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DEPARTMENT OF THE INTERIOR, CANADA

HON. W. J. ROCHE, Minister; W. W. CORY, Deputy Minister

FORESTRY BRANCH—BULLETIN No. 58B

R. H. CAMPBELL, Director of Forestry

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# FOREST PRODUCTS OF CANADA

1915

## PULPWOOD

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OTTAWA  
GOVERNMENT PRINTING BUREAU  
1916

# Pulpwood Consumption, 1915.

The growth of the pulp and paper industry in Canada has been characterized by rapidity and steadiness. Since 1908, when reliable statistics were first gathered, the consumption of wood in Canada for the manufacture of pulp has increased almost threefold. There has been a decided increase every year with one exception. A slight decrease in 1910 of 3·8 per cent was due to the temporary closing down of two of the larger mills. The increases have varied between 10·4 and 28·9 per cent. There are few manufacturing industries in Canada which can show a more satisfactory record. The figures below and the chart on page 8 will illustrate this fact more clearly:—

1908 .....	482,777	Cords.....	\$ 2,931,653
1909.....	622,129	" .....	3,464,080
1910.....	598,487	" .....	3,585,154
1911.....	672,288	" .....	4,338,024
1912.....	866,042	" .....	5,215,582
1913.....	1,109,034	" .....	7,243,368
1914.....	1,224,376	" .....	8,039,868
1915.....	1,405,836	" .....	9,426,217

Fifty firms and individuals operating pulp-mills in Canada in 1915 contributed the information on which this bulletin is based. Of the mills operating in 1914 only one was reported as idle in 1915. Two entirely new mills began to manufacture pulp in that year and two idle mills resumed operations.

The Canadian pulp-mills in 1915 consumed a total of 1,405,836 cords of pulpwood valued at \$9,426,217. During the same year 949,714 cords valued at \$6,164,113 were exported to the United States making a total of 2,355,550 cords valued at \$15,590,330 as the cut of pulpwood from Canada's forests in 1915.

TABLE 1.—PULPWOOD 1914 AND 1915 BY PROVINCES.

Provinces.	No. of Firms Reporting.	Quantity.		Per cent Distribu-	Total value.	Average value per cord.	
		1914.	1915.	1915.	1915.	1914.	1915.
		Cords.	Cords.		\$	\$ cts.	\$ cts.
<b>Total, All Provinces.....</b>	<b>50</b>	<b>1,224,370</b>	<b>1,405,836</b>	<b>100·0</b>	<b>9,426,217</b>	<b>6 61</b>	<b>6 71</b>
Quebec.....	24	636,496	697,962	49·6	4,227,033	6 52	6 06
Ontario.....	15	447,751	480,627	34·2	3,806,804	7 08	7 92
New Brunswick.....	4	49,339	115,842	8·2	732,521	6 01	5 32
British Columbia.....	2	80,013	90,535	6·4	550,809	5 33	6 08
Nova Scotia.....	5	10,777	20,870	1·5	99,050	4 27	4 75

The manufacture of pulpwood is one of the few industries, not engaged in the production of munitions, which has not suffered from war conditions. While the cost of raw material has increased and labour conditions have been disturbed, the demand for pulp has increased for American consumption and the difficulty of obtaining this commodity from Scandinavian sources has increased the overseas demand. The consumption of wood for pulp manufacture

in Canada shows an increase of 14·8 per cent in 1915. Increases are to be noted in every province in Canada as follows,—Quebec, 9·7 per cent; Ontario, 7·3; New Brunswick, 134·8; (bringing this province up to third on the list in place of British Columbia), British Columbia, 13·2 and Nova Scotia, 93·7.

The average value of pulpwood at the mill was an increase of 10 cents per cord over that of 1914. The value increased in every province but Quebec.

DIAGRAM No 1

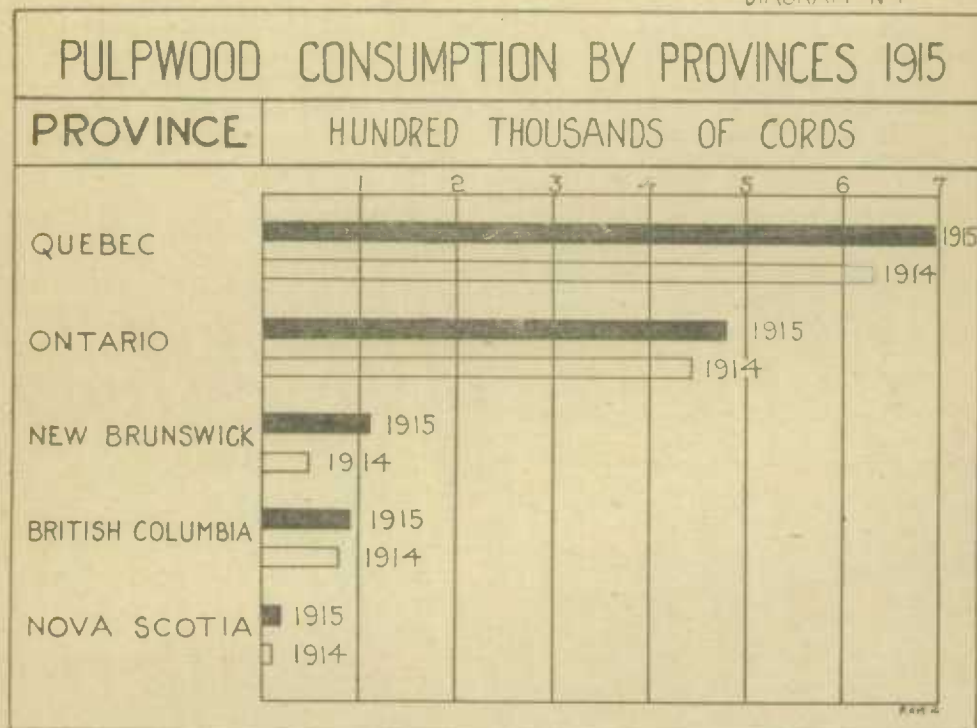


TABLE 2.—PULPWOOD 1914 AND 1915 BY KINDS OF WOOD.

Kinds of Wood.	No. of Firms Reporting.	Quantity.		Per cent Distribution.	Total value.	Average value per cord.	
		1914.	1915.			1914.	1915.
		Cords.	Cords.		\$	\$ cts.	\$ cts.
<b>Total</b> .....	<b>50</b>	<b>1,224,376</b>	<b>1,405,836</b>	<b>100.0</b>	<b>3,426,217</b>	<b>6 61</b>	<b>6 71</b>
Spruce.....	50	836,387	998,156	71.0	7,057,572	6 70	7 07
Balsam Fir.....	33	314,183	307,219	21.9	1,795,372	6 58	5 84
Hemlock.....	6	45,246	55,265	3.9	325,411	5 63	5 89
Jack Pine.....	4	29,715	41,953	3.0	225,259	5 49	5 37
Poplar.....	3	3,845	3,243	0.2	22,503	6 81	6 94

The wood of the jack pine (*Pinus Banksiana*) has objectionable features and the tree has not been cut extensively for lumber in Canada. The manufacture of sulphate or kraft pulp has opened a new market for the wood of this tree. In 1912 only 40 cords of this wood were reported as having been used for pulp making. In 1913, when the kraft pulp was first made extensively, 19,383 cords were reported, all of which was used in the sulphate process. The increase from 1914 to 1915 was almost 70 per cent.

There was a smaller increase in the use of spruce and hemlock and a decrease in balsam fir and poplar. While these five woods are the only ones reported it should be borne in mind that small quantities of white and red pine and tamarack are often used. Spruce pulpwood and balsam fir pulpwood, as purchased by the mills, frequently contain a small accidental proportion of these woods which is not reported.

DIAGRAM N°2

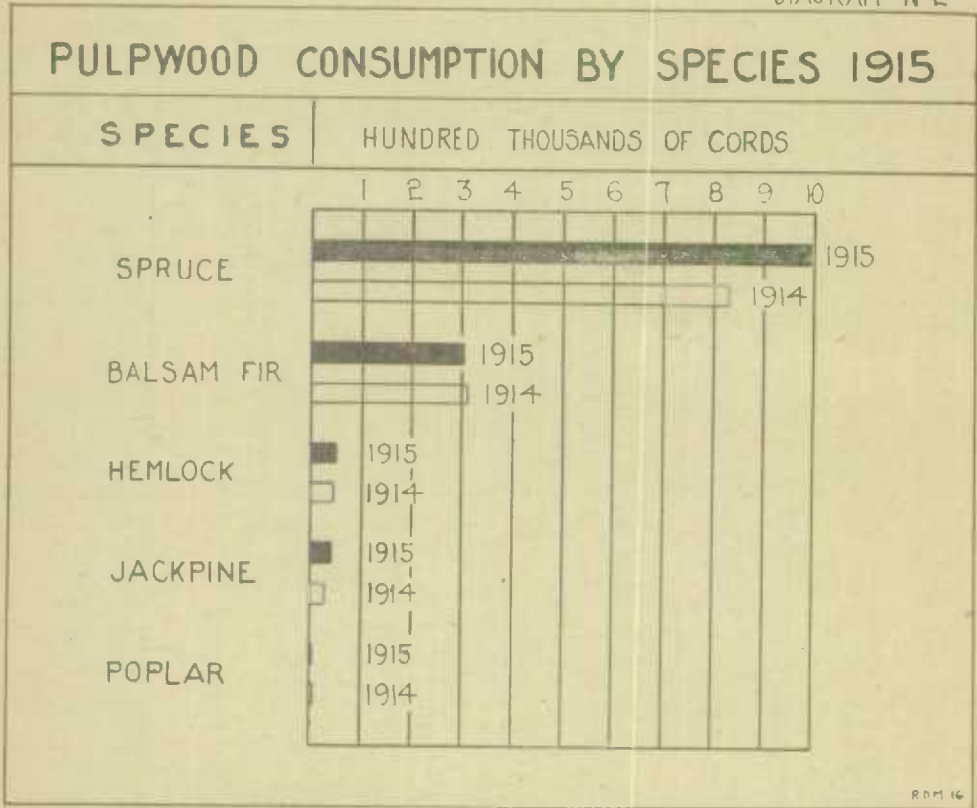


TABLE 3.—PULPWOOD 1914 AND 1915 BY PROCESSES.

Processes.	No. of Firms Reporting.	Quantity.		Per cent Distribution.	Total value.	Average value per cord.	
		1914.	1915.			1914.	1915.
		Cords.	Cords.		\$	\$ cts.	\$ cts.
<b>Total</b> .....	<b>50</b>	<b>1,224,376</b>	<b>1,495,836</b>	<b>100.0</b>	<b>9,416,217</b>	<b>6 61</b>	<b>6 71</b>
Mechanical.....	40	644,924	743,776	52.9	4,821,227	6 86	6 48
Sulphite.....	16	435,101	470,949	33.5	3,434,015	6 76	7 20
Sulphate.....	5	140,666	184,811	13.1	1,128,318	4 96	6 11
Soda.....	1	3,785	6,300	0.5	42,657	7 00	6 77

The proportion of wood used in the mechanical and chemical processes of pulp making remained about the same in 1915 as in 1914. The percentage of wood converted into pulp by the chemical process increased from 36.5 per cent in 1908 to 47.3 per cent in 1914, and 47.1 per cent in 1915. Almost half the wood consumed in the industry now goes to make chemical pulp. The use of wood has increased in actual quantity with all four of the processes used.

DIAGRAM N°3

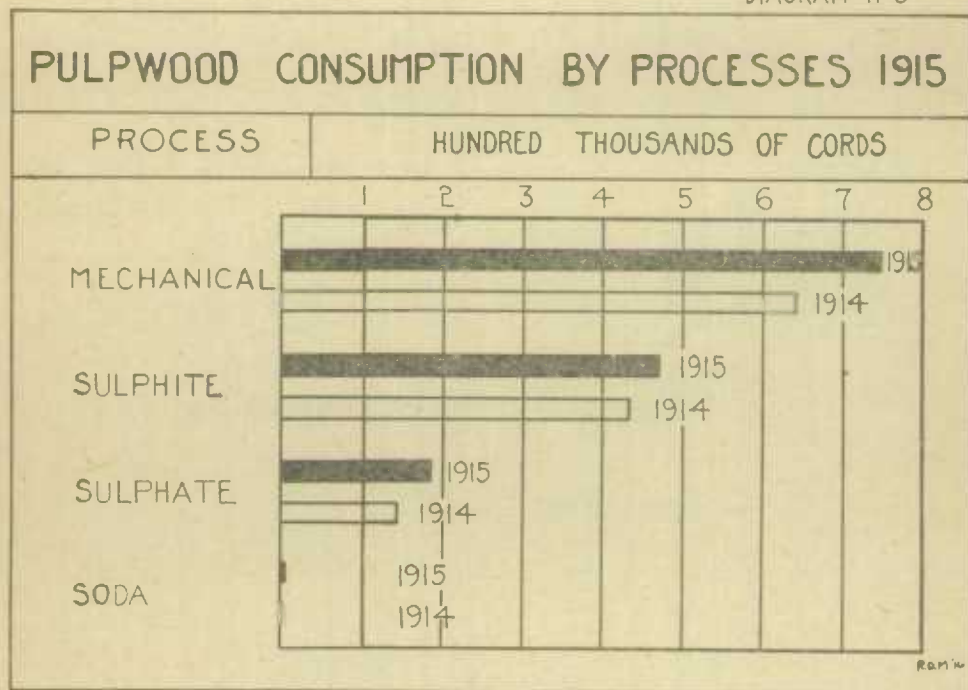




TABLE 4.—PULPWOOD 1915 BY PROVINCES, KINDS OF WOOD AND PROCESSES.

	Total Quantity.	Total cost.	Average cost.	Mechan- ical.	Sulphite.	Sulphate.	Soda.
	Tons.			Tons.	Tons.	Tons.	Tons.
Pulp Produced.....	1,074,805			743,776	235,474	92,405	3,150
Quebec.....	561,793			425,626	50,612	82,405	3,150
Ontario.....	364,226			247,825	106,401	10,000	
New Brunswick.....	62,093			8,344	53,749		
British Columbia.....	65,823			41,111	24,712		
Nova Scotia.....	20,870			20,870			
	Cords.	\$	\$ cts.	Cords.	Cords.	Cords.	Cords.
Wood Used (Total, all kinds)	1,405,836	9,426,217	6 71	743,776	470,949	184,811	6,300
Quebec.....	697,962	4,237,033	6 07	425,626	101,225	164,811	6,300
Ontario.....	480,627	3,806,804	7 92	247,825	212,802	20,000	
New Brunswick.....	115,842	732,521	6 32	8,344	107,498		
British Columbia.....	90,535	550,809	6 08	41,111	49,424		
Nova Scotia.....	20,870	99,050	4 75	20,870			
Spruce.....	998,156	7,057,672	7 07	542,251	344,773	106,714	4,418
Quebec.....	455,165	2,914,369	6 40	280,123	67,910	102,714	4,418
Ontario.....	396,115	3,221,397	8 13	213,779	178,336	4,000	
New Brunswick.....	92,060	598,456	6 50	5,562	86,498		
British Columbia.....	34,526	226,687	6 57	22,497	12,029		
Nova Scotia.....	20,290	96,763	4 77	20,290			
Balsam Fir.....	307,219	1,795,372	5 84	179,540	88,455	39,224	
Quebec.....	213,376	1,130,455	5 30	143,370	30,782	39,224	
Ontario.....	66,631	515,215	7 73	32,953	33,673		
New Brunswick.....	23,782	134,065	5 64	2,782	21,000		
British Columbia.....	3,000	14,000	4 66		3,000		
Nova Scotia.....	430	1,637	3 81	430			
Hemlock.....	55,265	325,411	5 89	19,791	35,188	286	
Quebec.....	286	1,144	4 00			286	
Ontario.....	1,820	13,495	7 41	1,027	793		
British Columbia.....	53,009	310,122	5 85	18,614	34,395		
Jack Pine.....	41,953	225,259	5 37	2,133	1,233	38,587	
Quebec.....	25,953	169,259	6 52	2,133	1,233	22,587	
Ontario.....	16,000	56,000	3 50			16,000	
Poplar.....	3,243	22,503	6 94	61	1,300		1,882
Quebec.....	3,182	21,806	6 85		1,300		1,882
Ontario.....	61	697	11 42	61			

Approximately 1,074,805 tons of air-dry pulp were manufactured in Canada in 1915, assuming that one cord of wood will produce one ton of ground-wood pulp or one-half ton of chemical fibre. This total is an increase of 15 per cent over 1914. With ground-wood pulp the increase was 15·3 per cent and with the chemical fibre made by the three processes together 14·2 per cent. The manufacture of chemical fibre by the sulphite process shows an increase of 8·2 per cent, by the sulphate process 31·4 and by the soda process 66·4.

Spruce and balsam fir are used in all five provinces and in all four processes of pulp manufacture. Hemlock was not reported from New Brunswick, nor used in making soda pulp. Jack pine was reported only from Ontario and Quebec and was used in making sulphate pulp alone. Poplar was reported from Ontario and Quebec only and was not used in making sulphate pulp.

PRODUCTION, MANUFACTURE & EXPORT OF PULPWOOD  
CANADA 1908-1915

100 M.  
CORDS

24

23

22

21

20

19

18

17

16

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

TOTAL PRODUCTION

EXPORTED IN RAW STATE

MANUFACTURED INTO PULP IN CANADA

1908

1909

1910

1911

1912

1913

1914

1915

(AS)

TABLE 5.—CANADIAN PULPWOOD EXPORTED UNMANUFACTURED *vs.* THAT MANUFACTURED IN CANADA, 1914 and 1915.

	1914.				1915.			
	Quantity.	Value.	Value per cord.	Per cent Dist.	Quantity.	Value.	Value per cord.	Per cent Dist.
	Cords.	\$	\$ c.		Cords.	\$	\$ c.	
Total, all Provinces.								
Production.....	2,196,884	14,770,358	6 72	100.0	2,355,550	15,590,330	6 62	100.0
Manufacture.....	1,224,376	8,089,868	6 60	55.7	1,405,836	9,426,217	6 71	59.7
Export.....	972,508	6,680,490	6 87	44.3	949,714	6,164,113	6 49	40.3
Quebec—								
Production.....	1,323,917	8,882,899	6 71	100.0	1,322,231	8,338,525	6 31	100.0
Manufacture.....	636,496	4,148,405	6 52	48.1	697,962	4,227,033	6 06	52.8
Export.....	687,421	4,734,494	6 77	51.9	624,269	4,111,492	6 59	47.2
Ontario—								
Production.....	587,494	4,020,510	6 84	100.0	682,866	5,063,618	7 42	100.0
Manufacture.....	447,751	3,172,235	7 08	76.2	480,627	3,806,804	7 92	70.4
Export.....	139,743	848,275	6 07	23.8	202,239	1,256,814	6 21	29.6
New Brunswick—								
Production.....	193,126	1,382,315	7 16	100.0	235,738	1,503,346	6 38	100.0
Manufacture.....	49,339	296,769	6 01	25.5	115,842	732,521	6 32	49.1
Export.....	143,787	1,086,546	7 55	74.5	119,896	770,825	6 43	50.9
British Columbia—								
Production.....	80,013	426,444	5 33	100.0	90,535	550,809	6 08	100.0
Manufacture.....	80,013	426,444	5 33	100.0	90,535	550,809	6 08	100.0
Nova Scotia—								
Production.....	12,334	58,190	4 72	100.0	24,180	124,032	5 13	100.0
Manufacture.....	10,777	46,015	4 27	87.4	20,870	99,050	4 75	86.3
Export.....	1,557	12,175	7 82	12.6	3,310	24,982	7 55	13.7

The diagram above illustrates the rapid growth in Canada of the production of pulpwood and its manufacture into pulp in Canadian mills. In 1908 the quantity exported in the raw state exceeded the quantity manufactured in Canada by 312,119 cords. The proportion of manufactured wood increased steadily until the two were almost equal in 1912, and in 1915 the home consumption exceeded the export by 456,122 cords. The quantity exported has increased by only 19.5 per cent during that period while the quantity consumed in Canadian pulp-mills has increased by 191.2 per cent.

The figures for pulpwood exports in the table above were obtained from the Department of Customs. The total production of pulpwood increased in Canada by 7.2 per cent. The quantity manufactured in Canada increased by 14.8 per cent, while the quantity exported unmanufactured decreased by 2.3 per cent. Increases in production are to be noted in every province but Quebec; increases in manufacture in every province and increases in export in Ontario and Nova Scotia with decreases in Quebec and New Brunswick.

No pulpwood has been exported from British Columbia since 1913.



## WOOD-PULP.

TABLE 6.—EXPORTS OF WOOD-PULP, 1914 and 1915.

Kinds of Pulp and Countries to which Exported.	1914.				1915.			
	Quantity.	Value.	Average Value per Ton.	Per Cent Dist.	Quantity.	Value.	Average Value per Ton.	Per Cent. Dist.
	Tons.	\$	\$ c.		Tons.	\$	\$ c.	
<b>Wood-pulp exported aggregate.....</b>	<b>424,883</b>	<b>8,865,436</b>	<b>20 87</b>	<b>100.0</b>	<b>364,170</b>	<b>9,279,114</b>	<b>25.48</b>	<b>100.0</b>
Total Mechanical Pulp....	314,485	4,509,260	14 34	74.0	206,701	3,239,599	15 67	56.8
Total Chemical Pulp.....	110,398	4,356,176	39 46	26.0	157,469	6,039,815	38 36	43.2
Total to United States....	295,674	7,008,312	23 70	69.6	318,498	8,357,747	26 24	87.5
Mechanical.....	190,095	2,832,909	14 90		170,804	2,679,274	15 69	
Chemical.....	105,579	4,175,403	39 55		147,694	5,678,473	38 45	
Total to Great Britain....	116,843	1,581,101	13 53	27.5	18,488	324,032	17 53	5.1
Mechanical.....	116,820	1,580,301	13 53		17,537	287,255	16 38	
Chemical.....	23	800	34 78		951	36,777	38 67	
Total to France.....	7,612	97,475	12 81	1.8	18,335	272,700	14 87	5.0
Mechanical.....	7,569	906,50	12 69		18,335	272,700	14 87	
Chemical.....	43	1,425	33 14					
Total to Japan.....	4,755	178,548	37 55	1.1	8,666	317,842	36 68	2.4
Chemical.....	4,755	178,548	37 55		8,666	317,842	26 68	
Total to China.....					112	4,243	37 88	*
Chemical.....					112	4,243	37 88	
Total to Australia.....					35	2,094	59 83	*
Chemical.....					35	2,094	59 83	
Total to Cuba.....					25	370	14 80	*
Mechanical.....					25	370	14 80	
Total to New Zealand.....					11	386	35 09	*
Chemical.....					11	386	35 09	

\*Less than one-tenth of 1 per cent.

The export of wood-pulp from Canada has alternately increased and decreased every year from 1909 to 1915. The total in 1915 is a decrease of 14.3 per cent from that of 1914. The United States, France and Japan purchased Canadian pulp in greater quantities than in the previous year, and China, Australia, Cuba and New Zealand were added to the list, but the exports to Great Britain fell off by over ninety-eight thousand tons bringing the total export below that of 1914.

The export of mechanical pulp decreased by 34.3 per cent decreasing to the United States and Great Britain and increasing to France. The export of chemical fibre showed an increase of 42.6 per cent, increasing to the United States, Great Britain and Japan. No chemical pulp was exported to France in 1915.

The average value per ton of all kinds of pulp exported increased by \$4.61 increasing with ground-wood and decreasing with chemical fibre. This large increase was due to the much greater proportion of chemical fibre in the 1915 exports which raised the average value of the whole amount exported.

— MAP SHOWING PULP-MILLS —  
IN  
— CANADA —  
— 1915 —

- ACTIVE MILLS  
○ MILLS NOT OPERATING

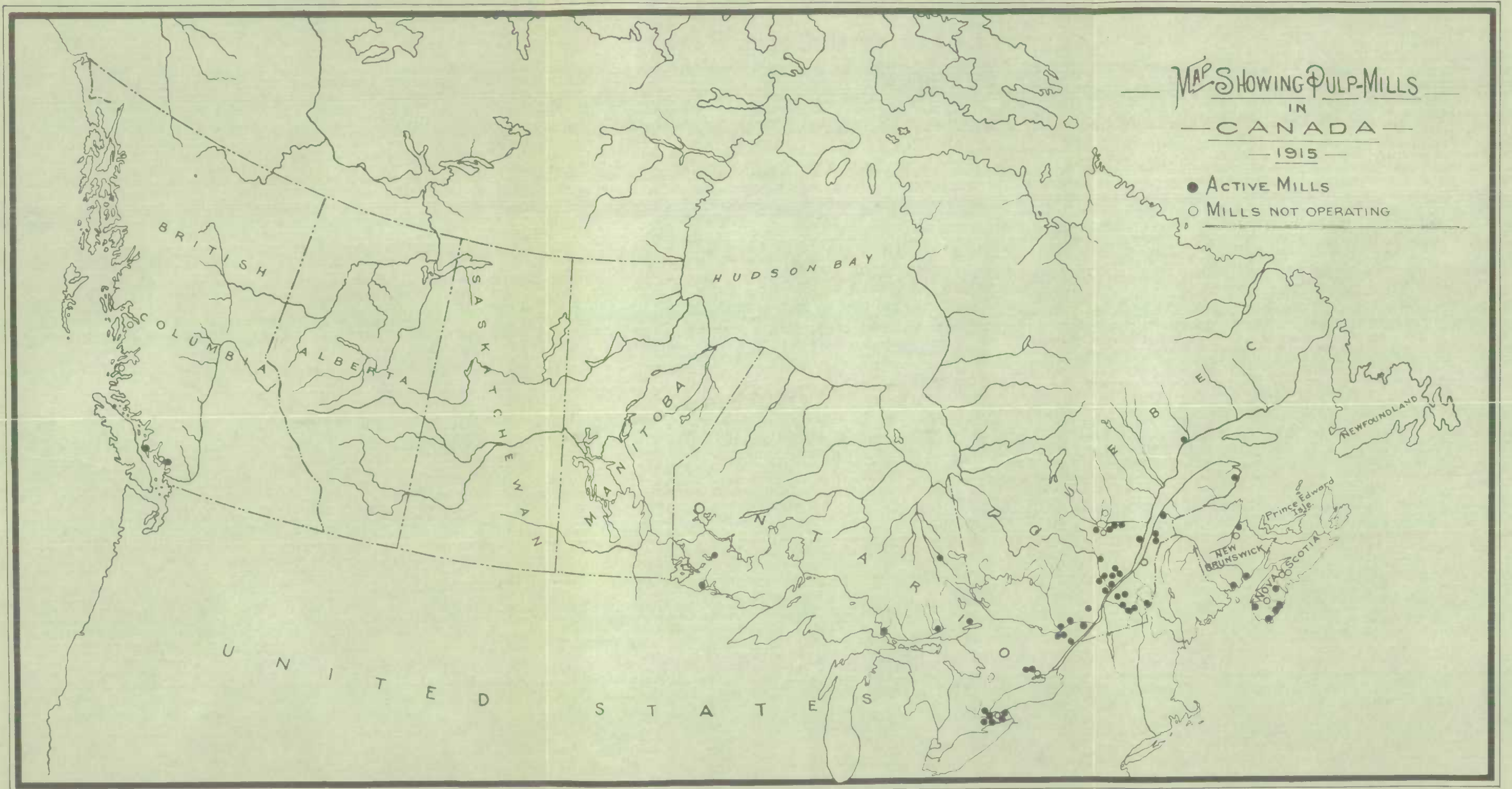


TABLE 7.—IMPORTS OF WOOD-PULP, 1914 AND 1915.

Countries from which imported.	1914.		1915.	
	Value.	Per Cent Distribution.	Value.	Per Cent Distribution.
	\$		\$	
<b>Total Value of Imports.....</b>	<b>424,601</b>	<b>100.0</b>	<b>423,331</b>	<b>100.0</b>
United States.....	216,361	51.0	316,843	74.8
Sweden.....	136,540	32.2	105,743	25.0
Great Britain.....	4,375	1.0	745	0.2
Norway.....	61,254	14.4		
Switzerland.....	5,285	1.2		
Austria-Hungary.....	786	0.2		

The importation of wood-pulp into Canada showed a slight decrease from 1914 to 1915. The quantity purchased from the United States increased while that from Sweden and Great Britain decreased. No pulp was imported from Norway, Switzerland or Austria-Hungary. The importation in 1914 of a small quantity from the latter country was purchased early in the year before the outbreak of the war.

## APPENDIX.

### LIST OF ACTIVE CANADIAN PULP-MILLS.

The following is a list of firms operating pulp-mills in Canada in 1915 to whom the Forestry Branch is indebted for the data on which this bulletin is compiled:—

#### QUEBEC.

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 Sulphite 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 Ouatichouan 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., Point 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.



Lothiniere 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.  
 Price-Porritt Pulp and Paper Co., Rimouski—Ground-wood Pulp.  
 River du Loup Co., Fraserville—Ground-wood Pulp.  
 St. Lawrence Pulp and Lumber Corporation, Chandler (office Chicoutimi)—Sulphite Fibre.  
 St. Maurice Paper Co., Ltd., (formerly Gres Falls Co.)—Ground-wood Pulp.  
 Wayagamack Pulp and Paper Co., Ltd., Three Rivers—Sulphate Fibre.  
 Wilson, J. C., Ltd., St. Jerome—Ground-wood Pulp.

## ONTARIO.

Abitibi Power and Paper Co., Ltd., Iroquois Falls—Ground-wood Pulp and Sulphite Fibre.  
 Beaver Wood Fibre Co., Ltd., Thorold—Ground-wood Pulp.  
 Booth, J. R., Ottawa—Ground-wood Pulp and Sulphite Fibre.  
 Bronson Company, Ottawa—Ground-wood Pulp.  
 Davy Pulp and Paper Co., Ltd., Thorold—Ground-wood Pulp.  
 Dryden Timber and Power Co., Ltd., Dryden, Sulphate Fibre.  
 Foley-Reiger Pulp and Paper Co., Thorold,—Ground-wood Pulp.  
 Fort Frances Pulp and Paper Co., Fort Frances—Ground-wood Pulp.  
 Northumberland Pulp Co., Ltd., Campbellford—Ground-wood Pulp.  
 Ontario Paper Co., Ltd., Thorold—Ground-wood Pulp.  
 Riordon Pulp and Paper Co., Ltd., Hawkesbury and Merritton (office Montreal)—Sulphite fibre.  
 Spanish River Pulp and Paper Mills Ltd., Sturgeon Falls, Espanola, and Sault Ste. Marie (office Sault Ste. Marie)—Ground-wood Pulp and Sulphite Fibre.  
 Thorold Pulp Co., Ltd., Thorold—Ground-wood Pulp.  
 Toronto Paper Manufacturing Co., Ltd., Cornwall—Sulphite Fibre.  
 Trent River Paper Co., Ltd., Frankford—Ground-wood Pulp.

## NOVA SCOTIA.

Campbell Lumber Co., Ltd., Weymouth—Ground-wood Pulp.  
 Clyde River Pulp and Paper Co., Ltd., Clyde River—Ground-wood Pulp.  
 La Have Pulp Co., Ltd., New Germany—(office Bridgewater)—Ground-wood Pulp.  
 Macleod Pulp Co., Ltd., Milton (office Liverpool), Ground-wood pulp.  
 Nova Scotia Wood Pulp and Paper Co., Ltd., Mill Village—Ground-wood Pulp.

## NEW BRUNSWICK.

Bathurst Lumber Co., Ltd., Bathurst—Sulphite Fibre.  
 Dominion Pulp Co., Ltd., Chatham—Sulphite Fibre.  
 Partington, Edward, Pulp and Paper Co., Ltd., St. John—Sulphite Fibre.  
 St. George Pulp and Paper Co., Ltd., St. George—Ground-wood Pulp.

## BRITISH COLUMBIA.

British Columbia Sulphite Fibre Co., Ltd., Mill Creek, Howe Sound (office Vancouver)—Sulphite Fibre.  
 Powell River Co., Ltd., Powell River—Ground-wood Pulp and Sulphite Fibre.