure of cherry lumber.

The reports received give only 28 per cent of the black cherry used as being native to the province, while 71 per cent of the supply used, 74,000 feet board measure, was purchased from the United States.

Black cherry is one of the best native hardwoods. It is very much appreciated both for its technical and physical qualities. Black cherry takes a high polish and is of a rich reddish-brown colour, and is marked with occasional burls and "bird's-eyes". This wood has a fine grain and texture, is strong, heavy, and hard.

Photo 9149. R. G. Lewis.

The above engraving, showing pail handles, is given as a suggestion for the close utilization of small pieces of wood. Pail handles require only pieces of raw material 2¼ to 3½ in. long by 4 in. square.

Unfortunately the black cherry supply is very limited in Quebec as well as in Ontario. It is only found isolated or in small groups on farmers' woodlots. It is sometimes brought direct from there to the manufacturer, but is more generally sold by farmers to saw-mill operators.

Seven industries reported the use of black cherry. Car construction used the largest quantity, 59 per cent. Vehicle manufacturers paid the highest price, $155 per thousand feet board measure, while the sash, doors and building material manufacturers paid only $30.29.

Red Gum.—Red gum (*Liquidambar styraciflua*) is all imported from the United States. No red gum trees grow in Canada. This wood material is rapidly becoming more important in the wood-using industries. Its use has been hindered by the difficulty in seasoning. In order to prevent warping and twisting red gum wood needs special steam-drying just after being cut.

In Quebec four industries report using this wood. Machinery manufacturers consumed 76 per cent of the total. The average price was $27·41 per thousand feet board measure, while musical instrument manufacturers paid $65.

Red gum wood has a fine texture and takes a good polish, although it is somewhat cross-grained. It is tough and moderately soft. In colour it is dark brown marked by lighter streaks. This is often taken advantage of by staining red gum to imitate Circassian walnut which it resembles in grain and figure.

Hickory.—The hickory manufactured in Quebec, 39,000 feet board measure, is mostly purchased in the province. Ontario furnished 7,000 feet board measure of raw material, and the United States 2,000 feet. Hickory is peculiar to North America.

Hickory is a valuable hardwood but unfortunately the supply in Quebec and Ontario is becoming rapidly exhausted. This is particularly true of Quebec, which possesses much less hickory than Ontario.

The hickory wood used is made up of four species, but bitternut hickory (*Carya cordiformis*) and shagbark hickory (*Carya ovata*) are commercially the two most important.

The wood-using industries of Quebec use much more hickory wood than is reported here. A large quantity of the material is imported already manufactured from the United States and Ontario, but as this bulletin deals only with raw material this is not included in the statement.

Hickory was used in the raw state by three industries. Manufacturers of vehicles used the greatest quantity. There is no other wood in America that combines better strength, hardness, toughness, elasticity, and durability. It is *par excellence* the wood of the vehicle and handle industries.

Satinwood.—Satinwood (*Xanthoxylum cribrosum*) was used only by car manufacturers for the interior of passenger coaches. The reported cost, $354.50 per thousand feet board measure, is exceedingly high, but this is partly due to the fact that the material is used chiefly as veneer.

Teak.—This species (*Tectona grandis*) was used by manufacturers of boats. It is one of the most valuable of shipbuilding materials, but its price is prohibitive for use in large quantities. This wood is imported from India.

Willow.—Two thousand feet of willow (*Salix*) native to Quebec was used exclusively for making artificial limbs. Willow is soft and tough and is not affected by atmospheric conditions.

Red juniper.—A small quantity of red juniper (*Juniperus virginiana*), sometimes called "red cedar" or "pencil cedar", is reported. It was used for bungs, spiles, plugs, etc. This wood is imported from the Southern States.

Baywood.—Baywood (*Magnolia glauca*) is imported from the United States. One thousand feet was used for patterns.

MINOR SPECIES

In addition to the species of trees described a few minor species were also reported as used in very small quantities. The following are the most important:

Lignum-vitæ a tropical wood used generally for making mallets, wooden balls, sheaves, and pulleys.

Photo 9537. R. G. LEWIS.

Veneer for the manufacture of sewing-machines. The engraving shows five pieces of gum veneer ¼ in. thick, used to build up one sewing-machine table core, Singer Mfg. Co.

Rosewood, used for the most expensive decorative work.
Ironwood, used mostly for making fishing-rods.
Apple-wood, used for tool handles and special purposes.
Ebony, used, probably, for small musical instruments and brush-backs.

Wood-using Industries

The data which form the basis of this bulletin have been received from 864 firms. These are manufacturers using wood as raw material for the manufacture of finished articles or using wood as a means of manufacture or as a packing material for the manufactured articles. The material is received at the factory in various forms such as boards, planks, logs, bolts, or billets, and it is worked up there to make different articles.

The manufacturers who purchased their material already prepared and who have only to assemble the parts have not been included. This is to prevent duplication of reports on the same material.

Many firms are conducting simultaneously different lines of manufacture. Because of this it has often been found difficult to separate the different classes of industries when assigning to each of them the quantity and the kinds of wood used, as the manufacturers do not always classify this wood material according to the different articles they manufacture. Mainly on account of this, articles closely related, manufactured from similar material, have been grouped together under special headings as forming one industry. Whenever fewer than three firms made one class of goods, in order not to disclose the identity of the individual firms these industries were described under one heading as "Miscellaneous."

TABLE C SUMMARY OF WOOD USED IN THE PROVINCE OF QUEBEC, BY INDUSTRIES

Industry.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.						
					Que.	Ont.	U.S.A.	B.C.	N.B.	Foreign.	N.S.
		M. FT. B. M.	$	$ cts.	M. FT. B. M.	M. FT. B. M.	M. FT. B. M.	M. FT. B. M.	M. FT. B. M.	M. FT. B. M.	M. FT. B. M.
Total	**100·0**	**698,459**	**12,409,001**	**17 76**	**596,108**	**41,225**	**36,215**	**15,332**	**7,796**	**1,033**	**750**
Wood-pulp	55·3	386,669	4,237,033	10 95	386,669						
Sash, Doors, etc	13·6	94,956	2,464,441	25 95	83,420	7,980	2,148	1,101	251	56	
Boxes and Crating	10·7	73,752	1,576,926	21 39	55,848	11,457	550	17	4,999	131	750
Car Construction	9·2	64,736	2,511,774	35 71	10,446	8,222	31,160	14,159	15	734	
Furniture	2·8	19,469	399,532	20 52	16,463		431		2,506	72	
Hardwood Flooring	2·5	17,702	348,736	19 70	11,577	6,125					
Miscellaneous	1·8	12,741	339,176	26 62	5,142	6,790	808			1	
Boot and Shoe Findings	0·6	3,989	60,604	15 19	3,989						
Shuttles, Spools, Bobbins, etc	0·5	3,778	114,419	39 29	3,778						
Vehicles	0·5	3,240	98,821	30 50	3,113	51	45			1	
Coffins, Caskets and Shells	0·4	2,782	62,990	22 64	2,745		30			7	
Boats	0·4	2,482	96,696	38 96	2,260	15	113	49		15	
Musical Instruments	0·3	2,161	77,646	35 93	1,708	130	308			15	
Cooperage	0·2	1,576	19,279	12 23	1,305	271					
Machinery	0·2	1,391	48,000	34 51	979	12	393	6		1	
Handles and Tools	0·2	1,365	23,186	17 21	1,352		13				
Pumps, Tanks and Silos	0·2	1,295	39,475	30 48	970	125	200				
Woodenware	0·2	1,251	17,825	14 21	1,251						
Agricultural Implements	0·2	1,150	23,259	20 23	1,132	8	10				
Cheese Boxes	0·1	1,113	26,350	23 68	1,104	9					
Patterns	*	293	11,615	39 64	250		3		34		
Refrigerators	*	269	5,921	22 02	269						
Foundry Boxes	*	251	4,192	16 70	251						
Toys and Sporting Goods	*	15	774	17 20	45						

*Less than one-tenth of 1 per cent.

DETAILED DESCRIPTIONS OF INDUSTRIES.

The twenty-four industries and groups of industries which are responsible for the consumption of the wood material described in the foregoing part of this bulletin, are detailed hereunder separately, being given in alphabetical order.

Photo 9544, R. G. LEWIS.

Sewing-machine table cores. The one on the right hand is made of native poplar; the other is made of imported gum veneer.

TABLE I.—AGRICULTURAL IMPLEMENTS

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.		
					Que.	Ont.	U.S.A.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**1,150**	**23,259**	**20 23**	**1,132**	**8**	**10**
Birch	48·9	563	11,105	19 72	563	..	..
Spruce	23·4	269	4,701	17 48	269	..	..
Maple	13·1	151	3,546	23 48	151	..	..
Pine	6·3	73	1,460	20 00	73	..	..
Basswood	5·5	63	1,226	19 46	63	..	..
Oak	1·1	13	596	45 85	5	8	..
Hard Pine	0·9	10	450	45 00	..	..	10
Ash	0·3	3	60	20 00	3	..	..
Balsam Fir	0·3	3	60	20 00	3	..	..
Elm	0·2	2	55	27 50	2	..	..

Under this heading are included implements for cultivating the soil, for harvesting the crops, and for marketing farm products.

The agricultural implement industry ranks nineteenth in the list, with a consumption of 1,150,000 feet board measure of wood, which equals 0·2 per cent of the total. However, it may be noted that with the exception of one species—[illegible]rd pine, forming less than one per cent—all the woods used are native. This is a good example of an important industry utilizing native woods and appreciating their value.

Birch forms nearly 50 per cent of the total. The varieties used are yellow birch and sweet birch (in small quantities). Birch has become our most important hardwood. This species is used for framework and where strength and elasticity are required. Maple is often used as a substitute for birch. With elm and ash it is used for neck-yokes and whippletrees. On account of its stiffness maple is mainly used for heavy framework. Basswood, spruce, and pine are employed for table- and box-work. Red oak and hard pine are used mostly for plough handles.

The material is generally purchased in the form of planks and boards, but about 10 per cent is purchased in the form of logs. This industry paid an average price of $20.23 per thousand feet board measure for its wood material, which is $2.47 more than the average of all the industries together.

The product of this industry is sold mainly in the province of Quebec, with a fair proportion entering the markets of New Brunswick and the western provinces.

TABLE 2—[illegible]

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.				
					Que.	Ont.	U.S.A.	B.C.	Foreign.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**2,482**	**96,696**	**38 96**	**2,260**	**15**	**143**	**49**	**15**
Spruce	44·0	1,093	24,476	[illegible]0	1,086	7			
Pine	32·7	812	34,270	[illegible]	804	8			
Elm	7·6	189	11,565	61 19	189				
Oak	6·9	172	12,935	75 20	139		33		
Redwood	3·4	85	4,980	58 59			85		
Cedar	1·6	39	1,928	49 44	19		3	17	
Douglas Fir	1·3	32	1,770	55 31				32	
Cypress	0·6	16	1,265	79 06			16		
Mahogany	0·5	11	1,777	161 55					11
Ash	0·3	8	450	56 25	8				
Birch	0·3	8	218	27 25	8				
Hard Pine	0·3	6	210	35 00			6		
Teak	0·2	4	600	150 00					4
Maple	0·1	3	72	24 00	3				
Butternut	0·1	2	100	50 00	2				
Cherry	*	1	40	40 00	1				
Basswood	*	1	40	40 00	1				

*Less than one-tenth of 1 per cent.

The boat-building industry, in the order of amount of wood used, comes twelfth in the list, with a total wood consumption of 2,482,000 feet board measure, forming 0·4 per cent of the total.

The manufacturers include, in this class build steamboats, scows, tugs, sailing vessels, launches, sail-boats, skiffs, row-boats, canoes, and oars.

It is very likely that the total wood consumption is far from being fully represented. The boat-building industry is one which is very widespread. It is often conducted privately and for personal use, especially in fishing localities, as on the north shore of the St. Lawrence and around the Gaspé peninsula.

The manufacture of large wooden vessels was at one time a very important industry in the province of Quebec. This industry has been abandoned, owing largely to the introduction of steel in boat construction and also to a certain extent to the scarcity of suitable timber.

Boat-builders used seventeen kinds of wood for which they paid an average price of $38.96 per thousand feet board measure, the second highest price paid by any of the industries. The prices of all the woods used rank very high, as boats require first-class material.

With the exception of redwood, cypress, mahogany, hard pine, and teak, which form 5 per cent of the total, all the species used are native to Canada. The province of Quebec furnished 91 per cent of the material used in this industry. Spruce leads and pine figures a good second. These two species form over 76 per cent of the total consumption.

It is not considered necessary to enter into a detailed description of the use of each species. The boat-building industry and its requirements are well known. However, it is interesting to note the comparatively prominent rank occupied by redwood. This wood material is used almost entirely for planking launches and small boats. Launches require a very high grade material. In the past white pine and cedar were used, but owing to the scarcity of and difficulty in obtaining wood of these species of superior quality imported wood is now being used.

Apart from oak, birch, and teak, which are used almost exclusively for framework such as keels, stems, ribs and gunwales, most of the hardwoods mentioned are used for inside finishing and decorative purposes.

The manufacture of oars requires a very good material. Oars are made of oak, ash, elm, birch, and basswood. Birch and basswood oars are used for light and small craft. In softwoods oars are made of spruce, pine, and hard pine. Clear spruce makes a fairly strong and light oar. It is used almost exclusively in the fishing centres.

TABLE 3—BOOT AND SHOE FINDINGS

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.
					Que.
Total	**100·0**	M FT. B. M. **2,482**	$ **66,661**	$ cts. **15 13**	M FT. B. M. **3,389**
Maple	89·2	3,558	55,466	15 59	3,558
Basswood	6·9	277	3,234	11 68	277
Birch	2·9	114	1,454	12 75	114
Beech	0·6	25	300	12 00	25
Cedar	0·4	15	150	10 00	15

Although this industry comes eighth in the list its wood consumption amounts to only 3,989,000 feet board measure, 0·6 per cent of the total. This quantity is made up of five species, four of them being hardwoods. Maple alone forms over 89 per cent of the total.

The commodities manufactured by the boot and shoe findings industry are: shanks, laps, lasts, pegs, and filler-blocks.

Cedar wood is used for lasts while filler-blocks are made only of basswood, which is also used for lasts. Maple, birch, and beech are used for lasts, shanks, and laps. Pegs are made exclusively of birch. The bulk of the maple material is turned into last-blocks; because of its hardness it is found very suitable for the purpose.

Although practically all the material used is hardwood, the average price paid by the boot and shoe findings industry ranks low, only two industries paying less. This is due to the fact that most of the material is received in the form of round logs.

The boot and shoe findings industry is one of the four in which all the material used is native to the province, and of these four it is the second in importance in quantity of material.

The field of trade is Canada and the United States.

TABLE 4—BOXES AND CRATING

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.						
					Que.	Ont.	N.B.	N.S.	B.C.	Foreign.	U.S.A.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**73,752**	**1,576,926**	**21 39**	**55,848**	**11,457**	**4,999**	**750**	**17**	**131**	**550**
Spruce	72·7	53,638	1,119,271	21 43	42,350	6,293	4,245	750			
Pine	12·4	9,147	197,307	21 57	4,751	3,646	735		15		
Basswood	6·0	4,371	108,570	24 84	3,806	565					
Balsam Fir	3·0	2,199	30,220	13 74	2,199						
Birch	2·0	1,444	19,798	13 71	1,422	3	19				
Poplar	1·8	1,317	23,906	18 15	367	950					
Tulip Tree	0·7	550	10,070	18 18							550
Elm	0·5	338	8,373	24 78	338						
Maple	0·3	251	2,765	11 02	251						
Hemlock	0·2	182	2,399	13 19	182						
Spanish Cedar	0·2	131	19,850	151 52						131	
Butternut	0·1	106	2,665	25 14	106						
Ash	0·1	76	1,710	22 50	76						
Douglas Fir	*	2	90	45 00					2		

*Less than one-tenth of 1 per cent.

The box and crating industry is one of the most important of the province of Quebec, coming third in the list of wood-using industries, with a consumption of 73,752,000 feet board measure equal to 10·7 per cent of the total.

This industry comprises the manufacture of boxes, box shooks, crates and crating, of which the main classes are the following: butter boxes, tobacco boxes, cigar boxes, trunks, shooks, crates and all kinds of packing boxes used in trade for shipping dry goods and eatables.

A large number of factories are engaged in this industry. Among the number some factories are engaged in a special line, such as cigar boxes, butter boxes, tobacco boxes, etc. Some manufacture most of the different kinds of boxes, while others make some of these containers as side lines along with another class of commodity.

Fourteen species of wood are used, spruce as usual taking the lead, forming 72·7 per cent of the total. Wood-pulp is the only industry which has reported the consumption of a larger quantity of this species. Coniferous wood material forms 88·3 per cent of the total consumption. Basswood is the main hardwood employed, forming 6 per cent.

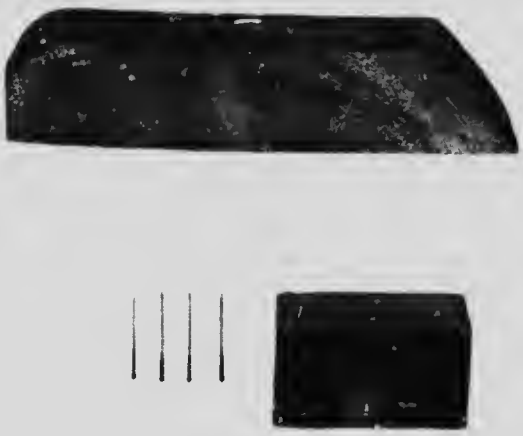

Photo 9148. R. G. LEWIS.

Canadian matches are made almost entirely from white pine. The above engraving shows the different stages of the manufacture of matches. The larger block of wood appears in the first stage of preparation; the one below is ready to enter into the machines from which it emerges in the finished form.

The average price paid was $21.39 per thousand feet board measure. In Ontario the same class of manufacturers paid $18.53 in 1912, and in the Maritime Provinces $12.30 in 1913. The price of lumber had risen considerably from 1912 to 1915.

In many instances spruce, pine, and balsam fir are used indifferently in most of the commodities named above, but in a few instances as for butter boxes or other articles intended to contain foodstuffs, spruce and balsam fir are preferred to pine, on account of their odourless and tasteless qualities.

Basswood and poplar are mostly used for tobacco boxes and also for trunks, with a good deal of elm and some birch. All the Spanish cedar and most of the butternut is used for cigar boxes. A fairly large proportion of birch and elm is cut into sheets of veneer of different sizes for exportation to England.

Less than 1 per cent of the raw material was purchased outside of Canada and over 75 per cent was purchased in the province of Quebec.

The form of the raw material received at the factory is generally one-inch board or plank, which is worked at the factory to a suitable thickness. Spanish cedar and butternut are mostly used in the form of veneer, varying in thickness from $\frac{1}{4}$ to 1 95 in.

The province of Quebec consumes a good proportion of the box and crating material, while the remainder is for the most part exported to the British Isles and Bermuda in the form of box shooks and veneer bales.

TABLE 5—CAR CONSTRUCTION

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.					
					U.S.A.	Ont.	Que.	B.C.	N.B.	Foreign.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**64,736**	**2,311,771**	**35 71**	**31,160**	**8,222**	**10,416**	**14,159**	**15**	**731**
Hard Pine	41·5	26,892	946,208	35 19	26,892					
Pine	22·4	14,476	423,300	29 24		8,172	6,304			
Douglas Fir	21·9	14,159	534,821	37 77				14,159		
Oak	4·4	2,816	91,190	32 38	2,816					
Spruce	4·0	2,606	56,786	21 79			2,606			
Tulip Tree	1·7	1,114	52,346	46 99	1,114					
Birch	1·2	776	28,219	36 40		10	751		15	
Mahogany	1·1	734	119,538	162 86						731
Basswood	0·9	604	23,618	39 10		10	594			
Ash	0·6	372	24,300	65 32	262	20	80			
Maple	0·2	111	2,876	25 91			111			
Black Cherry	0·1	61	6,375	104 50	61					
Chestnut	*	10	394	39 40	10					
Satinwood	*	5	1,773	354 50	5					

*Less than one-tenth of 1 per cent.

In the list of industries car construction comes fourth, immediately after boxes and crating, with a consumption of 64,736,000 feet board measure, 9·2 per cent of the total. This industry uses wood for the manufacture and repairing of passenger, freight, baggage, mail, and refrigerator cars, electric cars, snow-ploughs, etc.

Fourteen kinds of wood are used, with hard pine leading. Coniferous wood material forms 89·8 per cent and hardwood 10·2 per cent.

This industry depends largely on importations from the United States which furnish 48 per cent of the total wood used. The province of Quebec furnishes only 16 per cent and the remainder, 36 per cent, is mainly purchased in British Columbia and Ontario.

The car construction industry used 93 per cent of all the Douglas fir purchased from British Columbia, and 51 per cent of the hard pine imported for all industries. Hard pine and Douglas fir are especially valuable for car construction work, both on account of physical qualities and the fact that these materials

can be purchased in large and clear dimensions. They are used for sills, beam framework, flooring and lining.

Pine forms 22·4 per cent. It is all white and red pine. This last name species forms nearly half. It is used chiefly for passenger cars, flooring, woode parts of locomotives, and platforms.

Photo 9535. R. G. LEWIS.

The different stages of the manufacture of clothes-pins. The common clothes-pin is made of ⅞ in. lumber. It requires a piece of wood ¾ in. square and 4 in. long. The spring pin, shown below, is generally made of ⅛ in. veneer.

Quebec furnished all the spruce, forming 4 per cent of the industry consumption. This species was chiefly used for box- and flat-car flooring, repair work on the same, and platforms.

Birch was used mainly for interior finishing of colonist or second-class passenger cars. In a few instances it was used also for first-class passenger cars. It forms 1 per cent.

Basswood is valued for general use and for the interior of refrigerator cars.

Among the hardwoods, oak takes the leading place. A large quantity of the oak material imported was used for framework, particularly in freight car construction Oak has a very wide range of use. Ash and maple are used in the seats and lining of second-class passenger cars. Ash is also used for engine cabs.

The better species of hardwoods, such as tulip, mahogany, cherry, walnut, satinwood, and some oak, are used for the interior of first-class passenger cars.

The price paid for car building material is $35.71 per thousand feet board measure, being fourth highest in the list. The industry demands a high grade material. Moreover, as the woods native to Quebec formed only 16 per cent, the cost of freight on the rest of the material helped to increase the price. The cars built and repaired in Quebec are used or sold in Canada.

TABLE 6—CHEESE BOXES

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.	
					Que.	Ont.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**1,113**	**26,350**	**23 68**	**1,101**	**9**
Spruce	44·0	490	5,585	11 40	488	2
Elm	36·0	401	17,816	44 43	394	7
Balsam Fir	11·9	132	1,527	11 56	132	
Birch	5·7	64	1,050	16 41	64	
Hemlock	1·7	19	266	14 00	19	
Basswood	0·4	4	60	15 00	4	
Maple	0·1	1	16	16 00	1	
Ash	0·1	1	15	15 00	1	
Pine	0·1	1	15	15 00	1	

Under this heading are included cheese boxes, headings, sides made of veneer $\frac{1}{5}$ in. thick, and a small quantity of butter-box material which could not be differentiated.

The cheese box industry comes twentieth on the list, but notwithstanding its rank it is considered an important industry in the province because of the increasing importance of the cheese industry in Quebec. The quantity of wood material reported, 1,113,000 feet board measure, forms 0·1 per cent of the total.

Spruce wood predominates. Spruce, balsam fir, hemlock, and basswood are chiefly used for headings while most of the hardwoods—elm, birch, maple and ash—are cut into thin lumber or veneer of $\frac{1}{5}$ of an inch and used for box sides. The cheese box industry uses a large percentage of hardwood material, 42·3 per cent. Elm is the leading hardwood species. It is considered much superior to birch and maple on account of its toughness and softness after being steamed. Manufacturers complain that the supply is unfortunately getting very scarce. This is well illustrated by the price paid for elm, $44.43 per thousand feet board measure, compared with $15.80 the average paid for birch, maple, and ash.

The hardwood material is received at the factory in round log form, the softwood in both logs and boards. Over 99 per cent of the material reported is native to Quebec. Ontario furnished 7,000 feet of elm. The field of trade for cheese boxes is mainly local.

TABLE 7—COFFINS, CASKETS AND SHELLS

Kind of Wood.	Per cent.	Quantity	Value.	Average Value.	Supply by Regions.		
					Que.	U.S.A.	Foreign
		M FT. B. M	$	$ cts	M FT. B. M	M FT. B. M	M FT. B. M
Total	**100 0**	**2,782**	**62,990**	**22 64**	**2,745**	**30**	
Basswood	48·9	1,360	33,808	24 86	1,360		
Pine	29 9	831	15,826	19 04	831		
Spruce	17·1	477	8,296	17 39	477		
Oak	2 0	55	3,150	57 27	25	30	
Birch	1 2	31	715	21 03	31		
Balsam Fir	0 3	7	121	17 29	7		
Mahogany	0 2	6	715	119 17			
Hemlock	0 1	4	91	22 75	1		
Poplar	0 1	3	73	24 33	3		
Ash	0·1	2	35	17 50	2		
Elm	0 1	2	35	17 50	2		
Walnut	*	1	125	125 00			

*Less than one-tenth of 1 per cent.

This industry manufactures coffins, caskets, and shells. It comes eleventh in the list and its total wood consumption reported is 2,782,000 feet board measure, 0·4 per cent of the total. Only a few large firms are exclusively engaged in the manufacture of coffins, shells, and caskets, many sash and door manufacturers making them, generally on order, to meet local demand.

Twelve species of wood are used, with basswood predominating. Basswood leads in only two industries, the other one being musical instruments. Two industries only, boxes and crating, and sash, door and building material, employ more basswood than this one.

The hardwoods are used rather more than the softwoods, these two groups forming respectively 51·6 and 48·4 per cent of the total.

The manufacturers of coffins, etc., use solid wood, no veneer. Basswood is stained and varnished to imitate rosewood or oak. Birch is stained to imitate mahogany. The hardwoods of inferior quality are covered with cloth. Pine and spruce are used in cloth-covered coffins or for shells as is most of the balsam fir and hemlock. The average price paid is $22.64 per thousand feet board measure, or nearly $5 above the average price for all the industries. It compares well with Ontario and the Maritime Provinces which paid $23.84 and $21.16 respectively.

Nearly all the wood material is purchased in Quebec; the United States and other foreign countries supplying only 37,000 feet board measure. The material is purchased in the form of boards and planks.

The field of trade extends to all the provinces of the D inion.

TABLE 8.—COOPERAGE.

Kind of Wood	Percent	Quantity	Value	Average Value	Supply by Regions: Que	Supply by Regions: Ont
		M.FT. B.M.	$	$ cts. M.FT. B.M.	M.FT. B.M.	M.FT. B.M.
Total	**100.0**	**1,576**	**19,279**	**12 23**	**1,305**	**271**
Birch	63.1	1,000	12,000	12 00	1,000	
Maple	15.9	250	2,750	11 00	250	
Basswood	13.2	208	2,253	10 83		208
Elm	7.1	112	2,110	19 11	50	62
Spruce	0.2	4	81	20 25	4	
Oak	0.1	1	10	10 00		1
Balsam Fir	0.1	1	15	15 00	1	

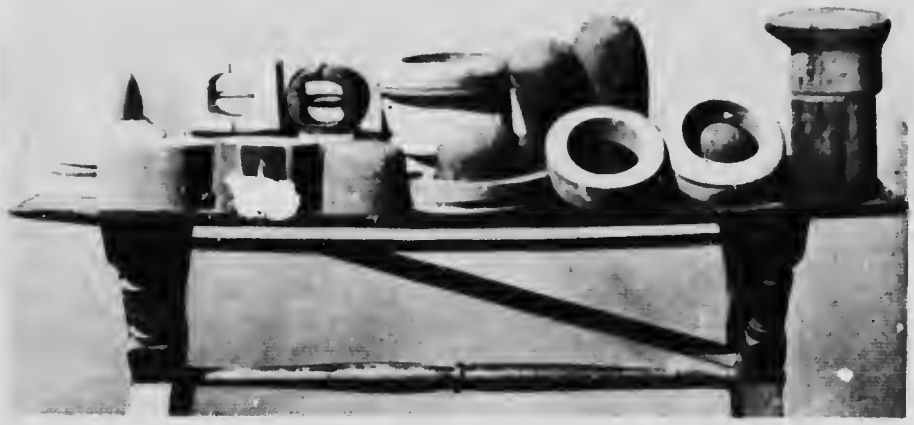

Photo 9545. R. G. LEWIS.

Hat- and cap-blocks made of birch, beech, and maple. B. J. Hayes, Montreal.

The cooperage industry comes fourteenth in the list. It includes tight and slack cooperage. It is true that the province of Quebec has not developed this industry to any great extent, particularly tight cooperage, on account of the lack of suitable material. However, the figures given in the above table hardly represent the value of the industry. This is largely due to the fact that there is a good deal of slack cooperage work, and even some tight cooperage work, carried on in the fishing centres, especially around the Gaspé peninsula and below Quebec along the north shore of the St. Lawrence, where cooperage articles are chiefly made in numerous small shops by individuals conducting this trade during winter months, and it is difficult, almost impossible, to reach them by correspondence. These cooperage products are sold to local fish

dealers for shipping dry-cured and pickled fish. The staves and heading of cooperage stock are made of spruce and fir wood, the hoops chiefly of birch and ash.

Seven kinds of wood are reported in the above table, Spruce and balsam fir are the only softwoods employed and are in small quantities, forming only 0·3 per cent of the total reported. Birch forms 63·1 per cent of the total wood used. A comparatively large quantity of birch is cut into veneer sheets which are shipped to the British Isles.

The material used in this industry is purchased in the province, with the exception of 17 per cent made up mostly of basswood and elm bought from Ontario. The raw material is received in the form of round logs or bolts. The firms that purchased manufactured material and merely put it together are not included. The average price paid is next to the lowest, coming above wood pulp.

As to the mode of manufacture and the use which is made of the different kinds of wood reported, it may be said that a certain proportion of all the species reported is used for sawn tight staves. Spruce, oak, and balsam fir are used for split staves. Headings are made of birch, spruce, and balsam fir.

TABLE 9 FOUNDRY BOXES

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions. Que.
		M FT. B. M	$	$ CTS.	M FT. B. M
Total	**100 0**	**251**	**4,192**	**16 70**	**251**
Spruce	72·5	182	2,375	13 05	182
Pine	26·3	66	1,766	26 76	66
Butternut	0·4	1	20	20 00	1
Hemlock	0·4	1	16	16 00	1
Balsam Fir	0·4	1	15	15 00	1

This industry is the twenty-third in the list, the second to the last, with a total consumption of less than one-tenth of 1 per cent. Moulding boxes are given under a special heading merely to show the importance of wood even in the putting into shape of its most largely used substitutes, steel and iron.

Reports show that at least 251,000 feet board measure of wood material are yearly required for moulding boxes and flasks. The rough usage and intense heat to which these boxes are subjected usually limit their usefulness to a relatively short period. There is a tendency to replace wooden boxes by metal boxes as these are cheaper in the long run on account of durability, but up to the present time wood has been preferred both for its cheapness and strength.

Five species of wood are used. Spruce leads, having fairly suitable qualities for the purpose and being cheap and easily obtained. Pine is considered much superior to spruce for foundry boxes. It is claimed that it warps less when exposed to intense heat than any other Canadian wood. All the wood used was purchased in Quebec, generally in the form of two-inch planks. The price paid is over $1 below the average.

TABLE 10.—FURNITURE

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.			
					Que.	N.B.	U.S.A.	Foreign
		M. FT. B.M.	$	$ cts.	M. FT. B.M.	M. FT. B.M.	M. FT. B.M.	M. FT. B.M.
Total	**100·0**	**19,469**	**399,532**	**20 52**	**16,163**	**2,500**	**131**	**72**
Birch	62·7	12,206	234,329	19 20	9,806	2,400		
Maple	11·3	2,203	42,714	19 39	2,203			
Basswood	4·5	869	21,347	24 57	866		3	
Elm	4·3	833	15,485	18 37	833			
Spruce	4·2	818	13,540	16 55	718	100		
Ash	4·2	810	16,644	20 55	810			
Beech	3·0	595	9,788	16 45	595			
Oak	2·3	441	18,315	41 60	150		291	
Pine	1·6	314	6,716	21 39	314			
Poplar	0·8	151	1,755	11 62	151			
Tulip Tree	0·5	115	3,055	26 57			115	
Mahogany	0·4	72	13,675	189 93				72
Chestnut	0·1	19	1,220	64 21			19	
Hickory	*	4	109	27 25	3		1	
Cherry	*	3	340	113 33	3			
Red Gum	*	3	45	15 00			3	
Walnut	*	2	400	200 00			2	
Butternut	*	1	25	25 00	1			

*Less than one-tenth of 1 per cent.

This is an important industry, coming fifth in the list with a total consumption of 19,469,000 feet board measure, or 2·8 per cent of the total. The products manufactured include all kinds of household furniture, school and church furniture, office and store furniture, veranda and steamboat chairs, picture frames, etc. The line between the products of this industry and inside trimmings, included under sash, door and building material, is not very clearly marked, and the material used by both is often difficult to differentiate. There are only a few furniture factories engaged in interior finishing work, but a large number of sash, door and building material factories make furniture and fixtures.

The furniture industry uses eighteen kinds of wood; three industries, only, using more. With the exception of three species all are native to Canada. The province of Quebec furnishes 84·5 per cent of the raw material, of which less than 3 per cent is purchased outside of Canada. Canadian woods thus make a good showing in this industry.

Only three kinds of softwoods are used. Hardwoods form 93 per cent of the raw material consumed.

Birch, the leading Canadian hardwood, is at the head in this industry, forming 62·7 per cent. Spruce is the leading softwood, comprising 4·2 per cent. Most of the furniture manufactured in Quebec is of medium quality. A large quantity of birch is used in the manufacture of chairs. In general, birch, maple, ash, beech, and elm are used indifferently in framework, which does not show, and in outside parts, which do show. Birch is still used in the form of veneer

for drawer bottoms and panels. Most of the furniture made of birch is stained to imitate superior woods. Birch is often stained to imitate mahogany. Nearly all the furniture made of Canadian woods is solid. Ash and elm are preferred for chairs, especially heavy rockers.

Basswood, spruce, and pine are used mostly for drawers and backs. This is also the case with beech, which is often used for drawer sides in office furniture. A large quantity of basswood goes into kitchen furniture.

Photo 9548. R. G. LEWIS.

Wooden pipes for organs. Clear spruce is the most valued wood for the manufacture of organ pipes. Its value lies in its elasticity and resonance.

The higher classes of wood, such as oak, mahogany, hickory, cherry, walnut, red gum, tulip, and some maple veneer, are used in the manufacture of higher quality furniture. A good deal of the material is used as veneer on birch core.

It may be noted that a comparatively large proportion of birch, maple, and beech, and some oak, chestnut, and red gum are used for church pews and school furniture.

The raw material is generally received at the factory in the form of boards and planks, with a comparatively small quantity in the form of round logs.

The price paid, $20.52 per thousand feet board measure, is a good average, being nearly $3 above the average price for all industries.

The furniture industry uses a greater quantity of maple than any other industry.

The field of trade of this industry covers all the province of Quebec and extends to all the other provinces of Canada and to Newfoundland.

TABLE II—HANDLES AND TOOLS

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.	
					Que.	U.S.A.
		M FT. B.M.	$	$ cts	M FT. B.M.	M FT. B.M.
Total	**100·0**	**1,365**	**23,486**	**17 21**	**1,352**	**13**
Birch	35·5	484	7,271	15 02	481	..
Maple	35·0	478	7,737	16 19	478	..
Ash	20·3	277	4,953	17 88	277	..
Beech	7·8	106	1,970	18 58	106	..
Cherry	1·0	14	1,360	97 14	1	13
Basswood	0·2	3	65	22 00	3	..
Hickory	0·1	2	110	55 00	2	..
Spruce	0·1	1	20	20 00	1	..

The handle and tool industries do not occupy a high rank in the list, coming sixteenth, with a percentage of 0·2 per cent of the total, but the industry has a special importance for the reason that 99 per cent of the raw material manufactured is native to the province. The remainder is purchased from the United States.

Handle and tool manufacturers are experts in the physical qualities of our native woods, and know how to utilize them best to suit different purposes.

Almost all the material used is hardwood; spruce comprises only 0·1 per cent. Birch still leads but maple is a good second. Ash comes third, forming 20·3 per cent.

Broom handles are made of birch, maple, and beech; axe handles of maple, and hickory; hay-fork handles of white ash.

Second-growth white ash is very much valued for the manufacture of hay-fork handles or any other steam-bent handle, on account of its elasticity and ability to keep its shape. The last named quality makes second-growth white ash more appreciated than hickory for this particular purpose.

Birch is used for shovel handles and snow-shovels, as is most of the basswood; beech is used for carpenters' planes and levels. All of the hickory reported was used for telegraph and railway tools.

The manufacturers of handles and tools complain that they cannot find in Quebec the raw material desired, in sufficient quantity to supply the demands of the industry. A fairly large number of handles are purchased ready-made from Ontario and the United States. This manufactured material has not been included here, as the bulletin deals only with raw material manufactured inside of the province.

The raw material is received at the factories mostly in the form of round logs. This has the effect of lowering its price which is $17.21 per thousand feet board measure, the nearest to the general average for all the industries.

TABLE 12—HARDWOOD FLOORING

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.	
					Que.	Ont.
		M FT. B. M.	$	$ cts	M FT. B. M.	M FT. B. M.
Total	**100·0**	**17,702**	**348,736**	**19 70**	**11,577**	**6,125**
Birch	87·0	15,409	308,233	20 00	11,035	4,374
Maple	11·0	1,941	32,949	16 98	190	1,751
Beech	1·4	252	5,954	23 63	252	.....
Poplar	0·6	100	1,600	16 00	100	.....

Photo 9549. R. G. LEWIS.

Pipe organs. St. Hyacinthe, Quebec, has two large organ factories.

Hardwood flooring comes sixth in the list, using annually 17,702,000 feet board measure, or 2·5 per cent of the total. This industry is really engaged in the manufacture of interior finishing and building material, but owing to the importance of this line and the fact that it constitutes a special line of work for a few firms it has been treated separately. Notwithstanding its rank only four kinds of wood are reported. All the material used is Canadian grown, of which 65 per cent is native to the province of Quebec. The remainder is purchased from Ontario.

Birch predominates, forming 87 per cent. Birch is certainly the most popular Canadian hardwood for flooring. It gives very good satisfaction,

being easier to season and work than maple and not so susceptible to warping. The colour of its wood is darker and more uniform. A large quantity of maple flooring goes into public buildings. Beech is often mixed with birch. Poplar flooring is gradually coming into use; it makes a solid and noiseless flooring, the main difficulty being in seasoning it. Oak was not reported.

Some firms prepare the finished material from lo[illegible]ut the majority purchase the rough lumber and merely finish the produc[illegible]

The average price paid for the rough material was $1.[illegible] thousand feet board measure, which was nearly $2 above the general av[illegible] The greater part of the hardwood flooring manufactured in Quebec is used [illegible] the province. A good proportion is sold outside of the province or exported to foreign countries.

TABLE 13—MACHINERY

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.				
					Que.	U.S.A.	Ont.	B.C.	Forc.
		M FT. B. M.	$	$ cts	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**1,391**	**48,000**	**34 51**	**979**	**363**	**42**	**6**	**1**
Birch	30·8	428	9,240	21 59	428				
Oak	19·0	265	15,912	60 05	46	218	1		
Spruce	12·9	179	3,834	21 42	179				
Pine	9·3	129	5,391	41 79	88		41		
Basswood	8·5	119	2,335	19 62	119				
Maple	7·2	100	4,341	43 41	54	46			
Red Gum	5·4	75	1,875	25 00		75			
Beech	1·7	24	660	27 50	24				
Elm	1·6	22	773	35 13	22				
Ash	1·4	19	1,468	77 26	19				
Hard Pine	1·4	19	1,093	57 53		19			
Douglas Fir	0·4	6	368	61 33				6	
Tulip Tree	0·1	2	180	90 00		2			
Cypress	0·1	2	130	65 00		2			
Mahogany	0·1	1	250	250 00					1
Walnut	0·1	1	150	150 00		1			

The wood consumed by this industry is used for sewing-machines, elevators, scales, railway velocipedes, grinding machines, saw-mills, flour-mills, cotton-mills, engine bases, boot and shoe machinery, etc. Very few machines are made into which wood does not enter to some extent, on account of its technical and physical qualities, of which the most important in machinery work are lightness, elasticity, resistance to conduction of heat, and electricity.

Sixteen species of wood were used, making a total of 1,391,000 feet board measure, or 0·2 per cent of the grand total.

Hardwood forms 75·9 per cent of the total used, with birch leading. It may be noted that birch leads in ten industries out of a total of twenty-four. This indicates the importance of this Canadian wood. No other approaches so wide a range of use.

In heavy machinery, birch, maple, and oak may be used more or less indiscriminately for bases, rollers, and handles so far as the immediate result is concerned, but taking into account the qualities of durability pertaining to each species manufacturers use them according to the conditions to which the machinery is exposed. Most of the spruce, native pine, Douglas fir, and hard pine are used for saw-mill carriages and framework of saw-mill machinery. Spruce is extensively used in grinding machines and boot and shoe machinery.

In sewing-machines, birch, maple, gum wood, and oak are used for tables made of solid wood or as a core under veneer for higher class machines. Tulip is used a great deal as a core, but is also used for drawer bottoms. Birch is the main Canadian wood for veneer core; maple is seldom used as such on account of its tendency to warp. Red gum is used for drawers.

A good deal of maple, oak, mahogany, and walnut is used as veneer in the manufacture of sewing-machines. The greater proportion of the material is purchased in the form of boards, planks, and dimension lumber of a superior grade. The average price paid is given at $34.51 per thousand feet board measure, which is a high average, only four industries paying more.

The province of Quebec provides over 70 per cent of the raw material used. Imports from the United States account for 26 per cent. The remainder is chiefly supplied by Ontario. The Douglas fir is purchased from British Columbia.

TABLE 14—MUSICAL INSTRUMENTS.

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.			
					Que.	Foreign.	U.S.A.	Ont.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**2,161**	**77,646**	**35 93**	**1,708**	**15**	**308**	**130**
Basswood	33·0	714	17,784	24 91	714	.....	.....	.....
Birch	21·6	466	12,609	27 25	466	.....	.....	.....
Pine	13·0	280	7,025	25 09	280	.....	.....	.....
Tulip Tree	8·9	192	13,460	70 15	.....	.....	192	.....
Maple	7·6	165	5,373	32 56	80	.....	35	50
Spruce	5·7	123	3,101	25 21	123	.....	.....	.....
Elm	5·6	120	3,840	32 00	40	.....	.....	80
Chestnut	2·6	55	2,540	46 18	.....	.....	55	.....
Oak	0·9	20	1,715	85 75	.....	.....	20	.....
Mahogany	·7	15	7,800	520 00	.....	15	.....	.....
Ash	0·2	5	125	25 00	5	.....	.....	.....
Walnut	0·1	3	1,980	660 00	.....	.....	3	.....
Red Gum	0·1	3	195	65 00	.....	.....	3	.....

This industry comes thirteenth in the list demanding a yearly wood supply of over 2,000,000 feet board measure, which forms 0·3 per cent of the total.

Pianos and organs form the bulk of the product of the musical instrument factories of Quebec.

This industry uses thirteen kinds of wood, basswood leading and forming one-quarter of the material reported. Spruce is specially used for air-pipes

for organs. Pine and basswood are also used for this purpose, but not to so large an extent. No other wood can compete with spruce for this purpose with the possible exception of balsam fir, if boards of proper size could be obtained. Balsam fir is not, however, reported. Spruce is valued for its resonance. Tulip is used for key- and air-pieces which require strength, elasticity, and permanency of shape. Some manufacturers have experimented with basswood as a substitute for tulip for key-pieces, but it did not prove very satisfactory on account of its tendency to warp.

Photo 7363. J. A. DOUCET.

Wagon parts made of birch, ash, and oak, ready for shipment at the factory of Desjardins & Co., St. André de Kamouraska, Que.

In the manufacture of pianos, birch, maple, and elm are used indiscriminately for frame work. Maple is also specially used on account of its rigidity for the key-board, in the form of built-up material. Basswood, tulip, chestnut, and birch are all used in core-work under veneers of mahogany, maple, walnut, oak, and red gum. A considerable quantity of the maple veneer used is made of native wood and is of Canadian manufacture. Sounding-boards in pianos are made of quarter-cut spruce exclusively. This requires a material of first quality. The manufacturers consider that eastern spruce is superior to western spruce for this purpose because of the former being more resonant. In many instances sounding-boards are purchased from the United States already manufactured.

Violin manufacturers employ a very small quantity of balsam fir which does not appear in the above table.

Most of the material used for musical instruments is received at the factories in the form of rough lumber from 1 to 3 in. in thickness. The material used is of a superior grade and of an average value of $35.93 per thousand feet board

measure, which is the third highest in the list. The very high price recorded for mahogany and walnut is due to the fact that the figures for these wood materials were converted from veneer surface measure to board measure without allowing for labour and waste

Seventy-nine per cent of the raw material used in 1915 was purchased in the province of Quebec, while 14 per cent was purchased in the United States. Thirty-five thousand feet of maple were imported from the United States by the piano manufacturers. The supply of maple and elm from Ontario formed 6 per cent of the total.

The field of trade of this industry covers all of Canada and also extends to the United States and Newfoundland.

TABLE 15—PATTERNS

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.		
					Que.	N.B.	U.S.A.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**293**	**11,615**	**39 64**	**259**	**31**	**3**
Pine	93·9	275	10,735	39 04	244	31	
Birch	3·1	9	315	35 00	9		
Basswood	1·8	5	120	24 00	5		
Mahogany	0·3	1	200	200 00			1
Black Cherry	0·3	1	95	95 00	1		
Oak	0·3	1	85	85 00			1
Baywood	0·3	1	65	65 00			1

Patterns come twenty-first in the general list. The total quantity of material used by this industry is less than one-tenth of 1 per cent, but the pattern industry is important because no substitute has been found to replace wood for the purpose.

Seven kinds of wood are reported and spruce does not appear. There is no doubt that some spruce is used, but the quantity is undoubtedly small.

Pine forms nearly 94 per cent of the total material used for patterns. In the majority of cases, and particularly when the patterns have to be subjected to intense heat, no other wood can compete with clear soft pine. In addition to holding its shape under intense heat it is very easy to work and light to handle.

Basswood is used for rougher work, and birch, mahogany, cherry, oak, and baywood are used for the finest patterns, which require a hard and durable material.

The raw material purchased for patterns is of the best grade obtainable. The average price paid was the highest recorded by any industry. Eighty-eight per cent of the raw material was purchased in Quebec, 10·5 per cent came from New Brunswick, and the remainder was imported from the United States.

TABLE 16—PUMPS, TANKS, AND SILOS

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.		
					Que.	Ont.	U.S.A.
		M FT. B. M.	$	$ cts	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**1,295**	**39,475**	**30 48**	**970**	**125**	**200**
Spruce	57·5	745	14,850	19 93	745		
Pine	19·3	250	10,625	42 50	125	125	
Cypress	7·7	100	7,500	75 00			100
Hard Pine	7·7	100	4,000	40 00			100
Birch	5·4	70	1,750	25 00	70		
Maple	1·6	19	475	25 00	19		
Beech	0·8	11	275	25 00	11		

The industry represented under the above heading is reported to be responsible for the use of 1,295,000 feet board measure, or 0·2 per cent of the total wood consumption. Seven kinds of wood are reported, spruce forming over half of the total.

Spruce and pine are used for silos and water tanks. Cypress is used for special tank work. Most of the hardwood is used for pump blocks and bathroom tank boxes.

The material is purchased in the form of rough boards, planks, and dimension timber. The price paid for it is $12.72 per thousand feet board measure above the average of all the industries. Nearly 75 per cent of the raw material is purchased in Quebec and over half of the remainder in the United States.

The field of the industry is entirely local.

TABLE 17—REFRIGERATORS

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.
					Que.
		M FT. B. M.	$	$ cts	M FT. B. M.
Total	**100·0**	**269**	**5,924**	**22 02**	**269**
Ash	55·8	150	3,750	25 00	150
Pine	37·2	100	1,800	18 00	100
Birch	5·9	16	320	20 00	16
Elm	1·1	3	54	18 00	3

This industry comes twenty-second in the list and requires a supply of 269,000 feet board measure of wood material.

The manufacturers of refrigerators use only woods native to Quebec. Four species are given. Ash leads and forms 55·8 per cent. Pine is the only softwood reported. Refrigerators are exposed to moisture; they require a durable

material and one that holds its shape well. Refrigerator manufacturers purchased all their material in the province. The field of trade is local.

TABLE 18—SASH, DOORS, AND BUILDING MATERIAL

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.					
					Que.	Ont.	N.B.	U.S.A.	B.C.	Foreign.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**94,856**	**2,464,441**	**25 95**	**83,120**	**7,980**	**251**	**2,148**	**1,101**	**56**
Spruce	51·5	48,921	1,024,445	20 94	46,061	2,863	..			..
Pine	27·2	25,886	857,698	33 13	21,038	4,813	35			..
Hemlock	6·1	5,798	109,981	18 97	5,541	82	175	..	..	..
Birch	5·4	5,182	148,945	28 74	5,081	54	....	47	....	....
Basswood	2·1	1,977	57,529	29 10	1,965	4	..	8	..	....
Balsam Fir	1·8	1,680	35,866	21 35	1,680	..	....	....	....	....
Douglas Fir	1·0	1,024	43,377	42 36	..	....	....	....	1,024	....
Ash	1·0	920	24,011	26 10	891	26	....	3	....	....
Hard Pine	0·9	817	29,622	36 26	..	....	....	817	..	....
Chestnut	0·7	681	46,908	68 88	....	....	....	681	..	....
Cedar	0·5	471	11,854	25 17	352	1	41	..	77	....
Maple	0·5	451	20,689	45 92	314	137	....	..	..	....
Tulip Tree	0·3	305	17,230	56 27	....	....	....	305	....	....
Redwood	0·2	204	10,407	51 01	....	....	....	204	....	....
Elm	0·2	157	3,188	20 31	157	....	....	....	....	....
Poplar	0·1	129	2,557	19 82	129	....	....	....	....	....
Beech	0·1	100	2,566	25 66	100	....	....	....	....	....
Cypress	0·1	76	3,110	40 92	....	....	....	76	....	....
Mahogany	0·1	56	10,314	184 18	....	....	....	....	....	56
Jack Pine	0·1	53	918	17 32	53	....	....	....	....	....
Butternut	*	26	740	28 46	26	....	....	....	....	....
Black Cherry	*	21	636	30 29	21	....	....	....	....	....
Walnut	*	12	1,580	131 66	11	....	....	1	....	....
Red Gum	*	6	270	45 00	....	....	....	6	....	....

*Less than one-tenth of 1 per cent.

Notwithstanding the fact that stone, brick, steel, and concrete are largely used in building construction, wood is still an important construction material and will always be very important. Even the buildings where other materials are used have wooden flooring, wooden partitions, wooden doors and windows, wooden fixtures, etc. Moreover, the extensive use of concrete, steel, etc., makes a great demand for wood material on account of the extensive use of wood for supports, forms, temporary construction, etc.

This industry, as presented in this bulletin, includes the manufacture of sash and doors, wainscotting, clapboards, ceiling, sheathing, inside and outside house finishing and trimming, staircases and verandas, cornice and moulding, etc., and all the finishing material which enters into building construction.

Sash, door, and building material factories are very numerous and are found in every part of the province. They are of all sizes. Some are engaged in the sash, door, and building material line only, but a great number—and the largest of them—are engaged in the manufacture of many other commodities, such as

boxes, woodwork of all kinds, school and church furniture, trunks, handles, woodenware, refrigerators, racks, shelves, sporting goods, etc. For this reason it is often very difficult to assign to this industry, and to many others which are conducted simultaneously with it, the exact quantity of material each one consumes. It may often happen that material is credited as having been used by the sash and door industry when it was really used for the manufacture of articles such as refrigerators, pumps, tanks, silos, toys, sporting goods, handles, tools or woodenware.

Photo 7389. J. A. DOUCET.

Butter tubs and boxes made of spruce and balsam fir, at the factory of the Disraeli Box Co., Disraeli, Que.

Sash and door manufacturers use twenty-four kinds of wood out of a total reported of thirty-two, no other industry using so many. Spruce, the leading wood material of the province, ranks first, forming 51·5 per cent of the total. Most of the native woods occupy a prominent place. Softwood material predominates, forming 83·3 per cent.

Spruce is generally used for commoner building purposes, such as flooring, wainscotting, moulding, and framing. A fairly large quantity of a superior quality of spruce is now used for sash and door work, and the quantity is increasing in proportion to the increasing scarcity and high price of first-class pine material.

Pine is used for about the same purposes as spruce but for a superior class of work. The largest quantity of pine goes into sash and door work. White pine cannot be excelled for this purpose, being light, very easy to work, fairly durable, and tough. Sash and door manufacturers feel its increasing scarcity and are forced to recognize the lower grade of the material found on the market.

Hemlock and balsam fir replace spruce in rougher construction for flooring, wainscotting and ceiling, and even for moulding, but they are not used for sash and door work.

Due mostly to the increasing scarcity of native white pine, hard pine and Douglas fir are steadily entering the industry. These species are sometimes used in sash and door work, but more especially for flooring, ceiling, wainscotting, trimming, framing, and verandas, etc., in higher class buildings. The striking grain of hard pine and Douglas fir is taken advantage of, and in most cases the wood is finished with varnish so as to show the grain.

The durability of cedar material recommends it for veranda work and sills, but it is also used in sash and door and wainscotting work. Cypress is replacing the native cedar, being especially appreciated for its durability.

Redwood is used especially for wainscotting, moulding, fixtures, and church furniture. It is also used as a substitute for white pine, and the demand for it is steadily increasing.

Hardwoods are valued for inside work, windows and doors, framing, casing, wainscotting, moulding, stairs, and cornices. The most valuable kinds, such as mahogany, walnut, oak, cherry, chestnut, and maple, are sometimes used as veneer in a superior class of building, for decorative purposes. The hardwood finishings are generally oiled or varnished, or sometimes, as in the case of inferior hardwoods, stained to imitate better kinds of wood. Basswood, chestnut, elm, and ash are much appreciated for panel work, as well as for moulding and trimming work.

Many of the larger sash, door, and building material firms have a sawmill in connection with the factory, but the greater number buy the rough lumber in the form of boards and planks. Quebec native wood forms 87·8 per cent. Nine and one-half per cent is purchased from Ontario and British Columbia, while most of the remainder, 2·0 per cent, is imported from the United States. The bulk of the importation is of hard pine, chestnut, tulip, and redwood.

The average price paid, $25·95 per thousand feet board measure, ranks tenth among all the industries. The output of this industry finds its market in Eastern Canada.

TABLE 19—SHUTTLES, SPOOLS, BOBBINS, ETC.

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions. Que.
		M FT. B. M.	$	$ cts.	M FT. B. M.
Total	**100·0**	**3,778**	**114,44.**	**30 29**	**3,778**
Birch	98·0	3,703	112,899	30 49	3,703
Maple	1·3	50	1,000	20 00	50
Basswood	0·7	25	550	22 00	25

This industry has reported the use of three kinds of wood to the extent of 3,778,000 feet board measure, or 0·5 per cent of the total. It ranks ninth in the list.

Birch forms 98 per cent of the total wood consumed by the industry. White and yellow birch are used, but white birch alone forms 93 per cent of the total quantity of birch reported. There is a great demand for white birch by this industry, on account of its being light and easy to work.

The average price paid by the manufacturers of shuttles, spools, and bobbins is high. Only two industries, car construction and patterns, paid higher for birch.

The raw material is purchased mostly in the form of planks and boards. All the wood is purchased in Quebec.

The product of this industry is chiefly sold to cotton and woollen mills operating in Canada.

TABLE 20—TOYS AND SPORTING GOODS

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.
					Que.
		M FT. B. M.	$	$ cts.	M FT. B. M.
Total	**100·0**	**45**	**774**	**17 20**	**45**
Birch	55·6	25	418	16 72	25
Maple	11·1	5	88	17 50	5
Beech	11·1	5	80	16 00	5
Ash	8·9	4	69	17 25	4
Basswood	6·7	3	54	18 00	3
Spruce	4·4	2	30	15 00	2
Chestnut	2·2	1	35	35 00	1

The toy and sporting goods industry comes last in the list. The total wood consumption reported is less than one-tenth of 1 per cent.

This industry includes kindergarten sets, wooden toys, children's sleds, toboggans, skis, bats, snowshoes, etc.

There is no manufacturer exclusively engaged in this line of industry. These commodities are side lines or specialties of general woodworkers or a few chair manufacturers. On account of being included with more important industries it is probable that reports do not always give these commodities their share of material.

Seven kinds of wood are reported, birch forming over one-half of the total. Snowshoe manufacturers use only ash and yellow birch. Birch, maple, and ash enter into nearly all the products of the industry. Most of the basswood, chestnut, and spruce is used in children's sets and toys.

All the raw material is purchased in the province of Quebec. It is received at the factory chiefly in the form of boards and planks. The price paid, $17.20 per thousand feet board measure, is, with the handle and tool industry, the nearest to the general average.

The field of trade is confined to the province. This industry could be developed greatly.

TABLE 21.—VEHICLES

Kind of Wood.	Per cent	Quantity.	Value	Supply by Regions			
				Que.	Ont.	U.S.A.	Foreign.
		M FT. B. M.	$	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**3,240**	**98,871**	**3,143**	**51**	**45**	**1**
Birch	37·3	1,209	28,...				
Spruce	12·5	405	9,77...				
Ash	11·1	359	15		3	6	
Oak	10·7	346	15,...		31	10	
Basswood	9·5	308	9,7...		1	3	
Maple	5·9	190	4,574	24·07	1		
Elm	4·0	131	3,919	29·92	3		
Pine	3·9	127	3,741	...			
Balsam Fir	2·0	64	1,231	19·28			
Hickory	1·0	33	1,813	54·97	7	1	
Tamp Tree	0·8	25	2,02...	81·12		25	
Beech	0·6	18	36...	20·00	18		
Cedar	0·2	8	2·0	36·25	8		
Poplar	0·2	5	120	24·000	5		
Hemlock	0·1	4	92	23·000	1		
Butternut	0·1	3	70	23·33	3		
Black Cherry	0·1	2	310	155·000	2		
Mahogany	*	1	200	200·000			1
Walnut	*	1	150	150·000	1		

*Less than one-tenth of 1 per cent.

This industry includes the manufacture of wagons and sleds of every description, and the repair of automobiles.

The manufacture and repair of vehicles are reported by a large number of firms. The large majority have small shops established in every part of the province, the field of trade of which is confined to the locality where they are situated. There are a few large firms manufacturing for the general Canadian market.

This industry is important, not so much because of the quantity of the material it consumes as because of the wide range it occupies in the province and in the kinds of wood used. In the list it comes tenth with a wood consumption of 3,240,000 feet board measure, or 0·5 per cent of the total.

Nineteen kinds of wood are reported as being used. Sash, door, and building material is the only class of industry which has reported the use of more species. Canadian native woods lead, with birch at the head. The vehicle industry requires superior wood material and the manufacturers of vehicles are well informed as to the qualities of our native hardwoods and the best use to make of them.

At least 90 per cent of the wood used by the vehicle industry is native to the province. The remainder is purchased mostly from Ontario and the United States in about equal parts.

Birch, yellow and sweet, is employed in every part of the vehicle industry. It is chiefly valued for framework in light and heavy carriages, and for hubs and spokes. It is also very much used for sleds.

Spruce, pine, balsam fir, and hemlock are used chiefly for boxes of farm vehicles, carriages, and sleds.

Second-growth white ash is very popular. It is used anywhere where elasticity and toughness are required. It is preferred for light vehicles, where it is valued for poles, boxing, runners, and spokes.

White oak, because of its durability, is superior to all the above described species. In most cases, however, its use is somewhat limited on account of its scarcity. It is used chiefly for hubs, spokes, and rims of heavy wagons of superior quality.

Photo 7387 J. A. Dorcet.

Ground-wood pulp ready for shipment, Lake Megantic Pulp Co.

Maple is much valued for its stiffness. It is used for heavy framework, also for gear work. It is sometimes used for hubs. Frames of carriages and sleds absorb the greater part of the maple material reported.

The use of beech is confined almost entirely to spokes in heavy wagons. This wood is not very durable.

Basswood, cedar, elm, and tulip are valued in box-work of carriages and sleds.

Hickory is our best Canadian wood for vehicle manufacture. It is used for runners, spokes, whippletrees, rims, poles, hubs, and framework. It is chiefly in demand for light vehicles. Unfortunately, this wood material is becoming very scarce in Quebec, and the price of the imported material is almost prohibitive.

Butternut, cherry, mahogany, and walnut are used in vehicles of superior class and finish, and a good deal of the material reported is used for repairs.

The vehicle industry uses a large quantity of hickory and oak spokes, rims, poles, whippletrees, etc., purchased already prepared from Ontario and the United States. Such material has not been included in the bulletin, which deals only with the manufacture from the raw material.

The vehicle industry in Quebec used about one-third of the quantity of wood material used for that purpose in Ontario, but the manufacturers of Ontario buy 42 per cent of their raw material outside of that province while those of Quebec buy only 3 per cent outside of their province.

The average price, $30.50 per thousand feet board measure, paid for wood by the vehicle manufacturers is sixth on the list. A good deal of the material is purchased in the form of round logs.

The field of trade of the industry is mostly local, but it extends to most of the Canadian provinces, especially to the Maritime Provinces.

TABLE 22—WOODENWARE

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.
					Que.
		M FT. B. M.	$	$ cts.	M FT. B. M.
Total	**100·0**	**1,254**	**17,825**	**14 21**	**1,254**
Balsam Fir	51·8	650	9,050	13 92	650
Spruce	47·9	601	8,717	14 50	601
Maple	0·1	1	24	24 00	1
Basswood	0·1	1	17	17 00	1
Pine	0·1	1	17	17 00	1

Under this heading are included tubs, wooden vessels, bowls, etc. This industry comes eighteenth on the list. Its wood consumption is reported to be 1,254,000 feet board measure, or 0·2 per cent of the total.

The material used was all purchased in Quebec at an average price of $14.21 per thousand feet board measure, the third lowest price paid by any industry.

Five kinds of wood are given, balsam fir heading the list and forming over one-half of the total wood consumed.

Balsam fir, spruce, and pine were used chiefly for tubs and pails, maple for bowls and bread-boards, and basswood for different kinds of wooden utensils.

Birch has not been reported, although there is no doubt that the woodenware industry uses a comparatively large quantity of birch.

TABLE 23—WOOD-PULP

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.
					Que.
		M FT. B. M.	$	$ cts.	M FT. B. M.
Total	**100·0**	**386,669**	**4,237,033**	**10 95**	**386,669**
Spruce	65·2	252,161	2,914,369	11 55	252,161
Balsam Fir	30·6	118,210	1,130,455	9 56	118,210
Jack Pine	3·7	14,378	169,259	11 77	14,378
Poplar	0·5	1,762	21,806	12 37	1,762
Hemlock	*	158	1,144	7 21	158

*Less than one-tenth of 1 per cent.

The figures given in the above table were obtained from the annual report on Pulpwood consumption for 1915 (Forestry Branch Bulletin No. 58 B). The cord measure was converted into board feet at the ratio of 554 feet per cord.

Twenty-four pulp-mills operated in the province of Quebec in 1915 and converted 386,669,000 feet board measure of wood material into mechanical,

Photo 9539. R. G. LEWIS.

The above engraving, showing a coat hanger made of hardwood, illustrates close utilization of wood material. The shoulder pieces require pieces of wood measuring in the rough state only 12 by 1½ by 1 in., and the bar a piece 14 in. long by ½ in. square.

sulphite, sulphate, and soda pulp. The wood-pulp industry consumed more wood material than all the other industries together, its percentage of the total being 55·3.

The province of Quebec is the leading Canadian province in wood-pulp production. In 1915 it produced 49·6 per cent of all the wood-pulp manufactured in Canada. But this industry could reach a much larger development without seriously affecting the question of supply. In 1915 the province of Quebec exported nearly as much pulpwood as was consumed by its own mills: namely, 624,269 cords were exported and 697,962 cords were converted into pulp in Quebec mills.

While the province in the past has not had the benefit that would have resulted from the manufacture at home of a larger proportion of raw product

yet there has been a strong tendency, which has grown stronger every year, toward reducing the export of pulpwood and encouraging the manufacture of pulp in the province. The consumption of pulpwood in home manufacture has been increasing steadily since the inception of the industry, while the export of raw pulpwood has remained about stationary.

In 1914 the pulpwood exported from the province exceeded the quantity manufactured by 28,212,000 feet board measure (50,925 cords), while in 1915 the raw material converted into pulp at home exceeded the exports by 40,826,000 feet board measure (73,693 cords). In the course of that year the industry had increased its consumption by 33,941,000 feet board measure (61,266 cords).

Regarding the further manufacture of pulpwood into paper, in the province, it should be noted that this is growing in comparison with the pulp exported to be converted into paper abroad. This is in common with the tendency throughout Canada. In 1914, $1\frac{1}{5}$ tons of pulp were manufactured into paper in Canada for every ton exported, while in 1915 nearly 2 tons were converted into paper in Canada for every ton exported. This is making due allowance for the pulp imported into Canada in those years for special kinds of paper. Of the total news-print paper produced in Canada in 1915 from this pulp about 4 tons of paper were exported for every ton consumed by the printing plants of Canada. This shows the steady growth in producing a more highly finished, instead of a raw or partly finished product.

Since the European war started, and particularly during the year 1916, wood-pulp reached an almost fabulous price. On the Canadian market ground-wood pulp increased from $15 to $40 per ton, bleached sulphite pulp from about $55 to $160, and unbleached sulphite pulp from $43 to $100. It is likely that this condition will contribute to encourage the establishment of more pulp manufacturing plants in the province of Quebec.

Of the total raw material consumed in the year 1915, approximately 52·9 per cent was turned into mechanical pulp, 33·5 per cent into sulphite pulp, 13·1 per cent into sulphate pulp, and 5 per cent into soda pulp.

Of the woods used in manufacturing pulp, spruce is the leading species. The nature of the spruce fibre—its length, colour and pliability—is such that it is particularly suited for use in the manufacture of sulphite and ground-wood pulp. Balsam fir while inferior to spruce resembles it to a marked extent in colour and fibre length and is often sold mixed with spruce. At the present time it is customary for most mills in buying spruce pulpwood to accept as high as 30 per cent of balsam fir with the spruce. In the manufacture of mechanical pulp or ground-wood spruce, balsam fir and, to a limited extent, hemlock and jack pine are used. In the sulphite process it is necessary to use woods of a low resin content and for this reason, together with the fact that the nature of the fibres is such as to produce a good pulp, spruce and balsam are the predominant species. Hemlock is used in considerable amounts and jack pine in limited quantities in this process. Owing to the nature of the sulphate process practically all of the coniferous woods can be used, regardless of the resin content; hence, in this process we find spruce, balsam, and jack pine used in considerable amounts, while hemlock and some of the other species are

used to a limited extent. Both poplar and spruce are used in the production of soda pulp. It happens that in Canada, according to statistics, more spruce than poplar is used in manufacturing soda pulp. Canada produces a very small amount of soda pulp, and in countries producing this pulp in anything like considerable quantities poplar or woods of a similar nature are used almost exclusively. Hence, the consumption of spruce and poplar by the soda pulp mills in Canada gives a wrong impression as to the relative importance of these woods for soda pulp manufacture.

The quantity of soda pulp which can be consumed is limited, as the poplar fibres are very short and can be used for the most part only as a filler and for imparting "bulkiness" to book papers, lithographic papers, etc. However, considerable quantities of soda pulp are imported from the United States, and there would seem to be opportunity for a considerable increase in production in Canada both for domestic and foreign trade.

The average price paid for pulpwood at the mill in Quebec in 1915 was $10.95 per thousand feet board measure, or $6.06 per cord, which is the lowest price reported for any industry. This is due to the fact that the wood-pulp manufacturers cut most of their raw material themselves and that it is received at the factories in the rough state of round logs or bolts. For poplar wood the highest price was paid, $12.37 per thousand feet board measure, or $6.85 per cord. The higher price is due largely to the extra cost of logging, hauling, and floating it.

TABLE 24—MISCELLANEOUS

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	Supply by Regions.			
					Que.	Ont.	U.S.A.	Foreign.
		M FT. B. M.	$	$ cts.	M FT. B. M.	M FT. B. M.	M FT. B. M.	M FT. B. M.
Total	**100·0**	**12,741**	**339,176**	**26 62**	**5,142**	**6,790**	**808**	**1**
Pine	57·1	7,272	101,253	13 92	506	6,766		
Spruce	16·7	2,137	53,931	25 23	2,137			
Birch	10·6	1,353	24,290	17 95	1,310	24	19	
Hemlock	5·5	706	15,140	21 44	706			
Walnut	5·0	632	126,225	199 72	1		631	
Basswood	1·9	244	6,770	27 74	244			
Maple	1·5	185	3,398	18 37	185			
Tulip Tree	1·2	152	5,988	39 39			152	
Ash	0·2	22	698	31 73	22			
Elm	0·1	16	356	20 63	16			
Oak	0·1	14	578	41 28	10		4	
Beech	*	3	45	15 00	3			
Willow	*	2	200	100 00	2			
Red Juniper	*	2	120	60 00			2	
Mahogany	*	1	190	190 00				1

*Less than one-tenth of 1 per cent.

Under this heading are included rifle-stocks, spinning-wheels, matches, wash-boards, baby carriages, wringers, tent- and awning-poles, tent-pegs,

garment-hangers, cemetery-boards, tobacco-cutters' tables, clothes-pins, dowels and skewers, tops, spools, plugs, and bungs, fancy cases, trays, wash-tubs, blocks, slats, window-blinds, whips, canes, umbrellas, and numerous other articles.

This group of industries comes seventh in the list. Its total wood consumption reported is 12,741,000 feet board measure, or 1·8 per cent of the total. Three species of wood only are not native to the province. Native Quebec

Photo 10009. R. G. LEWIS.

Tent-pegs made from waste pieces from a vehicle factory. It requires only a rough piece of wood 16 by 1¼ by 1¼ in. to make a peg.

woods are largely represented but the manufacturers of miscellaneous articles purchased 59·6 per cent of their raw material outside of the province. Ontario furnished 53·3 per cent. Most of the pine used was purchased in Ontario.

The uses made of the different woods would take long to describe in full, owing to the long list of articles manufactured, but the most important ones may be mentioned. For rifle-stocks only black walnut is used. For this purpose the material was all imported from the United States. For spinning-wheels use was made of birch, white birch mostly, also basswood, pine, maple, and some spruce.

Except in a few instances the manufacture of spinning-wheels is conducted by numerous small shops, scattered all over the province, and information on the industry is not quite complete. Nowadays the small shops can no longer compete with the larger manufacturers and their business is rapidly falling off. Matches are made exclusively of pine; washboards are made of basswood, birch,

and beech; baby carriages of birch, basswood, pine, maple, etc.; tent-pegs, garment-hangers, clothes-pins, and tobacco-cutters' tables are made of birch, maple, elm, ash, and beech. Whip butts are made exclusively of birch; canes and umbrellas of birch, mahogany, ebony, and hickory. The more valuable kinds of wood are used for fancy cases, cemetery-boards, and trays. Red cedar is made into plugs, bungs, and spiles, with a certain quantity of tulip used for the same purpose. Willow is used for artificial limbs. It is the only willow reported. Spruce is employed in many kinds of work such as cloth-boards, ironing-boards, cemetery-boards, tent- and awning-poles, etc.

The price paid, $26.62 per thousand feet board measure, is a fairly high average, only eight industries reporting higher prices.

The field of trade is mostly Canadian.

Destructive Wood Distillation

At the time the information on the wood-using industries of Quebec was collected, destructive wood distillation still occupied a comparatively low rank among the wood-using industries of the province. It has since developed considerably, the need of acetone for the manufacture of explosives having hastened the development of the industry. If considered from the point of view of the material consumed, it would now take fourth place among the different wood-using industries of the pr nce.

There are now eleven destructive wood distillation plants established in Canada, four of them situated in the province of Quebec. These latter consume about 144 cords of wood per day, or 45,000 cords (24,930,000 feet board measure) per year. It is estimated that the total consumption for Canada is over 500 cords per day.

The woods used in the province of Quebec are maple, beech, and birch with a small quantity of other hardwoods. The proportions of these different woods are approximately as follows: maple and beech each 37½ per cent, and birch 25 per cent. The raw material is cut in lengths of 48 to 52 inches in the form of cordwood, and is seasoned for a year or more in order to dry it out. A cord of wood ready for distillation weighs about 3,700 pounds.

The products of these crude distillation plants are gases, crude wood alcohol, acetate of lime, creosote oils, hardwood tar, and charcoal. The gases and hardwood tar are burnt under the retorts, part of the creosote oil is also burnt while part is sold in the form of oil. A new use has recently been found for the oils, as some of them have been demonstrated, as a result of experiments made by the Forest Products Laboratories of the Forestry Branch in co-operation with the Mines Department, to be suitable for the flotation process of extracting ores.

Crude wood alcohol is refined by fractional distillation to produce methyl alcohol and methyl acetone or acetone-alcohol solvent in various grades to suit market conditions. Formaldehyde is also manufactured from the methyl alcohol. Acetate of lime is sometimes exported as such, but for the most part is converted into acetone as a solvent in cordite manufacture or into acetic acid, a portion of which is further converted into acetic anhydride and methyl acetate.

The charcoal is sold for domestic fuel or for making charcoal iron. The valuable products are wood alcohol, acetate of lime, acetone, and charcoal, and recently the oils have been added to the list.

The production per cord unit of the valuable products is about as follows:—

Crude wood alcohol	8 Imperial gallons.
Acetate of lime	200 pounds.
Charcoal	1,000 pounds (50 bushels of about 20 pounds).

In addition to these main products the gases form 15 to 20 per cent of the weight of the original wood. The creosote oils separated during redistillation amount to 2 to 3 Imperial gallons per cord, and the hardwood tar amounts to about 16 Imperial gallons per cord.

The crude products of the four plants operating in the province of Quebec are refined for the most part at Montreal. The Standard Chemical, Iron and Lumber Company of Canada, Limited, controls all the wood distillation plants operating in Canada.

No authentic records have been obtained of the cost of the wood delivered at the mill. It is estimated to be about $6 per cord. The price varies considerably and has advanced on account of the war. At the rate of $6 per cord the total value of the wood material at the plants would be $270,000.

Waste Utilization and By-products

This question is an important one and its solution presents some real difficulties. The Dominion Forestry Branch is endeavouring to help as much as possible in the solving of them.

The prevailing conditions must first be considered. What is the situation in regard to utilization in the wood-using manufactures?

As a matter of fact absolute waste of raw material, such as short ends, shavings, and sawdust does not take place, saw-mills not being considered in this discussion. No refuse of manufacture is being dumped outside and burned in pure waste. Even in the most unfavourable conditions the small pieces are either sold for heating purposes or burned with the sawdust, shavings or inferior refuse under the boiler of the factory for steam purposes. The question, then, would be whether some wood-using manufacturers could not make a better use of the waste of their factories than for mere heating and steaming purposes.

In the case of factories which are isolated it must be admitted that in many instances short ends, shavings, and sawdust cannot be disposed of at a profit except for heating and steaming purposes.

Generally, such a factory, engaged in the manufacture of more than one line of commodity, has very little material left in short ends which would be worth the trouble of sorting and marketing for the manufacture elsewhere of wooden articles, on account of the cost of transportation. As to shavings and sawdust, a small proportion might be disposed of to farmers in the vicinity for hotbeds and stable litter, but the greater proportion will probably be used only for steaming purposes. Clean hardwood sawdust can always be advantageously marketed for packing, cleaning, and curing purposes, and for the manufacture of by-products such as sanitary sweeping powder, dryers, polishers, etc.

In cases such as discussed in this paragraph the solution of the problem of the better utilization of the small pieces is the establishment of some side-line manufacture which will utilize such material.

The matter may be looked upon in a different light with regard to manufacturers situated in populous districts where factories of all kinds are found. In this case if a manufacturer has waste material it can often be sold to another manufacturer at a profit. It certainly would seem that small pieces which cannot be utilized in one factory might be used by another, although the transfer of waste material from one factory to another is very seldom made, for several reasons.

Photo 7384. J. A. Doucet.

Waste blocks and cores of birch, maple, and elm at a shoe-shank and clothes-pin factory.

First, it may be noted that factories are in some cases in such lines of industry that they can utilize all material which is any good. Many of the manufacturers are engaged in the manufacture of more than one line of goods, which affords them the advantage of a very close utilization of raw material.

Second, due to the relative cheapness of wood material in this country, the cost of sorting and transporting small pieces of wood would reach the value of the same kind of material purchased in boards or planks, so that the transfer of such small material from one factory to another is not encouraged by either the seller or the purchaser.

Third, as a consequence of the above consideration, the manufacturers having to provide power for their factories may often secure more benefit by burning the waste wood under their boilers than by selling it.

However, there is no doubt that many manufacturers situated in densely populated districts sell small pieces and short ends for fuel at a paying price, and a good proportion of their shavings and sawdust is disposed of for packing, curing, and cleaning purposes. In such densely populated districts there is a fair demand for factory refuse.

In studying the wood-using industries of the province of Quebec two industries were noted which appear more than any others to waste a large percentage of the raw material purchased. These are the manufacture of veneer where the waste is most noticeable, and, to a less degree, the manufacture of boot and shoe findings. The manufacturers of veneer and of boot and shoe findings receive all their wood material in the form of round logs. It is safe to estimate that in manufacturing veneer made of native wood at least one-fifth of the raw material purchased becomes waste. The waste is composed of the core, the defective veneer, and the small ends. At the present time the greatest part of the waste material is burned under the boiler, a small percentage being sold for heating purposes. It seems as if it should be possible to find a more economical use for such material, as the waste represents a large quantity of wood. Consider, for instance, a factory which consumes 3,000,000 feet annually of hardwood for the manufacture of veneer. The amount of waste resulting would be about 600,000 feet, or one-fifth of the total material. It may be considered that about two-fifths of this waste is inferior refuse of no marketable value, only good to be burnt under boilers, but the remainder is 360,000 feet board measure, or practically 650 cords. The total native wood consumed by the veneer manufacturers in the province of Quebec is reported to be 5,000,000 feet board measure. Following the same reasoning as above, the total waste resulting from the manufacture of native veneer would amount to 1,000,000 feet board measure of material, of which three-fifths, 600,000 feet board measure (1,083 cords), could be further utilized for manufacture.

The manufacturers of boot and shoe findings have similar waste, but in much smaller quantity.

What can be suggested to better this condition? Two main things: first, the establishment of side-line manufactures, for example the making of small baskets, small cratings and toys; second, the baling and shipping of the material to wood distillation plants. The rapid development of wood distillation presents a good opportunity for the economical utilization of a good deal of the hardwood waste of our wood-using manufacturers, especially where it is produced in large quantities and from factories which are situated within a reasonable distance of the wood distillation plants. This holds particularly for the larger-sized pieces, as the cordwood ordinarily used for hardwood distillation is cut so it will just pass through an 8 inch ring and nothing under a 4-inch log is desired. There are four separate wood distillation plants in the province of Quebec, and it is reported that they pay at the plant about $6 per cord for their raw material. At that price the waste from the veneer manufacture would represent a value of about $6,100.

Seventy manufacturers have reported the utilization of short ends, shavings, and sawdust, other than for fuel. A brief review of their reports may bring out some suggestions which may be of use in the more economical utilization of wood waste.

The manufacturers of boxes and crates use their material down to very small pieces in the manufacture of boxes and crates of small size. Some of their shavings are sold for packing purposes.

Car manufacturers use small cuttings of hardwood for track shims. They

sell most of their sawdust for smoking, drying, and cleaning purposes, and part of their shavings for packing purposes.

Cheese box headings are reported as being made to a considerable extent, of slabs. The manufacturers of cheese box sides do not report the manufacture of any by-product. This industry might utilize its small cuttings for fruit crates and baskets.

Small pieces of wood are utilized by some furniture makers in the manufacture of toys, children's furniture, and kindergarten sets.

A proportion of the broom handle manufacturers use small cuttings for making clothes-pins. Most of the matches are made of short pieces of pine, while indurated fibreware is sometimes made of pulp obtained from sawmill waste.

Many sash and door factories use their material down to very small cuttings in the manufacture of small crates and boxes, picture frames, and skewers. Some of them find it worth while to bale the shavings and sell them for packing purposes, and to sell their sawdust to butcher shops or to stables for litter and for drying purposes or for the manufacture of sanitary sweeping powder.

Manufacturers of agricultura' implements report having a good opportunity for making tool handles, but only a few are taking advantage of it.

The hardwood flooring factories can save their short pieces for the manufacture of railway shims, and their edgings for dowels and rods. The sawdust of these manufactures can be sold for the making of sanitary sweeping powder, for the smoking of meat or for cleaning purposes. There is always a good demand for clean hardwood sawdust. The hardwood planings could be baled and sold for packing purposes. Hardwood shavings make very good packing material. Only a few manufacturers of hardwood flooring have reported the use of their waste, other than for fuel.

Some cooperage manufacturers find it advantageous to utilize small pieces for the making of small crates and boxes.

Small pieces are used in the manufacture of rungs, turnings, small sleds, and toys by certain of the woodenware producers.

Some makers of vehicles and vehicle supplies utilize the waste for the manufacture of small handles for hammers, hatchets, files, and chisels, and for dowels, and ladder rungs. The sawdust and shavings, which are of hardwood mostly, could be easily sold. A few have reported selling them to farmers for stable cleaning.

There is no doubt that there are many manufacturers advantageously located who have not yet solved the problem of the more economical handling of the refuse of their factories. The Forestry Branch will always be pleased to give those desirous of improving conditions all available information on the subject.

Commodities Manufactured from each Kind of Wood.

ASH

- Automobiles (repairs)
  - top bows
- Agricultural Implements
  - poles
  - whippletrees
  - yokes
- Boats
  - frames
  - gunwales
  - interior finish
- Boxes
- Buildings
  - casing
  - doors
  - frames (door and window)
  - moulding
  - panels
  - wainscotting
- Cabinet-work
- Cars
  - engine cabs
  - second-class coaches
    - inside finish
    - seats
- Cheese Boxes
  - hoops
  - sides
- Coffins
- Cooperage
  - hoops
  - headings
  - staves
- Crates
- Elevators
  - heads
  - uprights
  - platforms
- Furniture
  - book-cases
  - chairs
  - desks
  - kindergarten sets
  - seats
  - tables
- Furniture (church)
  - balusters
  - pews
  - stands
- Garment Hangers
- Hames
- Handles
  - cant-hook
  - hay-fork
  - hoe
- Harrows
- Hat- and Cap-blocks
- Lacrosse Sticks
- Machinery
  - bases
  - blocks
  - supports
- Organs
  - cases
  - frames
- Refrigerators
- Snowshoe Bows
- Tanks
- Vehicles
  - bodies
  - bottoms
  - boxes
  - dashboards
  - frames
  - light gears
  - neck-yokes
  - poles

ASH—*Continued*

- Vehicles—*Continued*
  - seats
  - top bows
  - whippletrees
- Veneer

BALSAM FIR

- Agricultural Implements
  - straw-cutters
  - threshers
    - box-work
- Boats
  - fishing vessels
    - lining
    - seats
  - skiffs
- Boxes
  - cigar
  - egg
  - packing
  - piano
  - tobacco
- Box Shooks
- Buildings
  - ceiling
  - clapboards
  - exterior finish
  - flooring
  - frames (door and window)
  - inside doors
  - interior finish
  - joists
  - moulding
  - panelling
  - sheathing
  - trimming
- Caskets and Coffins
- Cheese Boxes
  - headings
- Cooperage
  - headings
  - staves
- Crates
- Foundry Boxes
- Vehicles
  - boxes
- Woodenware
  - ironing-boards
  - pails
  - tubs
- Wood-Pulp
  - ground-wood
  - sulphate
  - sulphite

BASSWOOD

- Agricultural Implements
  - fanning-mills
  - mowers
  - seeders
  - threshers
    - boxes
    - drawers
    - sides
    - tables
- Blind Poles
- Boot and Shoe Findings
  - filler-blocks
  - lasts
- Boxes
  - biscuit
  - packing
  - piano
  - tobacco

BASSWOOD—*Continued*

- Buildings
  - ceiling
  - core-stock
  - doors
  - panelling
  - flooring
  - frames (door and window)
  - shelves
  - sheathing
  - moulding
  - Venetian blinds
- Canoes
  - planking
- Caskets
- Cheese Boxes
  - headings
- Coffins
- Cooperage
  - headings
  - hoops
  - staves
- Crates
- Curtain Poles
- Fixtures
- Furniture
  - blackboards
  - chairs
  - core-stock
  - drawers
  - facework
  - kindergarten sets
  - kitchen cabinets
  - tables
  - trays
- Furniture (church)
  - altars
  - stands
- Garment Hangers
- Handles
  - broom
  - brush
  - whisk
- Hat-blocks
- Machinery
  - flour-mills
  - grinding-machines
    - troughs
  - railway velocipedes
  - sewing-machines
    - core-stock
    - drawers
- Musical Instruments
  - bellows
  - cases
  - core-stock
  - keys
- Oars
- Show-cases
- Snow Shovels
- Spinning-wheels
- Spools
- Tanks
- Templates
- Trunks
- Turnery
- Vehicles
  - bodies
  - bottoms
  - boxes
  - dashboards
  - panels
- Wheel-barrows
- Woodenware
  - rolling-pins
  - wash-boards
  - wooden utensils

BAYWOOD

- Electrical Fixtures
- Patterns
- Templates

BEECH

- Bath-room fixtures
  - tank boxes
- Boot and Shoe Findings
  - lasts
  - shanks
- Bucksaw Frames
- Buildings
  - flooring
  - framing
  - mantels
  - moulding
  - panels
  - wainscotting
- Bobbins
- Core-stock
- Curtain Poles
- Fancy Boxes
- Fixtures
- Furniture
  - book-cases
  - chairs
  - core-stock
  - desks
  - drawers
  - facework
  - frames
  - kindergarten sets
  - seats
  - tables
- Furniture (church)
  - balusters
  - pews
  - pulpits
  - stands
- Hames
- Handles
  - broom
  - brush
  - electrical apparatus
  - plane
  - saw
  - whip
  - wrench
- Machinery
- Planes
- Railway Velocipedes
- Show-cases
- Spirit-levels
- Sporting Goods
  - hand-sleighs
  - bats
- Swings
- Turnery
- Vehicles
  - hubs
  - light gears
  - spokes
  - whippletrees
- Veneer
- Washing-machines
  - legs
  - shakers
- Wheel-barrows
  - braces
  - handles
- Woodenware
  - bread-boards
  - butter-moulds
  - clothes-pins
  - rolling-pins
  - utensils
  - wash-boards
- Wringers
  - parts

BIRCH

- Agricultural Implements
  - hay-presses
  - horse-hoes
  - land-rollers
  - manure-spreaders
  - mowers
  - ploughs
  - rakes
  - seeders
  - straw-cutters
  - stump-pullers
  - threshers
    - beams
    - framework
    - gear-stock
    - handles
    - hubs
    - neck-yokes
    - poles
    - spokes
    - wheel-stock
    - whippletrees
- Automobiles
- Baby Carriages
- Baskets
  - bands
  - rims
- Bath-room Fittings
  - seats
  - tanks
- Billiard Tables (repairs)
- Bobbins
- Boats
  - gunwales
  - inside finish
  - flooring
  - keels
  - oars
  - planking
- Boot and Shoe Findings
  - lasts
  - pegs
  - shanks
- Boxes
  - cigar
  - packing
- Buildings
  - core-stock
  - doors
  - flooring
  - framing
  - interior finish
  - mantels
  - moulding
  - newels
  - sills
  - stair-work
  - wainscotting
- Canes
- Cars
  - core-stock
  - doors
  - inside finish
  - flooring
  - framing
  - lining
  - seats
  - sills
- Carpet-sweepers
  - cases
  - handles
- Cabinet-work
- Caskets
- Cheese Boxes
  - headings
  - sides
- Cheese-cutters
  - boards
- Crates
- Distillation

BIRCH—*Continued*

- Dowels
- Electrical Fixtures
- Elevators
  - floors
  - overheads
  - uprights
- Fixtures
- Furniture
  - backing
  - book-cases
  - chairs
  - core-stock
  - desks
  - drawers
  - facework
  - frames
  - kindergarten sets
  - seats
  - tables
- Furniture (church)
  - balusters
  - pews
  - pulpits
  - stands
- Garment Hangers
- Hames
- Handles
  - broom
  - brush
  - shovel
  - tool
  - umbrella
  - whip
- Hat-blocks
- Machinery
  - boot and shoe
  - dairy
  - engines
  - flour-mills
  - grinders
  - mangles
  - saw-mills
  - sewing-machines
    - core-stock
    - drawers
    - facework
    - frames
- Motor Trucks
- Musical Instruments
  - actions
  - benches
  - brackets
  - cases
  - core-stock
  - facework
  - frames
  - pedals
  - stools
- Patterns
- Picture Frames
- Planes
- Pumps
  - handles
  - plungers
- Refrigerators
- Safes
  - cabinet-work
- Saw-benches
- Scales
- Shims
- Show-cases
- Shuttles
- Snow-ploughs
- Snowshoe Bows
- Snow Shovels
- Spindles
- Spinning-wheels
- Spools
- Sporting Goods
  - bats

BIRCH—*Continued*
- Sporting Goods—*Continued*
  - hand-sleds
  - hockey sticks
- Store Fixtures
- Swings
- Teat-pegs
- Toys
  - rocking-horses
- Trunks
- Turnery
- Vehicles
- Veneer
- Wringers
  - parts
- Woodenware
  - bowls
  - bread-boards
  - churns
  - clothes-pins
  - rolling-pins
  - tubs
  - utensils

BUTTERNUT
- Boats
  - inside finish
  - gunwales
  - seats
- Boxes
  - cigar
- Buildings
  - doors
  - door frames
  - inside finish
  - mantels
  - moulding
  - panels
  - stair-work
  - wainscotting
- Chairs
- Fancy Boxes
- Foundry Boxes
- Furniture
  - facework
- Sales
  - cabinet-work
- Show-cases
- Vehicles
  - body work
  - panels

CEDAR
- Boats
  - lining
  - planking
  - ribs
  - seats
- Boxes
- Buildings
  - ceiling
  - doors
  - flooring
  - framing
  - gutters
  - moulding
  - outside finish
  - sashes
  - sills
  - verandas
  - wainscotting
- Canoes
  - ribs
  - planking
- Floats
- Hay-racks
- Gates
- Grinders
  - troughs

CEDAR—*Continued*
- Lasts
- Swings
- Tan Drums
- Tanks
- Tubs
- Vehicles
  - bottoms
- Water-pipes

CHERRY
- Buildings
  - door frames
  - mantels
  - moulding
  - newels
  - panels
  - wainscotting
  - window frames
- Cabinet-work
- Canoes
  - gunwales
  - seats
- Cars
  - doors
  - casing
  - framing
  - interior finish
- Cemetery Boards
- Electrical Fixtures
- Furniture
  - facework
- Handles
  - knife
  - tobacco-cutter
- Hearses
- Launches
  - exterior finish
  - interior finish
  - moulding
  - panels
- Show-cases
- Signs
- Spirit-levels
- Patterns
- Picture Frames
- Pulpits
- Teroplates
- Vehicles
  - bodies
  - panels
  - seats
- Veneer

CHESTNUT
- Buildings
  - casing
  - core-stock
  - doors
  - framing
  - interior finish
  - mantels
  - moulding
  - panels
  - stair-work
  - wainscotting
- Cars
  - core-stock
  - interior finish
  - sashes
- Core-stock
- Electrical Fixtures
- Fancy Baskets
- Furniture
  - core-stock
  - facework
  - framework
  - tops

CHESTNUT—*Continued*
- Furniture (church)
  - pews
  - pulpits
- Musical Instruments
  - cases
  - core-stock
  - keys
- Picture Frames
- Store Fixtures
- Toys
- Trunks

CYPRESS
- Buildings
  - casing
  - doors
  - gutters
  - outside finish
  - sashes
  - verandas
- Greenhouses
- Launches
  - casing
  - doors
  - framing
  - lining
  - panels
  - planking
  - sashes
- Machinery
  - boot and shoe
  - dairy
  - washing-machines
- Silos
- Sprinklers
- Tan Drums
- Tanks
- Troughs
- Water-pipes

DOGWOOD
- Shutters

DOUGLAS FIR
- Boats
  - casing
  - decks
  - doors
  - flooring
  - interior finish
  - keels
  - planking
  - sashes
- Buildings
  - ceiling
  - doors
  - flooring
  - mantels
  - moulding
  - sashes
  - sills
  - stair-work
  - verandas
  - wainscotting
- Cars
  - joists
  - flooring
  - frames
  - lining
  - sills
- Derricks
- Dredges
- Engine Bases
- Flooring
- Gangways

DOUGLAS FIR—*Con.*
- Lock Gates
- Scows
- Skidways
- Shipbuilding
- Sprinklers
- Tanks
- Trucks
  - parts

EBONY
- Brush Backs
- Picture Frames

ELM
- Agricultural Implements
  - hay-cutters
  - hay-presses
  - ploughs
  - rakes
  - stump-pullers
  - threshers
    - beams
    - box-work
    - framework
    - gear-stock
    - handles
    - hubs
    - neck-yokes
    - poles
    - rims
    - whippletrees
- Baby Carriages
- Boats
  - keels
  - keelsons
  - fenders
- Boxes
- Buildings
  - casing
  - doors
  - framing
  - moulding
  - stable flooring
  - wainscotting
- Canoes
  - ribs
  - seats
- Caskets and Coffins
- Cheese Boxes
  - hoops
  - sides
- Cooperage
  - headings
  - staves
- Crates
- Elevators
  - frames
- Furniture
  - backing
  - chairs
  - facework
  - framework
  - tables
- Hames
- Hearses
- Machinery
  - boot and shoe
  - tobacco-cutters
  - wood-cutters
    - frames
    - tables
- Motor Trucks
- Pianos
  - backing
  - frames
  - pedal-rails
- Refrigerators

ELM *Continued*
- Spinning-wheels
- Shipbuilding
  - framing
  - planking
- Vehicles
  - blocks
  - bunks
  - dashboards
  - gear-stock
  - hubs
  - neck-yokes
  - posts
  - racks
  - reaches
  - rims
  - seats
  - shafts
- Veneer
- Wheel-barrows
- Woodenware
  - clothes-pins
  - churns

HARD PINE
- Agricultural Implements
  - harrows
  - ploughs
  - seeders
    - beams
    - boxes
    - handles
- Bowling Alleys
- Buildings
  - beams
  - casing
  - doors
  - framing
  - flooring
  - mantels
  - moulding
  - stair-work
  - verandas
- Cars
  - flooring
  - frames
  - lining
  - sills
- Derricks
- Elevators
  - flooring
  - overheads
  - uprights
- Ladders
  - rungs
  - sides
- Locomotives
  - running-boards
- Pulp-mills
  - tanks
- Shipbuilding
  - gangways
  - skids
  - stanchions
- Washing-machines

HEMLOCK
- Boxes
  - egg
  - packing
  - piano
- Buildings
  - flooring
  - framing
  - inside finish
  - joists
  - moulding
  - outside finish

HEMLOCK—*Continued*
- Buildings—*Continued*
  - sheathing
  - studding
- Butter Boxes
- Caskets and Coffins
- Cheese Boxes
  - bending
- Cloth-boards
- Crates
- Foundry Boxes
- Ironing-boards
- Shelves
- Shooks
- Skiffs
  - lining
- Vehicles
  - bottoms
  - boxes

HICKORY
- Automobiles
- Electrical Apparatus
- Handles
  - axe
  - cant-hook
  - electric-switch
  - fork
  - hammer
  - peavy
  - shovel
- Rulers
- Railway Tools
- Telegraph Tools
- Trucks
- Vehicles
  - bent rims
  - cross-bars
  - fellocs
  - framework
  - gear-stock
  - hubs
  - neck-yokes
  - poles
  - posts
  - reaches
  - runners
  - shafts
  - spokes
  - top bows
  - whippletrees

IRONWOOD
- Fishing-rods

JACK PINE
- Buildings
  - beams
  - ceiling
  - flooring
  - outside finish
  - posts
  - sheathing
  - sills
- Wood-pulp
  - mechanical
  - sulphate
  - sulphite

LIGNUM VITAE
- Castor Wheels
- Shipbuilding

LOCUST

- Telephone and Telegraph Supplies
  - brackets
  - pins

MAHOGANY

- Automobiles (repairs)
- Bath-room Fittings
  - seats
- Billiard Tables (repairs)
- Boats
  - interior finish
- Buffets
- Buildings
  - casing
  - doors
  - fixtures
  - framing
  - interior finish
  - mantels
  - panelling
  - staircase work
  - wainscotting
- Cabinet-work
- Cars
  - inside finish
- Caskets
- Electrical Fixtures
- Fancy Cases
- Fixtures
- Furniture
  - beds
  - chairs
  - chiffoniers
  - dressers
  - facework
  - tables
  - wash-stands
- Jewellery Cases
- Launches
  - covering
  - interior finish
- Musical Instruments
  - actions
  - brackets
  - carvings
  - cases
  - moulding
- Patterns
- Sewing-machines
- Shipbuilding
  - interior finish
- Show-cases
- Trimmings
- Veneer

MAPLE

- Agricultural Implements
  - drills
  - fanning-mills
  - harrows
  - hay-carriers
  - hay-loaders
  - hay-presses
  - hoes
  - horse-powers
  - land-rollers
  - ploughs
  - separators
  - bases
  - beams
  - cross-beams
  - frames
  - handles
  - neck-yokes
  - poles
  - steps
  - whippletrees
- Baking-boards
- Baskets
  - bands
  - rims
- Boats
  - keels
  - keelsons
  - wheels
  - rudders
- Bobbins
- Boot and Shoe Findings
  - lasts
  - shanks
- Bowling Alleys
- Brush Backs
- Buffets
- Buildings
  - doors
  - flooring
  - framing
  - mantels
  - newels
  - stairs
  - wainscotting
- Butcher Tables
- Butter-moulds
- Canes
- Cars
  - doors
  - cross-sills
  - framing
  - interior finish
  - moulding
  - seats
- Cheese Boxes
  - sides
- Cheese-cutters
  - boards
- Churns
  - frames
- Cog-wheels
- Cooperage
  - slack
- Crates
- Distillation
- Dowels
- Electrical Apparatus
- Elevators
  - flooring
  - guide-strips
  - overheads
- Friction Blocks
- Foundry Boxes
- Furniture
  - backing
  - chairs
  - chiffoniers
  - dressers
  - facework
  - frames
  - seats
- Furniture (church)
  - balusters
  - confessional boxes
  - pews
  - pulpits
  - prayer desks
  - stands
- Garment Hangers
- Pestles
- Handles
  - axe
  - broom
  - cant-hook
  - carpet-sweeper
  - paint-brush
  - hammer
  - peavy
  - saw
- Hat-blocks
- Insulator Pins
- Machinery
  - boot and shoe
  - engine beds
  - hoisting-machines
  - saw-benches
  - saw-mills
- Mallets
- Mangles
- Meat Blocks
- Musical Instruments
  - brackets
  - lacework
  - framework
  - handles
  - pedals
  - stools
- Press-blocks
- Pulp machinery
  - rolls
- Pumps
  - blocks
  - handles
  - rods
  - shafts
- Rulers
- Shipbuilding
  - interior finish
  - planking
  - rudders
  - wheels
- Shuttles
- Skewers
- Snow-ploughs (horse)
- Spinning-wheels
- Spools
- Sporting Goods
  - balls (croquet)
  - bats
  - billiard cues
  - bowls
  - clubs
  - paddles
  - toboggans
- Store Fixtures
- Sewing-machines
- Vehicles
  - axles
  - frames
  - gear-stock
  - hubs
  - poles
  - neck-yokes
  - reaches
  - whippletrees
- Veneer
- Wash-stands

OAK

- Agricultural Implements
  - land-rollers
  - ploughs
    - beams
    - handles
- Automobiles
- Bath-room Fittings
  - seats
- Billiard Tables (repairs)
- Boats
  - capstans
  - deadwoods
  - fenders
  - frames
  - gunwales
  - inside finish
  - keels
  - keelsons
  - knees

OAK—*Continued*
- Boats—*Continued*
  - outside finish
  - planking
  - ribs
  - stringers
- Buffets
- Buildings
  - casing
  - columns
  - doors
  - flooring
  - framing
  - mantels
  - moulding
  - newels
  - sills
  - stairs
  - wainscotting
- Bungs
- Canoes
  - ribs
  - gunwales
- Cars
  - bumpers
  - cross-sills
  - decks
  - frames
  - interior finish
  - snow-ploughs
- Caskets and Coffins
- Churns
- Cooperage (tight)
  - hoops
  - headings
  - staves
- Dredges
- Fancy Cases
- Furniture
  - book-cases
  - chairs
  - chiffoniers
  - desks
  - dressers
  - facework
  - frames
  - seats
  - tables
- Furniture (church)
  - balusters
  - pews
  - pulpits
- Hames
- Machinery
  - boot and shoe
  - elevators
  - engine blocks
  - saw-mills
  - well-drills
- Musical Instruments
  - facework
  - frames
  - pedals
- Oars
- Plugs
- Sewing-machines
- Show-cases
- Spiles
- Store Fixtures
- Taps
- Telegraph and Telephone Supplies
  - boxes
  - brackets
  - cross-arms
  - fixtures
  - insulators
  - pins
- Trucks
- Vehicles
  - blocks

OAK—*Continued*
- Vehicles—*Continued*
  - body work
  - bunks
  - frames
  - hubs
  - neck-yokes
  - poles
  - reaches
  - rims
  - runners
  - whippletrees
- Veneer
- Wash-stands

PINE

- Agricultural Implements
  - mowers
  - seeders
  - separators
  - straw-cutters
  - threshers
    - boxes
    - tubbs
- Awning Rollers
- Baking-tubbs
- Bee Hives
- Blinds
  - rollers
  - slats
- Boats
  - cabin work
  - lining
  - planking
- Boxes
  - egg
  - packing
- Buildings
  - casing
  - clapboards
  - columns
  - core-stock
  - cornices
  - doors
  - flooring
  - framing
  - interior finishing
  - joists
  - mantels
  - mouldings
  - outside finishing
  - posts
  - rails
  - sashes
  - sheathing
  - sills
  - shelves
  - stair-work
  - turnery
  - verandas
  - wainscotting
- Cabinet-work
- Canoes
  - planking
- Cars
  - flooring
  - lining
  - sheathing
- Caskets and Coffins
- Cemetery Boards
- Cheese Boxes
- Churns
- Cloth-boards
- Cooperage
- Crates
- Cross-arms
- Curtain Poles
- Draughting Boards
- Draughting Tables

PINE—*Continued*
- Dredges
- Fixtures
- Foundry Boxes
- Furniture
  - backing
  - cabinets
  - core-stock
  - desks
  - drawers
  - inside work
  - seats
  - tables
- Furniture (church)
  - altars
  - pews
- Gangways (red pine)
- Gates
- Hand-sleds
- Hat- and Cap-blocks
- Incubators
- Ironing-boards
- Launches
  - inside finishing
  - lining
  - planking
- Machinery
  - boot and shoe
  - elevators
  - flour-mills
  - saw-mills
  - cotton-mills
  - woolen-mills
- Matches
- Musical Instruments
  - actions
  - backing
  - bellows
  - boxes
  - frames
  - keys
  - pipes
- Pails
- Patterns
- Picture Frames
- Pumps
- Railway Signals
- Refrigerators
- Rocking-horses
- Safes
  - cabinet-work
- Shipbuilding
  - cabin work
  - bowsprits
  - decks
  - frame work
  - knees
  - masts
  - planking
  - rudders
  - stringers
- Shelves
- Shims
- Shooks
- Silos
- Signs
- Spinning-wheels
- Stretchers
- Tan Drums
- Tanks
- Templates
- Tent-poles
- Tobacco-cutters
  - boards
  - tables
- Troughs
- Trunks
- Tubs
- Turnery
- Vats
- Vehicles

PINE—*Continued*
Vehicles—*Continued*
boxes
bottoms
racks
Washing-machines
Wheel-barrows

POPLAR

Boxes
butter
egg
packing
tobacco
Buildings
ceiling
fittings
flooring
framing
moulding
Cheese Boxes
headings
Coffins
Cooperage (slack)
heading
staves
Crates
Excelsior
Furniture
backing
chairs
drawers
tables
Shelves
Trunks
Vehicles
boxes
bottoms
Wood-Pulp
sulphite
soda

RED GUM

Buildings
interior finishing
moulding
panelling
wainscotting
Core-stock
Musical Instruments
cases
moulding
pipes
Picture Frames
Sewing-machines
core-stock
drawers
tables

RED JUNIPER

Bungs
Fur Boxes
Fancy Cases
Plugs
Spiles
Tops

REDWOOD

Buildings
casing
columns
doors
flooring
framing
interior finishing
mantels
moulding
newels
sashes
stair-work
wainscotting
Bungs
Furniture (church)
balusters
fixtures
pews
pulpits
prayer desks
Launches
cabin work
framing
inside finishing
planking
rudders
Oars
Plugs
Spiles
Tanks

ROSEWOOD

Fancy Cases
Knobs
Planes
handles
Trays

SATINWOOD

Cars
interior finish

SPANISH CEDAR

Bungs
Cigar Boxes
Fancy Cases
Tops

SPRUCE

Agricultural Implements
hay-presses
mowers
rakes
seeders
threshers
frames
racks
sides
tables
Awning Poles
Baskets
bottoms
Bee Hives
Blind Poles
Bread-boards
Boxes
butter
packing
piano
tobacco
Buildings
beams
casing
ceiling
clapboards
cornices
doors
flooring
framing
moulding
sashes
sheathing
sills
stairs
Venetian blinds
verandas
Cabinets
Cars
freight cars
flooring
framing
lining
Cemetery Boards
Cheese Boxes
headings
Churns
Cisterns
Cloth-boards
Coffins
Concrete Forms
Cooperage (slack and tight)
headings
staves
Counters
Crates
Curtain Poles
Derricks
Elevators
Evaporators
Fences
Fixtures
Foundry Boxes
Furniture
backing
chairs
drawers
kitchen cabinets
Dry Goods Bolts
Gates
Guitars
Handles
pail
knife
spade
Hand-sleds
Hay-racks
Incubators
Ironing-boards
Launches
cabins
lining
planking
seats
Machinery
boot and shoe
cotton-mill
flour-mill
saw-mill
woolen-mill
bases
blocks
parts
Musical Instruments
bellows
keys
pipes
sounding-boards
swell-boxes
Oars
Pails
Scales
Shelves
Skiffs
Shipbuilding
bowsprits

SPRUCE—*Continued*
Shipbuilding—*Continued*
cabin work
decks
frames
gunwales
interior finish
keels
keelsons
knees
lining
masts
planking
rudders
stretchers
Shooks
Silos
Spinning-wheels
Tanks
Tent Poles
Toys
rocking-horses
Tubs
Turnery
Vehicles
bottoms
boxes
bunks
poles
Violins
Wooden Pipes
Wood-Pulp
mechanical
sulphate
sulphite
soda

TEAK

Shipbuilding

TULIP TREE

Automobiles (repairs)
Baking-tables

TULIP TREE—*Continued*
Boot and Shoe Machinery
parts
Boxes
cigar
Buildings
casing
core-stock
doors
interior finish
mantels
moulding
newels
panel-work
sashes
Cabinet-work
Cars
core-stock
cross-binding
deck frames
outside finish
sign-boards
Carvings
Chairs
Core-stock
Fixtures
Furniture
core-stock
drawers
inside work
table tops
Hat- and Cap-blocks
Musical Instruments
actions
air-boards
casing
frames
panels
pipes
player parts
trusses
Picture Frames
Sewing-machines
Show-cases
Vehicles
body work

TULIP TREE—*Continued*
Vehicles—*Continued*
box-work
dashboards
seats
Templates

WALNUT

Billiard Tables (repairs)
Buildings
doors
casing
framing
mantels
moulding
newels
stair-work
wainscotting
Cabinet-work
Cars
Fancy Goods
Fixtures
Furniture
face work
Gun-stocks
Jewellery Boxes
Musical Instruments
facework
moulding
Picture Frames
Sewing-machines
Show-cases
Tables
Trays
Turnery
Vehicles
body work
Veneer

WILLOW

Artificial Limbs

Classified Directory of Manufacturers.

N.B. Where a firm makes more than one class of commodity, a division of the information is necessary for easy reference, and for this reason the name of a manufacturer in this directory may appear more than once, according to the number of classes of commodities he manufactures.

AGRICULTURAL IMPLEMENTS

Banville, Ltd., St. Octave.
Beauchemin & Fils, Sorel.
Beauvais & Co., Laprairie—Ploughs.
Belanger, A., Ltée., Montmagny.
Bernard, A., La Cie Industrielle, Ste. Philomène de Fortierville—Threshers.
Bessette, J. & S., La Cie, Ltée., Iberville.
Bracker, Ed., Kinnear's Mills—Ploughs.
Cantin, La Cie. des Industries, Warwick.
Chabot, Alphonse, St. Charles de Bellechasse—Rakes.
Desjardins, La Cie., Ltée., St. André de Kamouraska.
Desjardins, J. A., Rigaud.
Doré, J. B., & Fils, Laprairie.
Duclarme, Mederic, Iberville—Hay Presses.
Galarneau, Arthur, Pont Rouge.
Godbout, La Cie., St. Aimé—Threshing Machines.
Julien, Chas., Pont Rouge.
Jutras, La Cie., Ltée, Victoriaville—Manure Spreaders.
Lacoste, L. P., St. Jean Baptiste de Rouville.
Laiterie, La Cie. de, St. Pierre—Threshers.
Lamarre & Co., St. Remi.
Laperle, L., St. Ours—Plough Handles.
Leclerc, Ulric, Pont Rouge.
Michaud, J. H., St. André de Kamouraska—Threshers.
Miller, McLean, Lower Flodden.
Moody, M., & Sons Co., Terrebonne.
Naud, Alex., Deschambault—Threshers.
Patenaude, B. E., Franklin Centre—Plough Handles.
Pelletier, J. B., St. Pascal—Threshers.
Pelletier, P., St. Guillaume d'Upton—Hay Presses.
Poirier, Pierre, St. Félix de Valois—Threshers.
Tardif, J. B., Plessisville—Threshers.

BOATS

Bissonnette, Adolph, Verchères.
Bordunas, Magloire, St. Hilaire Station.
Cantin, A., 1058 Notre-Dame, Montreal.
Corbeil, J. N., Ste. Anne de Bellevue.
Coté & Prevost, Bout de l'Isle.
Lansereau, Alf., Verchères.
Lavoie Shipbuilding & Repairing Co., Lauzon.
Desmarais, T., & Fils, Verchères.
Drummond, Eugène, Co., 31 Colombe, Quebec.
Douillette & Léandre, Lachine.
Gendron, Joseph, Beauharnois (Box 82).
Lecavalier, B., Lachine.
Monette, Francis, Cie., Ste. Rose.
Montreal Ship Lining Co., 167 Commissioner, Montreal.
Poirier, E., Beauharnois (Box 125).
Pyke Motor & Yacht Co., 371 St. James, Montreal.
St. Pierre, L., & Fils, Verchères.
Sheppard, M., Sorel.
Sorel Ship Yard, St. Joseph, Sorel.
Vaillancourt, Eugène, St. Marbieu.
Waterman, D.C.—Magog.

BOOT AND SHOE FINDINGS

Boston Last Co., Richmond.
Canadian Consolidated Rubber Co., Ltd., Granby.

BOOT AND SHOE FINDINGS—*Continued*

Canadian Last Block Co., Ltd., Montreal.
Canadian Last Block Co., Ltd., Iberville.
Chalifour, O., 126 Prince Edouard, Quebec.
Constantin & O'Brien, Cor. Prince & Wellington, Montreal.
Danville, Mfg. Co., Ltd., Danville.
New England Last Block Co., Shawbridge—Last Blocks.
Plamondon, V., Charlesbourg.
Robin Bros., 135 Carrière St, Montreal.
Willard, Geo., & Sons, Mansonville.

BOXES AND CRATING

A. B. Stove Co. of Canada, Ltd., Montreal.
Acme Glove Works, Ltd., Marieville.
Ætna Biscuit Co., Ltd., 245 Delorimier, Montreal.
Allard, J. H., Ltée., L'Assomption.
American Can Co., 389 Jeanne d'Arc, Montreal.
Armstong-Whitworth of Canada, 22 Victoria Square, Montreal.
Asbestos Mfg. Co., Ltd., 21st Ave. & St. James, Lachine.
Asselin, Athanase, St. Jean de Matha—Butter Boxes.
Atlas Construction Co., Ltd., 37 Belmont, Montreal.
Babin, J., Philippe, Fauvel.
Ball, Robert, 174 Mountain, Montreal.
Bastien, A., Loretteville.
Beaucage, Henri, Sorel.
Beaver Stove & Mach. Co., Ltd., Grand'Mère.
Beauchemin, F., Roxton Falls.
Beaudet & Tousignant, Parisville.
Bedford Stove Co., Bedford.
Belanger, A., Ltée, Montmagny.
Bernier & Bernier, Vieille Eglise.
Bertrand, F. X., Mfg. Co., St. Hyacinthe.
Boissonneault, Adj., St. Laurent d'Orléans.
Booth-Coulter Copper & Brass Co., Ltd., 19 Queen, Montreal.
Brissette, J. H., Ste. Agathe des Monts.
Burrill Lumber Co., Three Rivers.
Butterfield & Co., Rock Island.
California Perfume Co. of Canada, Ltd., Read Building, Montreal.
Canada Axe & Harvest Tool Mfg. Co., Ltd., Montreal.
Canadian Allis-Chalmers Ltd., Rockfield.
Canadian Griscom-Russell Co., 960 St. Paul, Montreal.
Canadian Ingersoll-Rand Co., Ltd., Sherbrooke.
Canadian Match Co., Ltd., Drummondville.
Canadian Trenton Potteries Co., Ltd., St. Johns.
Charron, O., St. Sébastien.
Coughlin, J. B., Co., Ltd., 2050 Ontario, Montreal.
Crest Chemical Co., 687 St. Denis, Montreal.
Darling Bros., Ltd., 120 Prince, Montreal.
Davidson, Thos., Mfg. Co., Ltd., 187 Delisle, Montreal.
Desroches, E., Ste. Béatrix—Butter Boxes.
Dionne & Dionne, St. Mathieu—Butter & Cheese Boxes.
D'Israeli Box Co., D'Israeli.
Dominion Box & Packing Co., 60 Lévis, Montreal.
Dominion Bridge Co., Ltd., Lachine.
Dominion Glass Co., Ltd., Royal Trust Bldg., Montreal.
Dominion Textile Co., Ltd., Magog.
Dupont, A., Napierville.

BOXES AND CRATING—*Continued*

Eastern Township Box Co., D'Israeli.
Eveleigh, J., & Co., 107 College, Montreal—Trunks.
Fairbanks, E., & T., & Co., Ltd., Sherbrooke.
Fortier, J. M., Ltd., 416 Notre-Dame, W., Montreal.
Foucher, Frs., St. Clément.
Fraser, Thornton & Co., Ltd., Cookshire.
Gagnon & Deschene, St. Charles de Bellechasse.
Gignac, J. H., Ltée., 142 de l'Eglise, Quebec—Trunks.
Gosselin J. Honoré, Drummondville.
Goulet Bros., 174 Hotel de Ville, Montreal.
Grimm Mfg. Co., Ltd., 58 Wellington, Montreal
Gravel, A., Lumber Co., Ltd., Pont Etchemin—Shooks.
Hayes, Joseph, Shigawake.
Holmes & Arpin, Hochelaga, Montreal.
Jacob, E., & Fils, Ste. Geneviève de Batiscan.
Jean, Alex., Mont Carmel—Butter Boxes.
Labrie & Frère, St. Charles de Bellechasse—Biscuit Boxes.
Lamontagne Ltd., 338 Notre-Dame W., Montreal—Trunks.
Laperle, L., St. Ours—Butter Boxes.
Laurentide Co., Ltd., Grand' Mère.
Laurie, E., Co., 243 Bleury, Montreal.
Lay Whip Co., Ltd., Rock Island.
Letourneau, Omer, St. Joseph de Beauce.
Lumber & Construction Co., Ltd., Ville St. Pierre.
McEwan, R. D., Kensington.
Martin Frère & Cie., Ltée., Montreal.
Mercure, S., St. Augustin—Evaporators.
Meyer-Thomas Co., Ltd., 17 St. John, Montreal.
Meyer-Thomas Co., Ltd., Granby.
Moisean, Alfred, Lake Megantic.
Monarch Electric Co., Ltd., St. Lambert.
Mondor, Fidèle, St. Damien de Brandon—Butter Boxes.
Nesbit, E. T., 10th Ave., Limoilou Ward, Quebec.
Norcross Bros. Co., Iberville.
Norton, A. D., Ltd., Coaticook.
Paradis & Létourneau, Stadacona, Quebec.
Pariseau Frère, Ltée., Outremont, Montreal.
Paquet, Joseph, Buckingham.
Piper, Hiram L. Co., 75 St. Rémi, Montreal.
Robertson, James, Co., Ltd., 142 William, Montreal.
Robertsonville Foundry, Robertsonville.
Rock City Tobacco Co., Ltd., 224 Dorchester, Quebec.
Roy, J. G., Cap Chat.
Ruel, Edouard, Lauzon—Trunks.
Ste. Agathe Lumber & Construction Co., Ltd., Ste. Agathe des Monts.
Saumure, Phillippe, 1222 Henri Julien, Montreal.
Sherbrooke Machinery Co., Ltd., Sherbrooke.
Small Bros., Dunham.
Standard Box Co., Letroxville—Butter Boxes.
Stevens, H. G., Dunham.
Terreau & Racine, 196 St. Paul, Quebec.
Thereault, Euchariste, L'Anse à la Louise—Codfish Boxes.
Tremblay, Joseph, Ste. Félicité—Butte. Boxes.
Turner Lumber & Pulpwood Co., Lake Edward.
Veilet & Cie., Ste. Geneviève de Batiscan—Bottle Boxes.
Villeneuve, Joseph, St. Romuald d'Etchemin.
Williams Mfg. Co., 1789 St. James, Montreal.

CAR CONSTRUCTION

Canadian Car & Foundry Co., Ltd., Montreal
Canadian Northern Ry. System, Limoilou Car Shops, Quebec
Canadian Pacific Railway, Angus Shops, Montreal.
Quebec Central Railway Co., Sherbrooke.

CHEESE BOXES

Belleville, Emery, St. Alphonse
Bergeron, A., Fils, Ste. Brigitte des Saults—Headings.
Bergeron, Z., Mandeville.
Blanchet & Frère, St. Rosaire—Headings
Boucher, T., Bic.
Boudreau, Zoel, Caesapscal
Coté, E., Wotton
Daigle, Ed., Rivière Bois Clair
Gagnon, J. A., St. Benoit de Matapédia.
Gingras, André, Warwick
Girard & Lupien, Ste. Brigitte des Saults—Headings.
Jacob, E., & Fils, Ste. Geneviève de Batiscan—Headings
Jean, Ernest, Padoue.
Labbé, Joseph, Trang Junction—Headings.
Laperle, L., St. Ours.
Lussier, Hector, Ste. Angèle de Monnoir.
Martin, dos., & Cie., St. David d'Yamaska—Headings.
Rivard, A. et Frère, St. Didace—Headings.
Roy, Louis, St. Jude.
Sylvestre, C., St. Cuthbert.
Trottier, A., & Cie., Rivière Bois Clair.

CASKETS, COFFINS & SHELLS

Audet, L. N., Lambton.
Aubé, Pierre, Armagh.
Beauchemin, F., Roxton Falls
Beaudin, P. Z., Little River West.
Beaudoin, P., St. Agapit Station.
Bernard, Paul, St. Dominique de Bagot
Bouchard, A., Jonquières.
Boucher, Paschal, Fraserville.
Blouin & Frère, St. Sébastien.
Cadieux, H., Buckingham.
Charron, U., St. Sébastien.
Coté, Victor, St. François du Lac.
Desjardins, F. E., Hull.
Dontigny, P., Champlain.
Dorion, H. N., Beauport.
Dubé, Xavier, St. Jean Port Joli.
Girard & Godin, Ltée., Three Rivers.
Godin Casket Mfg. Co., Sutton.
Gougeon, Joseph, Ville St. Laurent.
Julien, L., St. Anaclet.
Landry, Telesphore, St. Bruno de Kamouraska.
Lariviere, P., Contrecœur.
Laurendeau, H., St. Paul de Chester.
Lessard, Od., Feuille d'Erable.
Letourneau, Omer, St. Joseph de Beauce.
Lussier, J. E., St. Césaire.
Maillhot, Joseph, Lourdes.
Marcoux, C.P., St. Romuald d'Etchemin.
Martial, Frs., Ste. Agathe des Monts.
Martin, Omer P., Pont Château.
Meunier, A., Chambly Canton.
Moisan, Chas., Lévis.
Paulhus, Pierre, Sorel.
Perreault, S., St. Gabriel de Brandon
Prevost, Joseph, Terrebonne.
Rossignol, Jos. A., St. Philippe Ouest
Roy, Gédéon, St. Georges Est.
St. Cyr, Ed., St. Didace.
Sansregret, M., & Co., Joliette.
Sévigny, A., Sorel
Tanguay, O., Longevin.

COOPERAGE

Breen, Thos., Guigues.
Canada Starch Co., Cardinal, Ont. (Head Office, Montreal.)
Corbeil, J. T., Laurentides.
Coté, Louis, 83 Sault au Matelot, Quebec

COOPERAGE *Continued*

Disraeli Box Co., Disraeli.
Gosselin, J. N., Drummondville.
Richard, N., Rivière la Madeleine.
Ruel, Vesins, St. Cyprien.

FOUNDRY BOXES

Begin Frères, Windsor East.
Canada Iron Corporation Ltd. (Three Rivers Head Office, Montreal.)
Dussault, Lamoureux & Cie., Ste. Hyacinthe.
Gendron, Joseph, Berthierville.
Lamarre & Cie., St. Remi.
McOuat, T. & Son, Lachute.
Miller Bros. & Sons Ltd., 120 Dalhousie, Montreal.
Modern Foundry Co., Ltd., Three Rivers.
Mount Royal Foundry Co., Ltd., 116 Ann, Montreal.
National Avenue Mfg. Co., de Courcelles, Montreal.
Patenaude, B. E., Franklin Centre.
Payette & Frère, Terrebonne.
Standard Foundry & Machinery Co., Ltd., Lennoxville.
Thetford Cie., Ltée., La Fonderie de, Thetford Mines.
Union Screen Plate Co. of Canada, Ltd., Lennoxville.

FURNITURE

Ahern Safe Co., Ltd., 113 Dagenais, Montreal—Safes.
Asselin, Athanase, St. Jean de Matha.
Bernier, Auguste, Carleton.
Berube, Arthur, Mont Carmel.
Boucher, Frs., St. Clément.
Brisson, Joseph, Ste. Béatrix.
Canadian Rattan Chair Co., Victoriaville—Chairs.
Caron, L., & Sons, Co., Ltd., Nicolet—Church Furniture.
Castle & Sons, 568 St. Catherine, W., Montreal.
Comeau, A. B., & Co., Farnham.
Construction de Bois, La Cie. de, Ltée., Ste. Agathe des Monts.
Cotè, Victor St. François du Lac.
Crevier & Fils, 496-498 Clarke, Montreal.
Cyr, Charles N., New Richmond Station.
Danville Chair & Specialty Co., Ltd., Danville.
Davelnyville Chair Co., Davelnyville.
Demers Clothespin Mfg. Co., Drummondville.
Demers, J. B., St. Albert.
Deslaies, Pierre, Ste. Sophie de Lévrard.
Dominion Furniture Mfg. Co., Ltd., Ste. Thérèse.
Dominion Safe & Vault Co., Farnham.
Eastern Townships Furniture Mfg. Co., Arthabaska.
Fortin, Jos. Ant., Cap St. Ignace.
Fournier, E., 80 Clarke, Montreal.
Fraserville Chair Co., Fraserville—Chairs.
Gagnon, V., & Frère, Lambton.
Gale, Geo. & Sons, Ltd., Waterville—Astoria Frames.
Gélinas, C. P., & Frère, Three Rivers.
Genest, C. A., 1218a St. Denis, Montreal.
Girard, Nap., St. Michel de Rougemont—Church and Store Furniture.
Giddings, Ltd., Granby.
Gignac, J. H., Ltée., 142 de l'Eglise, Quebec.
Gingras, Alf. C., Sherbrooke—Church and School Furniture.
Gosselin, Joseph, Notre-Dame de Lévis.
Goulet, D., Lake Megantic.
Harcourt, J., New Glasgow.
Hardon, J. H., & Cie., St. Pascal—School Furniture.
Idéale Portes & Châssis, La Cie., Ltée., 596 St. Patrick, Montreal.

FURNITURE—*Continued*

Julien, Fred., St. Basile—Upholstering.
Kilgour, J. W. & B., Ltd., Beauharnois.
Lallemr, O. B., & Fils, Lachute.
Landry, Telesphore, St. Bruno de Kamouraska.
Landry, A., & Frères, St. Octave—Church, School and Store Furniture.
Langlois, D. H., & Cie., St. Johns.
Langlois, O., & Cie., St. Johns—Repairs.
Leclerc, J. E., L'Islet.
Leclerc, N., L'Islet Station.
Lévasseur, Isidore, St. Ulric.
Levasseur, Philippe, Ste. Anne de la Pocatière—Church and School Furniture.
Longis, Alfred, St. Octave.
Longpré, L. P., Charlemagne.
Martel, Janvier, L'Anse St. Jean.
Martel, Raoul, Ste. Monique de Nicolet.
Monette, Francis, Cie., Ste. Rose.
Montfort Orphanage, Montfort—School Furniture.
Montreal Dry Docks & Ship Rep. Co., 129 Mill, Montreal.
Montreal Upholstering Co., 1611-1613 Clarke, Montreal.
Murphy, W. J., Co., 111 Queen, Montreal—Castors.
Nadeau, J. A., Drummondville.
North Hatley Mfg. Co., North Hatley.
Paquet, Joseph, Buckingham.
Paquette, A., St. Hugues—Church Furniture.
Perry, James, 323 St. Paul, Quebec.
Pollender & Frères, Farnham.
Robert, Nap., Courcelles.
Rochon, G., 1150 Bellechasse, Montreal—Kitchen Furniture.
Roxton Mill & Chair Mfg. Co., Ltd., Waterloo—Chairs.
Royal Showcase & Fixture Co., 1347 St. Lawrence Blvd., Montreal—Showcases and Cabinet Work.
Royer, C., St. Sauveur, Quebec—Upholstering.
St. Lawrence Furniture Co., Rivière du Loup.
St. Lawrence Upholstering Co., 1383 St. Lawrence Blvd., Montreal.
St. Pierre, Ph., Abbotsford.
Sanitary Plumbing Mfg. Co., Granby.
Stanfold Chair Mfg. Co., Princeville—Chairs.
Steldbins, Joseph, Abbotsford.
Tobin Mfg. Co., Bromptonville, also St. Lambert and Montreal.
Vallière, Ed., 150 St. Valier, Quebec.
Victoriaville Chair Mfg. Co., Victoriaville—Chairs.
Victoriaville Furniture Co., Victoriaville.
Viles, W. F., Cowansville.
Villeneuve, Joseph, St. Romuald d'Etchemin—Church Furniture.
Vincent, C., & Co., 71 Ste. Anne Joliette—Spring Beds.

HARDWOOD FLOORING

Abel, J. P., Fortin & Co., 379 Desjardins, Montreal.
Allan, John, 300 Atwater, Montreal.
Atlas Construction Co., Ltd., 37 Belmont, Montreal.
Austin, A. E., Wakefield.
Bailey, Jas. M., Leeds Village.
Bourque, Joseph, Hull.
Buckingham Planing Mill Co., Ltd., Buckingham.
Charlebois, E., Lachute Mills.
Clermond, J. O., Valleyfield.
Cosette, Alfred, Valleyfield.
Cummings, A. H., & Son, Ltd., Coaticook.
Dumphouse, Joseph, St. Paulin.
Fenderson, John & Co., Sayabec.
Gaudreault & Bouchard, Baie St. Paul.
Godin Casket Mfg. Co., Sutton.

HARDWOOD FLOORING *Continued*

Industrielle, La Société, de Portes & Châssis, Victoriaville.
Kent Lumber Co., Granby.
Martin & Wallace, Magog.
Nadeau, J. A., Drummondville.
Pelletier, J. B., Yamachiche.
Pepin & Michaud, Arthabaska.
Peters, L. H., Ltd., 10 Ste. Angèle, Quebec.
Robb, R. R., Poltimore.
Ste. Agathe Lumber & Construction Co., Ltd., Ste. Agathe des Monts.
Salvourin & Cie., St. Laurent.
Smith Bros., Campbell's Bay.
Standard Mills, Ltd., Ste Agathe des Monts.
Standard Mills, Ltd., 127 Stanley, Montreal.
Tobin Mfg. Co., Bromptonville (also St. Lambert and Montreal).
Vincent, C. & Co., 74 Ste. Anne Joliette.
Weston & Little, East Angus.

HANDLES AND TOOLS

Allen, Cyrias, St. Zacharie—Cant-dogs.
Auclair, C., & Frère, 112 Bigouette, Quebec.
Bedford Mfg. Co., Bedford.
Boisvert, J. E., Grandes Piles.
Cadieux, Wilfrid, 711 St. Paul, Montreal.
Canada Broom Company, 31a Notre-Dame, E., Montreal, Broom Handles.
Dusablon, Joseph Roger, Co., Ltd., St. Tite.
Gélinas, C. P., & Frère, Three Rivers.
Lachute Shuttle Co., Ltd., Lachute Mills.
Lavallée, E., Katevale.
Megantic Broom Mfg. Co., Ltd., Lake Megantic—Brooms.
Monty, A., Roxton Pond.
Paré, Joseph, Montmagny—Cant-dog Handles.
Prangley, Frank, Bury
Rainville, A., St. Césaire—Axes.
Richard, A., St. Denis, River Richelieu.
Richelieu Umbrella & Parasol Mfg. Co., St. Johns.
Roxton Tool & Mill Co., Ltd., Roxton Pond.
Ste. Agathe Lumber & Construction Co., Ste. Agathe des Monts.
Taschereau & Frère, Plessisville.
Trottier & Frère, St. Tite—Axes.
Vallée & Frère, A. & E., St. Ludger—Brooms.
Usines Générales de Chars et de Machineries, Montmagny.

MACHINERY

Audet & Fils, Baie St. Paul.
Bedard, Henri, Pont Rouge.
Bernard, A., La Cie Industrielle, Ste. Philomène de Fortierville.
Bertrand, F. X., Mfg. Co., St. Hyacinthe.
Bessette, J. & S., La Cie., Ltée. Iberville
Boldue, David, Asbestos
Constantin & O'Brien, Cor. Prince & Wellington, Montreal.
Contant, P., Laurierville
Darling Bros., Ltd., 120 Prince, Montreal Elevators.
Desgardins Co., Ltd., St. Andrédelkamouraska
Fairbanks, E. & T., & Co., Ltd., Sherbrooke Scales.
Fee, John, 107 Lagauchetière W. Montreal
Gilmour, A., Coaticook.
Godbout, La Cie., St. Aimé
Gosselin, J. A., Drummondville
Hardy, Eugène & Frère, St. Casimir.
Juben, Chas. A., Pont Rouge.
Johnston, Alex., & Son, North Hatley.
Larterie, La Cie. de, St. Pierre

MACHINERY *Continued*

Leclerc, Ulric, Pont Rouge.
Lemay, Edouard, Deschaillons.
Lemire, A., Wotton Stump-pulers, Snow-ploughs.
Mercier, La Cie de Machinerie, Ltée., Lévis.
Miller Bros. & Sons, Ltd., 120 Dalhousie, Montreal.
Otis-Fenson Elevator Co., Ltd 368 St. James, Montreal.
Paquin, J. E., Deschambault.
Plessisville, La Fonderie de, Plessisville.
Robertsonville Foundry, Robertsonville.
Roy, La Cie Fonderie, St. Anselme.
Sherbrooke Machinery Co., Ltd., Sherbrooke—Pulp-mills.
Sheeper & Akhurst, Ltd., Coaticook.
Singer Mfg. Co., St. Johns—Sewing-machines.
Tardif, J. B., Plessisville.
Thebeau, A., St. Charles, River Richelieu—Washing-machines.
Usines Générales de Chars et de Machineries, Ltée., Montmagny.
Vessot, S. & Co., Joliette.
White Mop Wringer Co., South Stukely—Wringers.

MUSICAL INSTRUMENTS

Canadian Pipe Organ Co., Ltd., St Hyacinthe—Organs.
Casavant Frères, St Hyacinthe—Organs.
Craig Piano Co., Montreal.
Davignon, J. H., 144 Ste. Catherine, Montreal—Violins.
Dionne, T. O., 114 Ste. Catherine, Montreal—Violins.
Gingras & Cie., 2679 St. Hubert, Montreal.
Lesage, A., Ste. Thérèse—Pianos.
Sénécal & Quibloz, Ste. Thérèse—Pianos.
Willis Piano Co., Ltd., Ste. Thérèse.

PATTERNS

Armstrong-Whitworth of Canada, 22 Victoria Square, Montreal.
Audet & Fils, Baie St. Paul.
Beauchemin & Fils, Ltée., Sorel.
Bedard, Henri, Pont Rouge.
Bertrand, F. X., Mfg. Co., St. Hyacinthe.
Canada Iron Corporation Ltd., Three Rivers, (Head Office, Montreal).
Canadian Allis-Chalmers, Ltd., Montreal
Canadian Ingersoll-Rand Co., Ltd., Sherbrooke.
Darling Bros., Ltd., 120 Prince, Montreal.
Davidson Mfg. Co., 187 Delisle, Montreal.
Deguise, Frère, Sorel.
Dominion Bridge Co., Ltd., Lachine.
Federal Electric & Mfg. Co., 1156 Carrière Rd., Montreal.
Fee, John, 107 Lagauchetière, Montreal.
Gosselin, J. A., Drummondville.
Gravel, Arthur, 25 St. George, Montreal.
Lamarre & Co., St. Rémi.
Lauro & Wilkinson, 80 Lagauchetière W., Montreal.
Lindsay & Richer, 20 Longueuil Lane, Montreal.
Mercier, La Cie. de Machinerie, Ltée., Lévis.
Miller Bros. & Sons, 120 Dalhousie, Montreal.
Mitchell, Robert, Co., Ltd., 64 Belair, Montreal.
Modern Foundry & Soil Pipe Co., Ltd., Three Rivers
Robertsonville Foundry, Robertsonville.
St. Lawrence Iron Foundry Co., 1061, 27 Tansley, Montreal.
Shawinigan Falls Foundry Co., Shawinigan Falls.
Terreau & Racine, 196 St. Paul, Quebec.

PATTERNS *Continued*

Thetford Cie., Ltée., La Fonderie de, Thetford Mines.
Union Screen Plate Co. of Canada, Ltd., Lennoxville.
Usines Générales de Chars et de Machineries, Montmagny.
Watson, Walter, A., 115 Bleury, Montreal.

PUMPS, TANKS AND SILOS

Behnr Tank & Tower Co., Ltd., 1835 Ontario, Montreal.
Johnston, Alex., & Son, North Hatley.
Messier, H. L., East Farnham.
Sanitary Plumbing Mfg. Co., Granby.
Savoie-Guay Co., Plessisville Station.

REFRIGERATORS

Fabien, C.P., Ste. Cunégonde, Montreal.
Messier, H. L., East Farnham.

SASH, DOORS, AND BUILDING MATERIAL

Abel, J., P., Fortin & Co., 379 Desjardins, Montreal.
Agagnier, J. A., St. Malo
Aincy, N., 42 Berthelet, Montreal Staircases.
Allaire, Pierre, St. Ours.
Allan, John, 560 Atwater, Montreal.
Allard, Isaie, 1360 Des Erables, Montreal.
Allen, Cyrius, St. Zacharie.
Ally, Aimé, & Co., Grand'Mère.
Arsenault, Hilarion, St. Ours.
Asselin, Athanase, St. Jean de Matha.
Aubert, Joseph, St. Gilles.
Auclair, T. A., Mfg. Co., St. Hilaire Station.
Audet, E. O., Victoriaville.
Auger, Jean L., Lac Bellemare.
Babin, Lazare, St. Hélène de la Croix.
Babin, J. Philippe, Fauvel.
Bailey, Jas. M., Leeds Village.
Barbeau, J. B., 1581 de l'Eglise, Montreal.
Baril, R., Gentilly
Baril & Fils, Gentilly.
Barré & Charron, Granby.
Barsalou, A., Laprairie.
Beaucage, Henri, Sorel.
Beaudet & Tourigneault, Parisville.
Beaudoin, Avila, Lanoraie.
Beaudoin, J. B., St. François.
Beaulieu, Joseph, Sherbrooke.
Beauprê, Honoré, St. Raymond.
Bélanger, C., St. Siméon.
Bélanger & Frère, Valleyfield.
Bélanger, J. T., & Fils, Laval des Rapides.
Bellemare, Thomas, Ste. Flore.
Bergeron, H., St. Léonard d'Aston.
Bergeron, O., 168 Beaudry, Montreal Staircases.
Bergeron, W. H., St. Narcisse.
Bernard, Paul, St. Dominique de Bagot.
Bernard, H. & J. A., Co., Carleton Centre.
Bernatchez, J. M., Montmagny.
Bernier, F., & Frères, St. Fabien.
Bertrand, M., Masham Mills.
Bertrand & Lapointe, St. Sauveur, Quebec.
Bérubé, Arthur, Mont Carmel.
Bérubé & Frères, St. George-Est
Binet, J. D., Erasmville.
Bissaillon, Ferdinand, Kamuraska.
Boileau, Frères, Isle Bizard
Boucher, Frs., St. Clement.
Bourassa, P. E., & Fils, 1495 Notre-Dame, Montreal.
Bourque, Joseph, Hull
Breen, Thos., Gingues

SASH, DOORS AND BUILDING MATERIAL *Con.*

Bresee, G. G., Waterloo.
Brisson, Joseph, Ste. Béatrix.
Brown, R. S., St. Chrysostôme.
Brulet, Omer, Notre-Dame du Rosaire.
Brunelle Furnace & Boiler Co., Ltd., Yamachiche.
Buckingham Planing Mill Co., Ltd., Buckingham
Burrill Lumber Co., Three Rivers.
Bush & Bartlett, Sherbrooke.
Caron, Amédée, St. Cyrille.
Caron, Albert, St. Pamphile.
Caron, Thos., St. Aubert.
Caron, L., Sons Co., Ltd., Nicolet.
Castle & Son, 568 St. Catherine, W., Montreal.
Cayouette, C. A., Tingwick.
Chagnon, H., & Cie., Ltée., 25 Burnett, Montreal.
Champagne, A., St. Léonard d'Aston.
Champoux, Henri, Joliette.
Charbonneau, Zenon, 3688 Alice, Montreal.
Charlebois, E., Lachute Mills.
Charron & Frère, St. Thérèse.
Chatel, Wilfrid St. Remi.
Chouinard, H., St Jean Port Joli.
Church, Ros. Co., Ltd., 22 St. John, Montreal.
Clermont, J. O., Valleyfield.
Goderre, D., & Fils, St. Jacques.
Construction de Bois, La Cie de, Ltée., St. Agathe des Monts.
Corbeil, J. N., Ste. Anne de Bellevue.
Corriveault Jos., Notre-Dame des Bois.
Cossette, Alfred, Valleyfield.
Courtemanche, J. A., 1758 Henri Julien, Montreal—Staircases.
Crevier & Fils, 496 498 Clarke, Montreal.
Croteau, Arthur, St. Appollinaire.
Cummings, A. H., & Sons, Ltd., Coaticook.
Cummings, M. H., River Désert.
Cyr, Mrs. Damien, Ste. Rose.
Cyr, N. Charles, New Richmond Station.
Dampboose, Joseph, St. Paulin.
Dazil, Louis, St. Thomas de Joliette.
Demers, J. B., St. Albert.
Demuie, George, St. Paul de la Croix.
Deschene, J., Price.
Deschesneau, C. E., Verdun.
Desjardins, Polydore, Mont Carmel.
Deslaurier, Nap., Montreal.
Desrochers, Charles, Ste. Angèle de Rimouski.
Dinelle, Benjamin, Chéneville.
Dion, Ely, Lake Megantic.
Dion, Francis, Maria Capes.
Dion, Léonidas, Thetford Mines.
Dubé, L., Shawinigan Falls.
Duchaine, Mederic, Hebertville Station.
Duff, J. A., St. Eugène de Grantham.
Dugas, Paul, Matane.
Duguet, Charles, St. Nicholas.
Dupuis, Bonfet, St. Thècle Station.
Dupuis & Poirier, Inc., 1256 Galt, Montreal.
Dussault, Ferdinand, St. Ferdinand
Dussault, Gédéon, Ste. Marguerite
Eastern Township Box Co., Disraeli.
Faucher, François, St. Ephrem de Tring.
Fleury, Edouard, Pohsle.
Forde, Thos., Ltd., 160 McCord, Montreal.
Fortin, Jos. Ant., Cap St. Ignace.
Fromson, M., 68 Colonial, Montreal Fixtures.
Gagné, Jos., Ste. Julie Station.
Gagnon & Frère, Roberval.
Gagnon, V., & Frère, Lambton.
Gamache, Louis, Bic
Gandreault & Bouchard, Baie St. Paul.
Gaumont, Théophile, Wotton.
Giard, Nap., St. Michel de Rougemont.
Gignac, J. H., Ltée., 142 de l'Eglise Quebec
Gilmour, A. Coaticook.
Godin Casket Mfg. Co., Sutton.
Gosselin, Jos., Notre-Dame de Lévis.
Gosselin, J. Honoré, Drummondville.

SASH, DOORS, AND BUILDING MATERIAL—*Con.*

Goulet, D., Lake Megantic.
Goyette, Onésime, Lamorale.
Grégoire, A. Montreal.
Grenier Joseph, Beauport, East.
Grothé, F. X., 6 St. Catherine, Montreal.
Guertin & Bouchard, 440 Parthenais, Montreal.
Guilmette, Jos., St., Félicien.
Guimont, Z., Cap St. Ignace.
Hamond, Jean, St. Fabien.
Hastie, John, Ormstown.
Hodgins, Robert E., Sharwville.
Houde, Nap., Issoudun.
Houdé, Alf., St. Alexis des Monts.
Hudon, J. C., Metabetchouan.
Hudon, J. H., & Co., St. Pascal.
Hudon, T. S., & Co., Board of Trade Bldg. Montreal.
Idéale Portes & Châssis, La Cie., Ltée, 596 St. Patrick, Montreal.
Industrielle-Chicoutimi, La Cie., Chicoutimi.
Industrielle de Joliette, La Cie, Ltée., Joliette.
Industrielle de Lacroix, La Cie., Ltée., Contrecoeur.
Industrielle de Rimouski, La Cie., Rimouski.
Industrielle, La Société, de Portes & Châssis, Victoriaville.
Jacques, M., St. Léon le Grand.
Jasmine & Cantin, Cartierville.
Jean, L., St. Anaclet.
Julien, Alex., Mont Carmel.
Julien, L., St. Anaclet.
Kenogami Sash & Door Factory, Ltd., Kenogami.
Kent Lumber Co., Granby.
Kinsella, Jos., Rawdon.
Labbé, Joseph, Tring Junction.
Laberge, Louis, & Co., Athelstan.
Lacasse, Edouard, Mawcook.
Lacasse, W. Hemmingford.
Lachance & Fils, Fraserville Station.
Lafleur, O. B., & Fils, Lachute.
Lafrance, F. X., St. Louis de Gonzague.
Laliberté, E., Ste. Philomène de Fortierville.
Lalonde, Damien, Ltd., 1009 Christophe Colombe, Montreal.
Lamarche, J. A., & Son, 2382 St. Lawrence Blvd., Montreal.
Lambert, J. E., La Tuque.
Lamothe, J. M., Valleyfield.
Landry, Telesphore, St. Bruno de Kamouraska.
Landry, A. C., Frères, St. Octave.
Langevin, Alf., St. Maxime.
Langis, Alfred, St. Octave.
Langlois, L. G., Ste. Geneviève de Batiscan.
Larivière, C., Ltd., Roxton Falls.
Larivière, P., Contrecoeur.
Larivière Nap., 55 Montana, Montreal Stairs & Verandas
Larochelle, M., Ste. Prosper de Dorchester.
Laroche, Anna, I. & Hippolyte, Metabetchouan
Laroche, Isidé, Grande Bergeronnes.
Latour & Dupuis, St. Johns.
Launière, P., Lac Bouchette Station.
Laurendeau, Anatolée, St. Jean Port Joli.
Laurendeau, H., St. Paul de Chester.
Leblanc, J. A., Nicolet
Leboeuf, Ludger, St., Casimir.
Leclere, Joseph, St. Pierre d'Orléans.
Leclerc, J. E., L'Islet.
Leclerc, J. N., Maria.
Leclerc, N., L'Islet Station.
Leduc & Fortin, Beauharnois.
Lefèvre, Odilon, St. Antoine de Tilly.
Lefèvre, Z., St. Philippe de Laprairie.
Legaré, A., St. Thècle
Lemay, Edouard, Deschaillon.
Lemay, H., & Frères, St. Camille.
Lemieux, A., St. Camille
Lemieux, A., St. Stanislas de Kostka.

SASH, DOORS, AND BUILDING MATERIAL—*Con.*

Lemire, Ad., Pont de Maskinongé.
Letourneau, & Paquet, Linière.
Leroux, P., St. André Avellin.
Levasseur, Philippe, Ste Anne de la Pocatière.
Levasseur, Isidore, St. Ulric.
Longpré, L. P., Charlemagne.
Loomis, D. Co. & Sons, 1112 St. Patrick, Montreal.
Lord, Bourbonnais, & Perron, Ltée., Lachine.
Lotbinière Wood Mfg. Co., Ste. Croix.
Lumber & Construction Co., Ltd., Ville St. Pierre
Lupien, P., Wickham West.
Lyall, P., & Sons, Construction Co., Ltd., 5072 Western, Montreal.
McFarlane, Robert, & Co., Ltd., Cor. Richmond & St. James, Montreal.
McLaurin Bros., Lachine.
Marcotte, Eugène, St. Alban.
Marion, A., St. Edwidg
Martel, Janvier, L'Anse St. Jean
Martel, Raoul, Ste. Monique de Nicolet.
Martin & Wallace, Magog
Mathieu, H., & Cie., H. Clarke, Montreal.
Messier, H. L., East Farnham.
Messier & Bérard, Granby.
Meunier, A., Chambly Canton.
Meunier, E., St. Jérôme.
Meunier, Frs., & Fils, Aboutsie
Michaud, G. A., Ste. Anne de la Pocatière.
Monette, A., St. Jérôme.
Monette, Francis, Cie., Ste. Rose
Montfort, Orphanage, Montfort
Montreal Light, Heat, & Power Co., Montreal
Morin, J. R., St. Eberthère.
Nadeau, J. A., Drummondville.
Nesbit, E. T., 10th Avenue Limoilou Ward, Quebec.
Normand & Frère, St. Norbert d'Arthabaska.
North Hatley Mfg. Co., North Hatley.
Ouellet, J. A., & Cie, Roberval.
Ouellette, Chas., Ferme Neuve.
Paradis, G. Warwick.
Parent, J. B., St. Eloi.
Paquette, A., St. Hugues.
Paquette, P. O., St. Justin.
Paquin, J. E., Deschambault.
Pauzé, A., New Glasgow.
Pauzé & Fils, La Cie., Montreal.
Pauzé & Gohier, 1822 Côte des Neiges, Montreal
Pelland & Frères, Ste. Elizabeth.
Pelletier, J. B. Yamachiche.
Pepin & Michaud, Arthabaska.
Perreault, J. M., Beloeil Village.
Peter, L. H., Ltd., 10 Ste. Angèle, Quebec.
Picard, L. P., St. Pierre.
Pilon, Joseph, Hull.
Plante & Roy, Mont Joli.
Plonde, Fortunat, Bic.
Poirier, Pierre, St. Félix de Valois.
Poirier & Frères, St. Gabriel de Brandon.
Pollender & Frère, Farnham.
Prangley, Frank, Bury
Pratte, A. W., St. Célestin.
Prevost, Chas., Bergerville Bruchesi Pontiac Co.
Quintin, J. B., Marieville.
Ranger, E., 3522 Henri Julien, Montreal.
Raymond, Denis, St. Denis de la Bouteillerie.
Reid, G. W., & Co., Ltd., 37 St. Catoine, Montreal.
Roberge & Giroux, Château Richer
Roberge, J. B., & Fils, St. Gabriel de Brandon.
Robert, Napoleon, Courcelles.
Rochefort, L. Bécancour.
Rochon, G., 1750 Bellechasse, Montreal.
Rossignol, J. A., St. Philippe Ouest.
Rousseau, A., 1025 Boyer, Montreal.
Rousseau, Nazaire, & Frère, Rivière Bois Clair

SASH, DOORS, AND BUILDING MATERIAL—*Con.*

Roux, Albert, Three Rivers.
Roy, F. X., St. Prime.
Roy, L. A., St. Jean Baptiste de Ronville.
Roy, J. G., Cap Chat.
Roy, La Cie Fonderie, St. Anselme.
St Cyr, Ed., St Didace.
St. Jean, Georges, St. Bruno Station.
St. Laurent, Louis, St. Henri de Lévis.
St. Martin, A., Upton.
St. Pierre, Alex., Three Rivers.
St. Pierre, Ph., Abbotsford.
Salsourin, J. A., Ripon.
Salsourin & Co., St. Laurent.
Sarrasin, Napoleon, & Fils, Ltée., Montreal.
Saumure, Philippe, 1222 Henri Julien, Montreal.
Seney & Cie., Victoriaville.
Servis, A., & Frères, Rimouski.
Sévigny, A., Sorel.
Smith Bros., Campbell's Bay.
Stebbins, Jos., Abbotsford.
Stevens, H. G., Dunham.
Sylvester, J. C., St. Fabien de Panet.
Talbot, J. Alfred, St. Paul du Buton.
Tangnay A., Petit Bois.
Tringuay, O., Langevin.
Thebeau, A., St. Charles, River Richelieu.
Thérénult, Joseph, St. Pacôme Station.
Thibault, Joseph, Montmagny.
Thisdale, O., Magog.
Tobin Mfg. Co., Bromptonville (also St. Lambert & Montreal).
Traversy, V. E., 15 Josephat, Montreal.
Trendblay, Ernest, Rivière du Moulin.
Trendblay, J. B. P., Kamouraska.
Tremblay Philippe, St. Irénée.
Tremblay, Joseph & Octave., St. Marcel de L'Islet.
Trottier, O., Notre-Dame.
Trottier & Frère, St. Tite.
Turcotte, L., Stornoway.
Turcotte, Omer, Feuille d'Erable.
Vallée, Alfred, St. Thuribe.
Vallée, C., Nominingue.
Vallée & Frère, St. Ludger.
Vaillancourt, Eugène, St. Mathieu.
Viellet, Jos., Lancaster, Clapperton.
Vignault, O. P., Lachine.
Vincent, C. & Co., 74 Ste. Anne, Joliet.
Waterman, O. C., Magog.
Weston & Little East Angus.
White, W. H., 77 Evanshale, Ville St. Pierre.
Wood Mfg. Co., 85 St. Peter, Quebec.

SHUTTLES, SPOOLS, BOBBINS, ETC

Lachute Shuttle Co., Ltd., Lachute Mills.
Richardson, James, Co., Ltd., Matane.
Ste. Agathe Lumber & Construction Co., Ltd., Ste. Agathe des Monts.
Simard, Edmond, Baie St. Paul.
Thompson & Co., Sherbrooke.

TOYS AND SPORTING GOODS

Boissonneault Adi., St. Laurent d'Orléans.
Comeau, V. B., & Co., Farnham.
Demers Clothespin Mfg. Co., Drummondville.
Dusablon The Joseph Roger, Co., Ltd., St. Tite.
Gignac, J. H., 142 de l'Eglise, Quebec.
Grenier Joseph, Beauport East.
Millette & Son, Lawrenceville.
Perreault, A., St. Paul l'Ermite.
Robertsonville Foundry Co., Ltd., Robertsonville.
Roxton Mills, & Chan Mfg. Co., Ltd., Waterloo — Kindergarten Supplies.
Ste. Agathe Lumber & Construction Co., Ltd., Ste. Agathe des Monts.
Saumure, Philippe, 1222 Henri Julien, Montreal.

VEHICLES

Allaire, Pierre, St. Ours—Supplies.
Andy, Alfred, Charlesbourg.
Audet & Fils, Baie St. Paul.
Auger, E., St. Pierre Baptiste—Repairs.
Babin, J. Philippe, Fauvel.
Banville, Od., St. Octave.
Beaudoamp, J., Ville St. Louis, Station L., Montreal.
Beaudoin, Oxole, Sherrington.
Beaudoin P., St. Agapit Station.
Beaulieu, Jos., & Frères, Orleans.
Beaulieu J. A., St. André Station.
Bégin Théodore, Beddie.
Bélanger, Léon, 474 Church, Hochelaga, Montreal.
Bellerive, J., St. Barnabé Nord.
Benoit, Alfred J., St. Barnabé Sud.
Bergevin, F., Châteauguay—Repairs.
Bernatchez, J. M., Montmagny.
Bernier Auguste, Carleton.
Bernier, Théodore, La Patrie.
Berthelet, W., Chaleurs.
Bérubé, Alphonse, Pumchand.
Bérubé, Arthur, Mont Carmel.
Biron, P., & Fils, La Cie., Sherbrooke.
Bishop, S. H., Bishop's Crossing.
Blain, N., 68 Cusgrain, Montreal.
Blais, Joseph, Chapeau.
Bloun & Frère, St. Sébastien de Beauce.
Boissonneault, Adj., St. Laurent d'Orléans.
Bouvin, O., Les Saules.
Boldue, Alp., Compton.
Boldue, Duval, Asbestos.
Bonhomme, Ltée., 200 Guy, Montreal.
Bouchard, Eugène, Metabetchouan.
Boulenard, J., Jonquières.
Bourdon, W., Beauharnois.
Bouré, Honoré, 37 39 St. Roch, Quebec.
Bourgeois, F., La Baie.
Bourgeois, M. Montebello.
Brissette, Joseph, St. Justin.
Brosseau, H. A., 813 Craig E., Montreal—Repairs.
Bureau, Cv., Lambton—Repairs.
Cadieux, D., Montebello.
Cadieux, H., Buckingham.
Cameron, John E., Brysonville.
Caron, A., 2268 St. Lawrence Blvd., Montreal. Repairs.
Caron & Robitaille Co., 1169 Papineau, Montreal.
Carrier P., Dalhaire.
Carufel, H. P., Ste. Elizabeth.
Cayouette, C. A., Tingwick.
Champagne, T., St. Bernard de Dorchester.
Charbonneau, Isaie, 2147 St. Laurent, Montreal.
Charet, Aug., Sherbrooke.
Charland, Siméon, Bromptonville.
Chimie & Compagnie, Chicoutimi Ouest.
Cleary, Joseph, Shawbridge.
Clifford, H. P., Way's Mills—Farm Vehicles.
Collin, A., Ste. Félicité—Repairs.
Colvin, W. J., Sawyerville.
Cormier, Joseph, St. Hyacinthe—Repairs.
Couture, Emile, Chicoutimi.
Couture, P., Lauriervalle.
Croteau, J. A., St. Bernard Lacolle.
Cyr, Charles P., New Richmond Station.
David, O., 659 Papineau, Montreal.
David, O., 9 Bœuf, Montreal.
Davignon, F., St. Alexander d'Iberville.
Delorme, O., Ham Sud.
Demers, M., Compton.
Denault, Arthur, Notre-Dame de Stanbridge.
Desaulniers, H. L., Yamachiche.
Desclene, Ths., Ste. Blandine—Repairs.
Deshaies, Pierre, Ste. Sophie de Lévrard.
Desilets, Alp., Ste. Eulalie—Repairs.
Desilets, Théodore, Victoriaville—Hearses.
Desjardins, Polydore, Mont Carmel.

VEHICLES *Continued*

Desjardins, Jean, Rivière Des Prairies.
Desparois, J. A., Châteauguay.
Desrochers, Charles, Ste. Angèle de Rimouski.
Desrochers, Charles, St. Agapit Repairs.
Desrochers, Eugène, Bailargeon
[illegible], Benjamin, Chêneville
[illegible], Polycarpe, St. Georges Est.
Dontigny, P., Champlain.
Dorion, H. M., Beauport.
Dubois, L., Repentigny.
Dufort, D., Charlemagne.
Dufour, Jules, Avignon.
Dugas, Azarias, P. et de Maskinongé
Dungate, H. V., Brynton.
Dupuis, J. P. [illegible]aticook
Dupuis & Bonnet, St. Thècle station.
Dther, Arthur, 226 Beaudry, Montreal.
Dther, Denis, Maniwaki
Durwell, J. A., Lennoxville.
Duvreau & Malone, Barnston.
Eleury, Edouard, Delisle.
Fihon, Arthur, St. Jacques le Mineur.
Fisc[illegible] Alfred, 56 Dorchester, Quebec.
Foisy, V. B., St. Chrysostôme.
Fontaine, Joseph, St. Victor Repairs.
Fontaine, J. B., Contrecoeur.
Fontaine, Noel, Laprairie.
Fortin, V., St. Cyrille
Fortin, J. B., Chicoutimi
Fortin, M., St. Ephrem de Tring.
Fournier, J., Lorette.
Fournier, T. D., Lévis
Frappier & Meloche, 614 Lagauchetiere E., Montreal
Gagné, [illegible]le, Amqui
Gagné, Ludger, St. Chrysostôme.
Gagné, Thos. A., Amqui.
Gagnon, Anselme, Broughton
Gagnon, O., Lawrenceville.
Gamache, Louis, Bic.
Gamble, Joseph, & Sons, R.R. No. 1, Athelstan
Gaudet, Alf., Drummondville
Gauvin, Jas. J., Neuville.
Germain, Louis, 132 Vitre, Montreal.
Gervais, Joseph, Verbos Supplies.
Giroux, George St. Hermes
Giroux, Louis, La Conception Repairs.
Gleason, Martin, Martindale Repairs.
Guy, Nap., 1601 Notre-Dame, W., Montreal.
Halpin, J., 659 Visitation, Montreal.
Hamel, A., River Désert
Hammond, Jean, St. Fabien
Hardy, Eugène, & Frère, St. Casimir
Hébert, F., Beaux-Noix.
Héroux, V., Louiseville.
Houde, T., Ste. Thérèse d'Annas
Hudon, J. C., Metabetchouan.
Huger, Jean L., Lac Bellemare.
Huot, Louis, St. Nicholas
Jacob, J., Drummondville
Jacques, M., St. Léon le Grand.
Johnstone, Alex., & Son, North Hatley.
Joly, Alexandre, L. et à Plouffe
Kenehan, James, [illegible] William Montreal.
Keronack, W., L'Islet.
Labelle, Ursule, Pont Viau.
Lacoste, L. P., St. Jean Baptiste de Rouville.
Laferrière, Z., St. Philippe.
LaPlamme, A., St. Damien.
Lamer, W., St. Henri, Hochelaga, Montreal.
Landry, Z., St. Eustache
Landry, A., & Frère, St. Octave
Langlois, Napoleon, St. Barnabé Nord Repairs.
Laniel, E., Valleyfield
Lapierre, Albini, Cazaville.
Larivière, A. C., St. Antoine, Montreal Repair
Larivière, P., Contrecoeur.
Laroche, Arch., Caconna.
Laroche, Ernest, Caconna.

VEHICLES *Continued*

Laroche Armand, & Hippolyte, Metabetchouan
Latour, R., Huberdeau
Latour & Frère, Lesage.
Lauzière, Cyp., St. Léonard d'Aston.
Laurierville, La manufacturier de Voitures de, Laurierville.
Lavallée E., Kutevale
Lavallée, N., Beloeil Village.
Leclerc, Egide, Issoudun
Leclerc, P. Z., St. Charles de Caplan.
Leloux, P., Kingscroft
Ledoux Carriage Co., Ltd., 93 Osborne, Montreal.
Lefebvre & Perrault, 1747 Papineau, Montreal.
Légaré, A., St. Thècle
Lemay, A., Victoriaville.
Letoux, Adolphe, St. Alexis des Monts.
Letoux, Edouard, Deschaillons.
Lemay, Wilfrid, Frelighsburg
Lemieux, J. W., Lake Megantic.
Lespérance, P., Chambly.
Lessard, Desilbe, Pont de Maskinongé.
Lessard, Ed., Feuille d'Erable.
Letourneau & Paquet, Lumières Sleighs
Levasseur, Isidore St. Ubric
Leveillé, P., 2337 St. Henri, Montreal
Leveseque, C., St. Faustine Station.
Lirette, Louis, 650 Desjardins, Montreal
Loyer, Théodore, Radstock.
Lucas, J. B., Boucherville
Lupien, P., Wickham West
Lytubarnet, T., & Fils, 99 St. Antoine, Three Rivers.
Maillhot, Joseph, Lourdes.
Maillhot, Oscar, Ste. Anne de la Pérade.
Mainguy, Thomas, Les Saules.
Majury, Alex. H., Lysander.
Marinier, D., Lac Masson.
Martel, Chas., Baie St. Paul
Martel, Raoul, Ste. Monique de Nicolet
Martin, Omer, Pont Château
Massicotte, Saul, St. Tite.
McLaughlin & Talbot, Warden Farm Wagons.
McMillen, Alex., Franklin Centre
McKençon, Joseph, St. Jacques Repairs.
Menard, J. D., Chambord.
Mercure, Adolphe, Ange Gardien de Rouville.
Messier & Berard, Granby
Metivier, A., Buckland.
Miller, McLean, Lower Elodden
Mireault, Henri, Mascouche
Miron, Arthur, 379 St. Joseph, Lachine.
Moisan, A. J., East Farnham
Monette, Francis, Cie., Ste. Rose
Montpetit, J. P., 600 Albert, Montreal
Montreal Light, Heat, & Power Co., Montreal
Morin, Victor, L'Islet
Moyman, H. W., Waterloo.
Nadeau, Calix, St. Adrien Supplies
Nadeau & Frère, Beauceville East.
Nareau & Fils, St. Basile le Grand.
Naud, Alex., Deschambault
Normand, Joseph, St. Pascal Wheels.
Normand, P., Montebello.
Normand & Frères, St. Norbert d'Arthabaska Supplies
Normandin, Arthur, Point St. Charles, Montreal
Nicola, Fortunat, Montmagny.
Ontario Carriage Works, 50 Ontario W., Montreal.
Ostigny, Fort., Rougemont Station.
Ostigny, Joseph, Adamsville.
Paré, Joseph, Montmagny.
Parent, J. B., St. Eloi Repairs.
Pareuteau, Ernest, Asbestos.
Park Carriage & Auto Works, Montreal.
Patey, P., St. Isidore Dorchester.
Patemaude, Arsene, St. Constant.