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MINERAL OUTPUT REACHED HIGHEST VALUE IN 1917

Total Value \$189,646,534 an Increase of Over 139 Per Cent Since 1906

REVISED FIGURES

The total value of the output of the mines of Canada in 1917 reaches the sum of \$189,646,534, as shown in the annual report of the Department of Mines, on the Mineral Production of Canada, recently issued.

Compared with the total value of the production in 1916, which was \$177,201,534, that of 1917 shows an increase of 7.02 per cent and in point of value represents the largest output on record, as stated in the report.

PRICE AND PRODUCTION INCREASES.

"The total value of the metallic production in 1917, was \$106,455,147 as against a value of \$106,319,365 in 1916, and \$75,814,841 in 1915. While the net change in 1917 was a small increase amounting to only one-tenth of one per cent, it will be noted that decreases in the production of fine metals aggregating over \$7,170,000 were offset by increases in seven metals aggregating over \$7,300,000," the report continues.

"The total value of the production of non-metallic products in 1917 was \$83,191,674, as against \$70,822,169 in 1916; \$61,294,330 in 1915, and \$79,273,461 in 1914. Thus while the value of non-metallic products in 1916 was less than the value in 1912 and 1913, that of 1917 was greater than any previous year. Much of this increase is to be credited to higher prices realized for most of these products though on the other hand important increases have been made in the quantities of certain war minerals produced including asbestos, chromite, graphite and pyrites.

LARGE INCREASES PER CAPITA.

"The total value of the production in 1886 was \$10,221,255, or about \$2.23 per capita. In ten years the value had increased to \$22,474,256, or \$4.38 per

MINISTER OF TRADE AND COMMERCE GIVES REASONS FOR NEW WHEAT BOARD

SOME ARTICLES IN PRESENT NUMBER.

Telegraphic Reports on Dominion Crops..... Page 7.

By-products Wasted in Direct Use of Coal as Fuel. Page 6.

Quebec's Fur and Game Control..... Page 5.

capita more than twice the total in 1886, and nearly twice the production per capita. The next ten years witnessed an increase to \$79,286,697 in 1906, or \$12.81 per capita, about three and a half times the production in 1886. From 1906 to 1917, the total production has shown an increase of over 139 per cent.

EXPORTS AND IMPORTS.

A very large portion of the mineral production of Canada is exported for consumption or refining outside of the Dominion. On the other hand, considerable quantities of mine products chiefly those which have been refined or subjected to partial treatment, or in the form of manufactured goods ready for consumption, are imported.

"The total value of the exports of products of the mine including direct mine products and manufactures thereof in 1917 was \$176,805,818, compared with \$171,178,583 in 1916. This value includes for 1917 mine products to the value of \$77,069,667, and manufactures valued at \$90,736,151, as against mine products valued at \$80,755,461 and manufactures valued at \$90,423,122 in 1916.

"Practically the whole of the Canadian production of copper, nickel and silver is exported, also a very large proportion of the production of gold, asbestos, and mica. There are as well, considerable exports of coal. These products alone contribute about 90 per cent of the value of the mine products exported. Manufactured goods products exported consist chiefly of iron and steel goods, agricultural implements, aluminium, calcium carbide, acetate of lime fertilizers and coke.

Recommendations of Council of Agriculture Adopted to Safeguard Interests of Wheat Trading Declares Official Statement

SYSTEM OF OPERATION IS EXPLAINED BY MINISTER

The following statement relative to the formation and system of operation of the new Canadian Wheat Board was issued this week by Sir George Foster, Minister of Trade and Commerce:

"About the middle of July the Canadian Council of Agriculture, in session at Winnipeg, embodied the results of its deliberations in a memorandum which afterwards came into the hands of the Government and which, in the principle it advocates and in the methods for carrying out that principle, is almost identical with the Government's plan itself.

REASONS FOR CHANGE.

"The Council gave the reasons why a change from normal methods was rendered necessary under present conditions, as follows:

"1. That the entire importations of wheat into European countries is under Government control.

"2. That the United States, Canada's principal competitor in the sale of wheat, has created a highly organized and well financed corporation under Government direction to dispose of its exportable surplus.

"3. That it is imperative in the national interest that Canada should secure the maximum return for its wheat crop.

"4. That the opening of the market for unrestricted trade in wheat on the Canadian Grain Exchanges, as it is in immediate prospect, would promote speculative rather than legitimate trade.

"5. That because the true function of grain exchanges can only be per-

formed when international operations are possible in an unrestricted way, they would entirely fail to provide means for disposing successfully of the wheat crop.

"6. That trading under such conditions, with the attendant risks, would provide a market at country points for the farmers' wheat only at prices much below its real value and at times would be found to result in there being no country market at all.

FOLLOWED EXPERT ADVICE.

"Therefore," the memorandum concludes, "The Canadian Council of Agriculture is strongly opposed to the opening of the Canadian markets for unrestricted trade in wheat and would reiterate its recommendation of August, 1918, that the Government of Canada create, without delay, a body similar to the United States Grain Corporation, with the financial accommodation adequate to its operations."

"This is precisely what the Government has done and in doing it has followed step by step and line by line the detailed recommendations of the grain committee of the Canadian Council of Agriculture.

"The main difference is that instead of creating a corporation and putting \$200,000,000 at its back, the Government has appointed a Canadian Wheat Board and has put the necessary financial accommodation at its disposal. In no other essential point is the system organized by the Government at variance with the recommendation of the Canadian Council of Agriculture.

"As a sample of outside opinion, the Winnipeg Free Press on July 30, before the Government's plan was known advocated the following:—

"The pooling of interests, so that our exportable surplus may be handled by a single agency and sold in whatever market available, for the best price obtainable is practically the only practicable solution. If we are to have a unified control of our wheat export, it is evident that the Government will have to play a leading part in the combination. It alone can command the necessary financial support or secure the required tonnage."

"An appreciable difference between the two plans is that the Council of Agriculture advocated the setting of a fixed minimum price, whereas the Government plan sets no minimum price, but guarantees an initial payment on the sale of the wheat and the distribution of the total proceeds after the marketing of the entire stock. In both plans the sale of the products of wheat as well as of wheat itself, was put under the control of the central board."

STATEMENT OF IMMIGRATION TO CANADA DURING APRIL, MAY AND JUNE, 1919, COMPARED WITH THAT OF THE CORRESPONDING MONTHS OF 1918.

	1918-19.				1919-20.				Percentages of Increase.
	British.	From U. S. A.	Other Countries.	Totals.	British.	From U. S. A.	Other Countries.	Totals.	
April.....	430	6,310	383	7,123	3,244	7,524	500	11,268	58%
May.....	269	4,554	438	5,261	4,534	5,198	465	10,197	94%
June.....	157	3,277	461	3,895	2,601	4,707	505	7,813	101%
Totals...	856	14,141	1,282	16,279	10,379	17,429	1,470	29,278	80%

AUSTRALIA'S SALES OF WHEAT TO BRITAIN

During War Period Valued at Over 30,000,000 Pounds

According to a statement made before the Australian Parliament by the Acting Prime Minister for the Commonwealth on June 26, the amount of money involved in the sales of Australian wheat to the British Government during the war period was £30,333,000, the quantities concerned being 50,000 tons and 3,000,000 tons. The value of the wheat delivered to the British Government, it was also stated, was £24,657,000, and the amount advanced over and above the value of the wheat delivered was £5,676,000. It was further stated that the average cost per ton of Australian wheat landed in Great Britain during the war could not be given. Large f.o.b. sales had been made to the British Wheat Commission, whose expenses in removing the wheat to Great Britain was not known. No sales had been made conditionally upon Australia sharing in any ultimate profits made by the British Government. The difference between the Australian f.o.b. price and the English price was made up mainly in freight. Comparatively small factors were exchange, insurance and commission.

Since this statement was made a further sale of 1,000,000 tons of wheat to the British Government is reported, the price being 5s. 6d. (\$1.33) per bushel f.o.b. Australian ports. An option has also been secured by the British authorities over a further 500,000 tons at the same price, the option being declarable in September next. With the grain involved in the option the aggregate quantity of wheat taken will be in the close vicinity of 168,000,000 bushels or more than one-third of the wheat "pooled" in the Commonwealth in the four seasons during which the Government has controlled the market in Australia.—*Trade and Commerce Bulletin.*

Winter Stores for Bees.

In the experiments with bees at the Experimental Farms, it was early recognized that the nature of the winter stores is an important factor in successful wintering, and the experiments have confirmed this. Experiments at the Central Experimental Farm indicate that clover honey (alsike and white clover) makes reliable stores for wintering, but poor results have followed the use of stores that granulate hard during the winter. A colony wintered on dandelion honey came out in spring very weak; the honey had granulated hard and the bees had uncapped it but could use very little of it. In some years a mixed honey that comes largely from clover, sweet clover, and other plants, granulates hard with the same result and causes heavy loss. Buckwheat honey has been found wholesome, but some of the other honeys gathered in the fall have been found unwholesome, especially in marshy places in Nova Scotia, and have caused dysentery and death. In one season in Northern Ontario, the fall honey was not capped over and failed to ripen and soured, causing dysentery and heavy loss. Honey containing juices collected by the bees from over-ripe fruit killed a colony before spring, so also did cane syrup used as an exclusive food for wintering. Syrup made from refined sugar, two parts of sugar to one of water, fed to the bees in the early fall, has given fairly good results as an exclusive winter food, and has been found to be the best practical corrective for stores that are slightly unwholesome. Year after year at the Central Farm, colonies on natural stores that have been fed liberally with this syrup come out stronger in spring than those that have wintered on the natural stores alone. Syrup made from raw cane sugar has given less satisfactory results than that made from refined sugar.

War Savings Stamps pay 4½% compounded half-yearly.

CANADA'S TRADE WITH AUSTRALIA INCREASES

Despite the general decrease in imports from other countries during 1917-18, trade with Australia in goods of Canadian origin was not only well maintained but increased by £258,977 or \$1,258,629, and attained a higher level than in any preceding year, says a report from Melbourne by Acting Trade Commissioner C. Hartlett. This is particularly encouraging in view of the difficulty experienced by Canadian manufacturers in procuring tonnage from both the eastern and western seaboard, which is known to have had a retarding effect on an otherwise much larger volume of business.

During the past year or two the Australian merchant has made no secret of his desire to trade in future more with his own kindred, which would appear to be reciprocated by his Canadian brother in also purchasing more largely of Australian products than at any time in the past. Eliminating exports of gold to the value of £6,000,000 in 1916-17, Australian exports to Canada in 1917-18 were as large again in comparison with that year and also reached a record level in the trade between the two countries.

Figures in relation to Australian imports of goods of Canadian origin, and the Australian exports to Canada, in recent years are as follows:

	Imports from Canada.	Exports to Canada.	Total Trade.
1912..	£ 977,075	£ 161,595	£1,138,670
1913..	964,826	169,193	1,134,019
1914-15..	1,235,452	388,562	1,624,014
1915-16..	1,527,023	721,448	2,248,471
1916-17..	1,408,091	6,392,579	7,800,670
1917-18..	1,667,068	785,130	2,452,198

The direct Australian exports to Canada are chiefly shipped by the Canadian-Australasian mail steamers—under contract with the Canadian Government—which load at Sydney for Victoria and Vancouver. Intermittent cargo steamers are also engaged in the Pacific coast trade. There are no direct shipments from Australia to eastern Canadian ports. In the figures for 1916-17 are gold and specie to the value of £6,000,000, thus making the exports of Australian merchandise to Canada £392,579 during that year.

ONE ARMED MEN PROVE VERY USEFUL

Department of Soldiers' Civil Re-Establishment Has Carried Out Tests

The idea that because a man has lost an arm or part of one, he is, generally speaking, useless for work in any practical line of endeavour, seems to be very prevalent, and is absolutely incorrect, says a report issued by the Department of Soldiers' Civil Re-Establishment.

One-armed men for years are and have been successful farmers, and tests carried out by the Vocational Branch of the Department of Soldiers' Civil Re-Establishment have demonstrated that a man with only a four inch stump on his right arm fitted with a working arm and suitable appliance, was able to do most of the jobs about a farm, hoeing, digging with both spade and shovel, digging post holes, and building wire fences, feeding and taking care of stock, harnessing and driving team, pitching hay, planting and transplanting trees and plants, weighing milk

cans, loading them on the milk wagon, and driving farm tractors. From a series of tests carried out in the Curative Work-shops of the Dominion Orthopaedic Hospital, Toronto, it has been fully demonstrated that arm amputations can do a whole lot of successful work in cabinet making and handling such tools as hammer, saw, chisel, screw driver, and other tools necessary to this kind of work.

One man has developed a passion for carving with a penknife and shows considerable genius and ability, turning out splendid work. In fact it has been amply demonstrated that a man suffering an arm amputation can render himself 100 per cent efficient in many lines of endeavour.

Of course the man himself, his disposition, his tastes and abilities, must be taken into account together with his grit and determination to get on and make a useful citizen of himself once more.

"I have been greatly delighted," said a visiting chaplain of the Department of Soldiers' Civil Re-Establishment, with the general tone and spirit of the returned men in my talks with them about their own and their country's future, and I have made a point of trying to impress upon them the valuable

service they can still render to Canada by the two-fold attitude of stern opposition to every form of injustice and the loyal support of constituted authority."

Through such personal contact, in addition to the national service expressed above, the men of the Chaplain Service Branch of the Department are rendering a valuable amount of social service. By frequent visits to those in homes and hospitals they carry cheer to the discouraged, link them up with the outside world and often prove the intermediary between them and various departments of relief and assistance, and in addition are the means of providing many treats and outings which otherwise might be entirely missed but for the reminder of the chaplain on the job that the men are in need of recreation.

As an instance of splendid co-operation. In one unit no less than five denominations joined together under the guidance of the chaplain to provide music and cheer for the hospital patients.

A new high record in securing employment for ex-soldiers of the Canadian forces has been attained by the Information and Service Branch of the Department of Soldiers' Civil Re-Establishment, 3,250 ex-soldiers having obtained positions during the past week through the activities of officials of this branch.

During the preceding week a total of 3,043 ex-soldiers were placed in employment through the branch which represents the previous high record. To date 50,559 ex-soldiers have secured employment through this branch of the Department of Soldiers' Civil Re-Establishment, which maintains offices in 39 centres for the purposes of placing former members of the Canadian army in touch with employment opportunities.

Representatives of this branch have so far answered 263,229 inquiries on various subjects of immediate interest to ex-soldiers.

Warehouse at Oshawa.

Sealed tenders addressed to the undersigned, and endorsed "Tender for Examining Warehouse, Oshawa, Ont.," will be received until 12 o'clock noon, Friday, August 22, 1919, for the construction of an examining warehouse at Oshawa, Ont.

Plans and specification can be seen and forms of tender obtained at the office of the Chief Architect, Department of Public Works, Ottawa, the Superintendent of Dominion Buildings, Postal Station "F," Toronto, and the Caretaker of the Public Building at Oshawa, Ont.

Tenders will not be considered unless made on the forms supplied by the Department and in accordance with the conditions set forth therein.

Each tender must be accompanied by an accepted cheque on a chartered bank payable to the order of the Minister of Public Works, equal to 10 p.c. of the amount of the tender. War Loan Bonds of the Dominion will also be accepted as security, or war bonds and cheques, if required to make up an odd amount.

By order,

R. C. DESROCHERS,
Secretary.

Department of Public Works,
Ottawa, August 9, 1919.

TOTAL EXPORTS OF BUTTER AND CHEESE

XI. Total Exports of Canadian Butter and Cheese, by Quantities and Values, 1901-1918.

Year.	Butter.		Cheese.		Year.	Butter.		Cheese.	
	Lb.	\$	Lb.	\$		Lb.	\$	Lb.	\$
1901.....	16,335,528	3,295,663	195,926,397	20,696,951	1910.....	4,615,380	1,010,274	180,859,886	21,607,692
1902.....	27,855,978	5,660,541	200,946,401	19,686,291	1911.....	3,142,682	744,288	181,895,724	20,739,507
1903.....	34,128,944	6,954,618	229,099,925	24,712,943	1912.....	8,844,402	2,077,916	163,450,684	20,888,818
1904.....	24,568,001	4,724,155	233,980,716	24,184,566	1913.....	828,323	223,578	155,216,392	20,697,144
1905.....	31,764,303	5,930,379	215,733,259	20,300,500	1914.....	1,228,753	309,046	144,478,346	18,868,785
1906.....	34,031,525	7,075,539	215,834,543	24,433,169	1915.....	2,724,913	639,625	137,601,661	19,213,561
1907.....	18,078,508	4,011,609	178,141,567	22,006,584	1916.....	3,441,183	1,018,769	168,961,583	26,690,500
1908.....	4,786,954	1,068,703	189,710,463	22,887,237	1917.....	7,990,435	2,491,992	180,733,426	36,721,136
1909.....	6,326,355	1,521,436	164,907,139	20,384,666	1918.....	4,926,154	2,000,467	169,530,753	36,602,504

¹Nine months.

PUBLIC URGED TO SEEK FIRST AID TRAINING

*If Knowledge of How to Give
First Aid to Injured More
Widely Extended Many
Lives Would be Saved*

INSTRUCTION AVAILABLE

As all human contrivances lack perfection, we must expect that humanity must ever be exposed to the accidents incident to industry. It is proper we should emphasize the importance of "safety first," but the fool is ever present with us, and, as a consequence, accidents will occur even in well regulated factories.

There were 1,222 fatal industrial accidents in the Dominion during the year 1918, although the figures are stated to be incomplete. The highest percentages occurred in connection with the following industries:—

	Deaths.	Per cent of total.
Mining, smelting and quarrying	263	21.5
Steam railway services	255	20.9
Lumbering operations	155	12.7
Metals, machinery and conveyances	122	10.0

The number reported under the head of agriculture was 36, or 2.9 per cent of the total, and the causes were as follows: animals, 5; run over or caught between cars, 2; falls of persons, 9; lightning, 1; machinery, 11; objects falling, 5; objects flying, 1; vehicles, motor-driven, 2. This last figure would indicate either a greater care on the part of motorists in rural districts or a better familiarity of the agriculturists' horses with automobiles.

Altogether, there were only 3 deaths reported as caused by hand tools, 2 from exposure to cold or frost bite, 3 from heat prostration, 1 from lightning, 5 from asphyxiation and 8 from suffocation.

VALUE OF FIRST AID.

There were two deaths from animal-drawn as compared with thirteen from motor-driven vehicles. The deaths by drowning among our industrial population were 70, of which no less than 28, or 40 per cent, were lumbermen, and only 5 fishermen.

Attention should also be drawn to the fact that 18 deaths were attributed to blood-poisoning, distributed as follows:—

Lumbering	3
Mines, smelters and quarries	1
Metals and machinery	2
Foods, tobacco and liquor	2
Chemicals and explosives	3
Leather	1
Steam railway service	4
Miscellaneous	2

Total 18

A study of this interesting report emphasizes the great necessity for the observance of care on the part of all, or the policy of "safety first," as stated in Conservation of Life, issued by the Commission of Conservation.

At the same time we would urge upon the public at large, both men and women, to seek instruction in "first aid" to those who are either injured or sick. It is safe to say that at least 10 per cent of the 1,222 lives lost during 1918, or 125 lives, could have been saved had those near been possessed of knowledge in "first aid." All employers of labour should afford the opportunity to their employees to qualify in this important subject. This can be done through the St. John Ambulance Association which, up to the present time, has granted certificates to no less than 80,000 persons in Canada, continues the article.

THREE YEARS OF CHEESEMAKING IN CANADIAN DAIRY FACTORIES

The table below is from the report on Dairy Factories, issued by the Dominion Bureau of Statistics as a unit in the Census of Industry series and gives the Production and Value of Factory Cheese by Provinces, 1915, 1916 and 1917.

CHEESE FACTORIES.

Province.	1915.	1916.	1917.	1915.	1916.	1917.
	lb.	lb.	lb.	\$	\$	\$
Prince Edward Island	2,260,000	2,121,736	1,599,885	327,700	409,495	333,723
Nova Scotia	125,580	94,727	67,497	18,837	17,051	14,269
New Brunswick	1,086,413	1,067,068	1,188,296	156,660	189,618	245,629
Quebec	34,932,111	38,059,681	40,024,037	4,898,358	6,873,544	8,361,081
Ontario	100,676,000	101,535,235	114,319,617	15,124,100	18,784,018	24,318,420
Manitoba	726,725	880,728	1,003,646	109,008	158,931	199,036
Alberta	90,680	135,435	104,649	14,691	24,728	22,692
British Columbia	—	—	35,000	—	—	10,655
Canada	189,897,519	143,894,610	158,342,627	20,649,354	26,457,385	33,505,505

COMBINED FACTORIES.

Prince Edward Island	—	—	635,100	—	—	132,594
Nova Scotia	—	—	—	—	—	—
New Brunswick	79,238	118,596	55,810	11,426	21,075	12,016
Quebec	19,285,002	23,847,069	27,810,980	2,673,333	4,371,560	5,811,192
Ontario	24,325,136	24,480,635	6,853,469	3,707,313	4,528,917	1,453,524
Manitoba	—	—	—	—	—	—
Alberta	290,942	609,687	1,170,256	53,750	129,725	257,493
British Columbia	10,000	18,000	36,094	2,000	3,960	8,299
Canada	43,990,318	49,073,987	36,561,709	6,447,822	9,055,237	7,675,118

A.L. FACTORIES.

Prince Edward Island	2,260,000	2,121,736	2,234,985	327,700	409,495	466,317
Nova Scotia	125,580	94,727	67,497	18,837	17,051	14,269
New Brunswick	1,165,651	1,185,664	1,244,106	168,086	210,693	257,645
Quebec	54,217,113	61,906,750	67,835,017	7,571,691	11,245,104	14,172,273
Ontario	125,001,136	126,015,870	121,173,086	18,831,413	23,312,935	25,771,944
Manitoba	726,725	880,728	1,003,646	109,008	158,931	199,036
Alberta	381,632	745,122	1,274,905	68,441	154,453	280,187
British Columbia	10,000	18,000	71,094	2,000	3,960	18,954
Canada	183,887,837	192,968,597	194,904,336	27,097,176	35,512,622	41,180,623

To the credit of the railways of Canada it may be stated that they are most active supporters of the St. John Ambulance Association; also many of our large industrial and commercial corporations, as well as the police and fire brigades, are now in line as "first aiders."

The prompt rendering of first aid at the time of an accident prevents loss of time, of health, of limb, and of life. The obtaining of the necessary knowledge simply requires attendance at five lectures and demonstrations and it is worth any one's while to obtain that knowledge, that when accidents occur he, or she, may render the aid essential for the relief of his fellow worker and before the arrival of medical assistance.

TOWN PLANNING IN ST. JOHN, N.B.

The St. John Town Planning Scheme, dealing with over 20,000 acres, has been approved by the Councils of the city and the county municipalities. This is an important achievement having regard to the novelty of many of the provisions of the scheme and the somewhat drastic changes which they introduced in local procedure. The scheme has been prepared by the City Planning Commission in consultation with the Town Planning Branch of the Commission of Conservation. The Housing Act of New Brunswick is now on the statute books and a housing scheme has been prepared by the province and approved by the Federal Government, according to Conservation of Life, issued by the Commission of Conservation.

Wharf at Point Pizeau.

Sealed tenders addressed to the undersigned, and endorsed "Tender for repairs to wharf at Pointe Pizeau, Que." will be received at this office

until 12 o'clock noon, Thursday, August 28, 1919 for repairs to the wharf at Pointe Pizeau (Sillery), County of Quebec, Que.

Plans and form of contract can be seen and specification and forms of tender obtained at this Department, at the offices of the District Engineers, Post Office Building, Quebec; Shaughnessy Building, Montreal, Que.; and at the Post Office, Sillery, Que.

Tenders will not be considered unless made on printed forms supplied by the Department and in accordance with conditions contained therein.

Each tender must be accompanied by an accepted cheque on a chartered bank payable to the order of the Minister of Public Works, equal to 10 p.c. of the amount of the tender. War Loan Bonds of the Dominion will also be accepted as security, or War Bonds and cheques if required to make up an odd amount.

NOTE.—Blue prints can be obtained at this Department by depositing an accepted bank cheque for the sum of \$10, payable to the order of the Minister of Public Works, which will be returned if the intending bidder submits a regular bid.

By order,

R. C. DESROCHERS,
Secretary.

Department of Public Works,
Ottawa, August 5, 1919.

Wharf at Boisdale, N.S.

Sealed tenders addressed to the undersigned, and endorsed "Tender for Wharf at Boisdale, N.S.," will be received at this office until 12 o'clock noon, Wednesday, September 3, 1919, for the construction of a wharf at Boisdale, Cape Breton County, N.S.

Plans and forms of contract can be seen and specification and forms of tender obtained at this Department, at the office of the District Engineer at North Sydney, N.S., and at the Post Office, Boisdale, N.S.

Tenders will not be considered unless made on printed forms supplied by the Department and in accordance with conditions contained therein.

Each tender must be accompanied by an accepted cheque on a chartered bank payable to the order of the Minister of Public Works, equal to 10 p.c. of the amount of the tender. War Loan Bonds of the Dominion will also be accepted as security, or War Bonds and cheque if required to make up an odd amount.

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By order,

R. C. DESROCHERS,
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Department of Public Works,
Ottawa, August 5, 1919.

Cattle Trade Very Active.

There has been a considerable increase in the value of the live stock exported from the Dominion, as shown in the report of the trade of Canada for the twelve months ending June, 1917, 1918 and 1919, issued by the Dominion Bureau of Statistics. In 1917, the value of living animals exported from this country was \$13,547,239; in 1918 it was \$19,633,068, and for the twelve months ending June, 1919, it was \$37,845,935.

Railways and Canals Revenue.

The revenue from the Government-owned railways and the canals during the fiscal year ended March 31, 1918, amounted to the sum of \$27,695,825.09, according to the annual report of the Department of Railways and Canals. The revenue from the railways was \$27,240,956.87, and that from the canals amounted to \$414,868.22.

LATENT NATURAL RESOURCES OF THE DOMINION IMMENSE

*University of Toronto Profes-
sor Urges Developments
Before Commons Committee
on Scientific Research*

MANY BY-PRODUCTS

That Canada possesses natural resources, which, if rightly developed would make her one of the most important of industrial countries, is well known to scientists. All that is required is that these should be developed. Addressing the Special Committee of the Canadian House of Commons on Scientific Research Prof. J. C. McLennan of the University of Toronto, said on this subject:—

"Perhaps I may be permitted to refer briefly to some of the consequences of the development of hydro-electric powers in Canada. We have, as you know, already developed upwards of 2,305,310 h.p. out of a possible 19,000,000 h.p. in Canada. Judging from the reports to hand it will not be long before an additional 1,000,000 h.p. will be available.

"In general, when a power has been developed in the past, the supply of energy rendered available was far in excess of the requirements of the local community for light and mechanical power in manufacturing industries. This state of affairs has led to the erection of extensive and important electro-chemical works which need large blocks of cheap power to meet their technical requirements. Examples of this development are found in the Niagara peninsula, and in the developments on the St. Maurice river in Quebec.

"Among the great works in the Niagara district a number are worthy of special mention. The American Cyanamide Company, which also has extensive works at Muscle Shoals, Alabama, has a capacity in its Canadian plant for producing about 64,000 tons of cyanamide per annum. Among its products, in addition to cyanamide, are ammonia, nitric acid, ammonium, nitrates, cyanides and argon. It has recently erected works on the New Jersey side of New York harbour for the manufacture of ammonium phosphate, sulphate of ammonia and ammoniacal liquor. The supply of cyanamide for the New York works hitherto has been drawn largely from Canadian works, but the supply will now be supplemental by the product made in Alabama. The phosphate rock used in making ammonium phosphate, I may add, comes from a mine the company recently acquired and is operating in Florida. There is also the Canadian Alexite Company, whose product is carborundum, and the Acheson Graphite Company, which supplies large graphite electrodes for electric furnaces.

"The Rirdon Pulp and Paper Company has developed a plant for manufacturing calcium chloride from lime and salt for bleaching purposes, and as a by-product it will soon be in a position to produce caustic soda to the extent of about 35 tons per month.

"In the River St. Maurice district we have at Grand Mere Falls, the Laurentide Pulp Mills, producing about 250 tons of paper a day. At Shawinigan the Northern Aluminium Company and the Belgo-Canadian Pulp and Paper Company have very extensive works. The Shawinigan Electric Metals Company is a product of the war, and produces large quantities of magnesium of a guaranteed minimum purity of 99.5 per cent.

"The Canadian Carbide Company and the Canadian Electrode Company have large plants as well; but of all the developments which have taken place at Shawinigan the activities of the Canadian Electro Products Company, are, from a scientific point of view,

probably the most interesting. This company, under the direction of Mr. H. W. Matheson, has developed a process for making acetic acid, acetone, and allied chemicals synthetically from acetylene gas. Its present plant, which is the largest of its kind in the world, was commenced in May, 1916, and the first acetone was turned out in December of the same year. The Complete plant consists of twelve buildings, representing an investment of approximately \$2,000,000.

PERCENTAGE OF HELIUM.

"In 1903 it was observed that many of the natural gases of Canada contained a small percentage of helium. In the spring of 1916, it was found that the largest supply of natural gas in Canada, namely, that located at Bow Island, Alberta, contained a little over 0.36 per cent of helium. This is a comparatively small, and apparently insignificant amount, and yet I may tell you that this wonderful gas was so rare and so costly, that at pre-war prices, the value of the supply of it which escaped into the air from the furnaces and stoves of Calgary and other houses on the pipe line, was \$50,000,000 per day. By the developments which have taken place, during the past two years, the cost of producing the gas in a pure state, has been reduced roughly 100,000 times. Owing to the advance it became possible to use this gas in place of hydrogen in lighter than air aircraft. With the buildings and plants projected by the Admiralty and the authorities of the United States, we should, had the war continued, been able, by June of this year, to produce about 2,000,000 cubic feet of this gas per month for use in our balloons at the front. This would have meant the creation of a great industry in Canada.

"Although it will not pay to use the gas for balloons under peace activities, every effort is being made to develop technical uses for this gas, and it is possible that it may yet be required in large quantities for the production of gas-filled lamps, and other articles of commerce.

"In a Technical Research Institute, or in institutions allied to it, such technical possibilities can be worked out. Will you encourage your scientific men to take part in this development?

"Perhaps you will permit me to refer to one other possible line of development during the search for helium. It was found that practically all the natural gases issuing from wells situated in the Fraser Valley, British Columbia, or from those on the islands of the Gulf of Georgia, consisted of pure nitrogen. Those gases were, of course, non-inflammable, and were considered on that account, by those having to do with them, of no particular value.

NITROGEN FROM WELLS.

"In the production of cyanamid and cyanides you know that vast plants are required to extract the nitrogen from the air. If it should turn out that the supply of nitrogen which can be drawn from the wells in the Fraser Valley is considerable and permanent, you have in this resource a basis for the production of cyanides and fertilizers on the Pacific Coast. At such places as Slave Lake you have large blocks of electric power either developed or developable. In the neighbourhood you have large deposits of crystalline marble and coal as well. The condition are, therefore, favourable. Of course the land in the Fraser Valley is exceedingly fertile now. It will not, however, always remain so and artificial fertilizers will be required in large amounts. In the meantime the lands in the Sacramento Valley and those in the northwestern portions of the United States, afford a market for any supplies that may become available. China, too, use large amounts of artificially-made fertilizers.

"Here then are wealth producing industries that can possibly be developed with great profit to our country.

"Many more possibilities might be referred to, but from what has been stated you will clearly see enough that scientific knowledge, when backed by imagination and supported financially by our people, should be of the greatest service in the upbuilding of our industrial life."

Buy Thrift Stamps for children.

CANADA HAS 26,958,411 CUBIC FEET COLD STORAGE

About 190 Cold Storage Warehouses in Dominion all Equipped with Mechanical Refrigeration Except Few

The following, from a summary of an address on the subject of Cold Storage Facilities in Canada, delivered by Mr. J. A. Ruddick, Dairy and Cold Storage Commissioner, Department of Agriculture, before the Select Standing Committee of the House of Commons on Agriculture and Colonization, is taken from the August issue of the Agricultural Gazette of Canada, published monthly by the Department of Agriculture:—

There should be ample storage facilities for the handling of dairy produce and meats in the localities where these articles are produced. The abattoirs of the country provide their own facilities for the chilling or freezing of meats as the animals are slaughtered. The largest cheese factories and creameries are also fairly well equipped in this respect. There is also required good refrigeration car services with a sufficient number of cars of the right type to carry the products in proper condition. For the export meat trade there is also required terminal warehouses where refrigerator cars may discharge their freight close to the ocean berths. We also require suitable refrigerator space on the steamers if our overseas trade in perishable food products is to be fully developed.

COLD STORAGE WAREHOUSES.

There are about 190 cold storage warehouses in Canada. All of these warehouses are equipped with mechanical refrigeration, except a few very small ones in which the crushed ice and salt system of refrigeration is used. Not including the smaller plants used in connection with retail shops, we have in Canada a total of 26,958,411 cubic feet of refrigerator space. There are also quite a large number of smaller private storages running from about 2,000 cubic feet to as high as 20,000 cubic feet capacity. These provide about 758,000 cubic feet of space making a total of 27,717,211 cubic feet available for cold storage of meat, fish, dairy, and other products.

REFRIGERATOR CARS.

The several railways of Canada have a combined total of 4,459 refrigerator cars, made up as follows:

Railways.	Ordinary cars.	Brine tank cars.
Canadian Pacific ..	504	1,931
Grand Trunk ..	965	200
Grand Trunk Pacific ..	39	195
Canadian National ..	*625	
Total ..		4,459

*Kind not specified.

The Canadian Pacific Railway has also 100 cars equipped for use on express trains.

TERMINAL WAREHOUSES.

The cold storage warehouses at Montreal, Que., and other places fill the requirements to some extent. They meet the needs of the dairy produce trade fairly well except in the matter of economical handling. A large cold storage warehouse now under construction by the Harbour Commissioners at Montreal will be situated on the docks, will have track connections with all the railways, and will have at least one steamer berth where goods can be loaded direct. The location is very central, being close to present produce district. Provision will be made for unloading directly from the cars into the warehouse and from the warehouse direct to the steamers. This warehouse will have a total capacity of 2,000,000 cubic feet and will cost in the neighbourhood of \$1,500,000.

OCEAN REFRIGERATION.

Until overseas transportation becomes normal again there may be some shortage in refrigerated space for trans-

Atlantic shipments. Before the war there were forty-five steamers with refrigerated space sailing from Canadian ports to the United Kingdom and four to South Africa, with a total refrigerated capacity of 1,072,476 cubic feet. There were also eighteen steamers equipped with 800,000 cubic feet of cool air space suitable for cheese, bacon and apples. For the current season the indications are that there will be only twenty steamers as against forty-five going to the United Kingdom and one against four to South Africa, having a total refrigerated capacity of 375,212 cubic feet of space which is less than one-half of what was available before the war. Ten steamers are equipped with cooled air compartments, with a total of 159,800 cubic feet capacity as against 800,000 cubic feet before the war. The shortage is accounted for by the sinkings by submarines and the present use of boats carrying large accumulations of meats and dairy produce from Australia and New Zealand.

The Department of Agriculture, through the Dairy and Cold Storage Branch, undertakes the inspection of refrigerated cargo on ocean steamships sailing from Canada. This service has been in operation since 1900. A number of inspectors are stationed at Montreal to watch ships being loaded with perishable products chiefly of those kinds that are carried in refrigerated space. Thermographs are placed in different parts of the ship where perishable products are carried. These instruments automatically record the temperature continuously during the voyage. When a ship arrives at a United Kingdom port another inspector secures the charts and thermographs and returns them to Montreal. Copies of the charts are made available to any person interested in the shipments. The Dairy and Cold Storage Branch has records covering practically every shipment that has been made for the last twenty years.

MOVEMENT AGAINST PUBLIC HEALTH LAWS

Example Given of Propaganda Meant to Frustrate Health Regulations

Health authorities and workers in Canada should be alive to the danger of insidious propaganda now being carried on in the name of religion to emasculate the entire public health programme. The movement is not so in evidence in the Dominion as in other countries, but it is insidiously pursuing its nefarious and deadly work.

The most recent manifestation of this "Cult" was the introduction into the State Legislature of Minnesota of a Bill entitled "To Prohibit Compulsory Medical Examination and Treatment—Except in Certain Cases, Without their Consent and, in Case of Minors, Without the Consent of their Parents or Guardians, and Prescribing Remedies Against, and Penalties for, Violation thereof."

The Bill failed of passage, but the public are cautioned against a movement of this kind by which the physical examination of cases of communicable disease, even in epidemic form, or the powerful agent of quarantine itself, would be prohibited and penalized.

Under the sacred name of religion many prejudices have taken shelter and questionable things have been done in the past. This attempt to frustrate the safe-guarding of public health is the most modern form of this hypocrisy, as stated in an article in the current issue of Conservation of Life, an official publication of the Commission of Conservation.

QUEBEC'S SYSTEM OF FUR AND GAME CONTROL

Special Measures Adopted to Regulate and Conserve Wild Life Resources in Quebec Have Been Found to Work Well; Fur Trade of Province \$1,500,000 Yearly

At the National Conference on Conservation of Game, Fur-Bearing Animals and other wild life, held under the direction of the Commission of Conservation on February 18 and 19 last, Mr. J. A. Belleisle, Inspector-General of Fisheries and Game for the province of Quebec, delivered an address on the subject of the special measures adopted in Quebec to conserve and regulate the fur industry and wild life generally. His address was as follows:

The province of Quebec possesses two great means of seconding the efforts of the Commission of Conservation, the creation of a number of fish and game reserves and the control of shipments of game and furs. Nearly 25 years ago the Department of Crown Lands created certain hunting reserves, which were leased both to individuals and to fish and game clubs incorporated in our province. The object and the aims for which these clubs were incorporated are, as provided for by law, to aid in the enforcement of the laws and regulations concerning the protection of fish and game in the province. These clubs may acquire and possess both movables and immovables necessary for their enjoyment of the privileges and the performances of the duties entrusted to them. They lease, for sporting purposes alone, certain fish and game reserves, which have been set apart for that purpose by the Lieutenant-Governor in Council, and the first condition of such leases is an efficient surveillance of the territory at the expense of the lessee. Any neglect of this essential condition of the lease, or any utilization of the reserve for other purposes, involves the cancellation of the lease, as well as the prosecution of the lessee at the hands of the Department.

FISHING AND HUNTING LEASES.

Outside of the clubs, a certain number of individual sportsmen are lessees of fishing and hunting territories; these are bound to the same obligations as clubs, in regard to the protection of their reserves and to the limitations within which they may utilize the privileges granted them by their lease. The number of reserves thus leased to clubs and individuals is 425, and they cover an approximate extent of 8,000 square miles for hunting purposes. In addition to the 469 rivers, or portions of rivers which are under lease for fishing purposes, 1,444 lakes are also leased, but I must add that several clubs lease all the fishing rights within their hunting territory; and a large portion of these being unsurveyed, it is impossible to say precisely the number of lakes which we have under lease. However, it may be affirmed without any fear of exaggeration that the number of our leased lakes is at least 2,500. All these reserves are so many special parks, where the protection is most efficient and in which the game may freely multiply. Moreover, all these lessees are required to employ one or more guardians named by the Minister, and to pay them during the twelve months of the year. Many of them, in order to fully comply with their obligations, employ additional guardians during certain months of the year. For instance, during the two or three months of the winter, in which the great depth of the snow most favours poaching operations, the clubs usually furnish additional help to their guardians. The same remark applies to lessees of fishing reserves during the summer and autumn months, and especially in the spawning season. Some of the lessees of salmon rivers employ as many as eight or ten guardians during the months of September and October. If we add the number of special guardians of clubs to the fish and game war-

dens employed by the Department, we have a total of 600 officers scattered throughout the province. When it is considered that reserves are chiefly in the most accessible sporting localities of the province, and are consequently the most exposed to poaching operations, it will be seen that this system is a very great aid to the protection of the fish and game wealth of Quebec.

CONTROL OF SHIPMENT OF GAME.

The second of our great means of protection is the control of the shipments of game. Up to two years ago we limited ourselves to the control of big game shipments. At the commencement of 1917, the Department of Colonization, Mines and Fisheries, inaugurated the control of the fur trade. A law was passed obliging the fur traders to take out a license and to report monthly all furs or skins bought by them. In order to render this control more efficient, the Government imposed a royalty on each skin, which must be stamped before it is paid. From that date no skin could be put upon the market without being stamped and the royalty paid, and no skin could be shipped outside of the province without having been first stamped and the royalty paid thereon and this under a penalty of a fine and confiscation. The same regulations prevail for furs or skins which are shipped from one portion of the province to another, when they are sent from localities where the province has officers to mark them. The shipment of either game or skins, of any kind whatever, is prohibited unless the contents are plainly marked on the outside of the packet, box, valise, or other receptacle, containing them; and this is also under the penalty of confiscation and fine. This measure permits us, not only to control the shipments, but also to prevent the purchase and shipment of furs taken out of season.

LESS FURS ILLEGALLY TAKEN.

One of the principal results of this policy of control of all shipments is a very great diminution in the number of furs taken illegally; for it is now useless to buy them from the trappers, seeing that they could not be disposed of; none of our officers will stamp furs which have evidently been taken out of season. The fur dealers are the most anxious to second our efforts in this direction, because the purchase of furs taken out of season is a detriment to the fur trade. Furthermore, these changes in the law permit dealers to conduct the trade openly and to sell their furs like all other traders without fearing the surveillance of the government officers. They have only to buy their license, have their furs stamped, pay the royalty, and their trade is as free as that of any other branch of commerce.

The passing of this law, in the winter of 1917, gave us control last year over the shipments of 617 dealers in furs. This year, with the perfecting of our system, we have been able to control the operations of 793 licensed dealers, who report to us each month and thus enable us to trace and to follow every skin in the trade. In the first year of the operation of this new system, the Government stamped and collected royalty on the skins of 192,241 muskrat, 38,576 beaver, 9,846 marten, 33,869 ermine, 5,964 mink, and 7,350 deer, besides a large number of other furs and skins, but forming a grand total of 317,060 skins, representing a value of \$1,500,000. When we consider that this system is new and that the result just mentioned is that of its first year in operation, we believe that we are justified in considering it most satisfactory.

ALL FURS AND SKINS STAMPED.

The law imposing a royalty, and the obligation to have all furs and skins coming from the province of Quebec stamped, enables us further to ascertain

very approximately the different species and quantities of the furs taken, particularly in certain portions of province. Thus, the Lake St. John region has furnished considerable quantities, also the Saguenay, more generally known as the North Shore. When the system has been longer in operation we shall be in a position to say what species are most sought after; if there are abuses in certain localities; if it is necessary to regulate the taking of any species, because of its growing scarcity; to ascertain any necessity which may exist for modifying our hunting seasons, or to prohibit completely the hunting of some particular species of fur-bearing animals, in order to permit their greater increase. I do not pretend, however, that we have succeeded in preventing all poaching; ill-disposed shippers are still able to send packages through the mails, or may succeed in evading the vigilance of our officers in certain localities near our boundaries, and ship furs outside of the province in a surreptitious manner.

HELP OF NEIGHBOURING PROVINCES.

Once on the other side of our frontier we are at the mercy of neighbouring provinces and states, and as none of our neighbours has a similar law to ours, the control of these shipments is difficult. In this connection, however, I am able to testify to the good will toward us of which the authorities in the neighbouring provinces and especially those of Ontario and New Brunswick, have given proof. For some months past, whenever authorities of our sister provinces have ascertained that furs shipped from Quebec did not bear the stamp required by our laws, they have seized and returned them to us. We also benefit in the same way at the hands of certain officers of the State of New York. I am glad to say also that the postal authorities have given us their assistance in a certain measure to enable us to control the sending of furs by parcel post. This improved system only operates, however, in the cities of Quebec and Montreal, but I anticipate with pleasure the possibility of such control being extended not only to the large centres but to the country post offices. The postal authorities have shown themselves disposed to second our efforts, and I have no doubt that before long there will be complete control of the shipments of furs through the mails.

We have not yet discussed the question with the Department of Customs. This department, through its officers along the frontier between the United States and Quebec, is in a position to know everything that crosses the border. I have no doubt that when we have obtained from the customs authorities the assurance that no furs shall be shipped from Quebec to the United States, without being properly stamped, the different dealers who at present fail to observe the law, will completely cease their clandestine trade.

UNIFORM LAWS TO CONTROL FURS

I have already said that a certain number still succeed in evading the law in shipping their furs to the other side of the interprovincial boundary. These furs are then reshipped to the large fur houses of Montreal or Quebec as if they originated in New Brunswick, Ontario, or Manitoba, and with the exception of beaver and otter, the sale of which is controlled in Ontario by the Government, it is impossible for us to verify the point of shipment of these furs. The Government of Ontario, in order to avoid abuse, very properly compels merchants who receive beaver or otter skins with the Government tag, to return these tags immediately to the proper department; so that there are no means left to establish in a satisfactory manner whether or not these beaver or otter skins really come from Ontario. This inconvenience will be overcome when the other provinces have adopted a system identical with ours for marking furs, and will also control the shipments of skins taken in the limits of their respective provinces. I do not despair of seeing this system of control universally adopted some day, and when this is done we shall have an almost perfect protection of the wild life, which is, after our forests, one of the greatest sources of our revenue.

With this object in view, and for the securing of greater co-operation in

the regulation of the fur trade, I beg to move the following resolution:

CO-OPERATION IN FUR TRADE REGULATION.

That in view of the increased impetus given to trapping operations by the high price of furs, and by more active competition in the trade, there is now much greater danger than hitherto of a very serious decrease in the supply of some of our most valuable fur-bearers, and even in some cases of their entire disappearance.

That experience proves that valuable statistics of much of the wild life of the country, so desirable for ensuring by timely action the perpetuation of declining species, may be best secured by a departmental control of the trade in raw furs.

That, this desirable control, instead of being a burden, may be made a source of income by the imposition of a small royalty on new skins; and that nothing is more reasonable than that such small royalty should be contributed to the State from the vast fur industry, based mainly upon the wild life of the public domain.

That, one of the chief difficulties encountered in controlling the trade in raw pelts, the royalties paid thereon and the statistics thereof, as in the enforcement of all wild life, is to be found in the efforts to evade the law by the lawlessly inclined, who take advantage of the differing provisions of law in contiguous provinces and states to ship the products of the chase through territory imposing less rigorous conditions than those of the province or state whence they originally come. Therefore, be it

Resolved, That while fully recognizing the complete control belonging to each province of the Dominion over the entire wild life in its own territory, it is the sense of this convention, that so far as possible, uniformity of laws and regulations regarding such wild life, and especially with reference to the control of the trade in raw furs, is extremely desirable as well as the utmost measure of reciprocity in the enforcement thereof; and further that even in the absence of a complete uniformity in such laws and regulations, most desirable results have been proven possible by a neighbourly reciprocity in enforcing them, as illustrated in the reciprocal return to their place of origin of raw furs and game, which when seized for illegal killing and shipment are declared to have been shipped from another province.

The resolution was adopted by the convention.

Hickory Supply Exhausted.

Hickory is Ontario's most valuable structural hardwood, and the supply is now commercially exhausted in the province. The wood is used chiefly by makers of vehicle supplies and tool handles. The wood is a very valuable one on account of its extraordinary hardness, strength, toughness and elasticity, in which it excels all other native hardwoods. Only 83 per cent of the hickory used by the manufacturers was reported as having been purchased in Ontario, as stated in a bulletin on the subject of wood-using industries of Ontario, issued by the Forestry Branch, Interior Department.

Trades Union Membership.

Trades union membership in Great Britain during the year 1918 showed an increase of 1,449,733 over the previous year, the total membership reported being 4,532,085. In the United States the American Federation of Labour reported a membership of over 3,260,000 at the close of 1918, a gain of more than 273,500 during the last eight months of the year, according to the July number of the *Labour Gazette*, issued by the Department of Labour.

Late Potatoes Look Well.

Throughout the province of Ontario, the crop of early potatoes has been seriously reduced on account of unfavourable weather conditions. The acreage of these is comparatively small and the yield generally light. Recent rains have made conditions more favourable for late potatoes, and the crop is looking well, according to reports received by the Fruit Commissioner's Branch, Department of Agriculture.

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EXTRACT FROM ORDER IN COUNCIL No. 2206.
 "The Committee of the Privy Council further observes that as this war is being waged by the whole people of Canada, it is desirable that the whole people should be kept as fully informed as possible as to the acts of the Government which are concerned with the conduct of the war, as well as with the solution of our domestic problems; and for this purpose an Official Record should be instituted to be issued weekly for the purpose of conveying information as to all Government measures in connection with the war and as to the national war activities generally."

EMPLOYEES ON STEAM RAILWAYS OF CANADA

Amount of Compensation Also is Recorded in Department Report.

The number of employees on the railways of Canada and their compensation, each year since 1911, is shown in the report on railway statistics, issued by the Department of Railways and Canals, as follows:—

RAILWAY EMPLOYEES.	
Numbers.	
1911	141,224
1912	155,901
1913	178,652
1914	159,142
1915	124,142
1916	144,770
1917	146,175
1918	143,493
Compensation.	
1911	\$ 74,613,738
1912	94,237,623
1913	115,749,825
1914	111,762,972
1915	90,215,727
1916	104,300,647
1917	129,626,187
1918	152,274,953

Earnings per Train Mile.
 The earnings per train mile of government-owned lines in 1916-17 amounted to \$1.86 and in 1917-18 to \$2.15, an increase of \$0.29 per mile, as stated in the annual report of the Department of Railways and Canals.

Grape Market Good.
 Offers now being made by wine manufacturers in the Niagara District would indicate that grape growers will receive very satisfactory prices for their crop, as stated in August issue of the Fruit and Vegetable Crop Report, published monthly by the Fruit Commissioner's Branch, Department of Agriculture.

B.C. Tubers Light Crop.
 Reports received from British Columbia regarding the condition of onions and potatoes are somewhat unfavourable, as stated in the August number of the Fruit and Vegetable Crop Report, issued monthly by the Fruit Commissioner's Branch, Department of Agriculture. The crops are generally light and backward, due to dry weather.

DIRECT USE OF COAL AS FUEL WASTES MANY VALUABLE BY-PRODUCTS

Advantages of Coking Coal are Presented in Paper on the Coal Resources of Country

PRODUCTS RECOVERED

In a monograph on the subject of the "Coal Resources of Canada—Their Relation to the Industrial Development of the Country," by Mr. F. E. Lucas, published in The Final Report of the Fuel Controller, the advantages of utilizing coal in the production of coke, rather than using coal directly as a fuel, are pointed out. After showing the favourable qualities of coke as a fuel, the paper says:

"In the production of coke many valuable by-products are obtained: gas, tar, ammonia, benzol, toluol, xylol, and naphtha, or combining the latter four, a motor fuel much superior to the best gasoline obtained.

"We are not getting anything like the amount of light, heat, or power we should, or could get, and in getting this extra light, heat and power, we would not only be conserving the coal supply but getting cheaper power and at the same time recovering other products which would be of great economic value to the country and lead to the extension of existing industries and the establishment of new ones.

"Starting with the importation of anthracite, which is practically all used as domestic fuel. This can be almost entirely eliminated, and in so doing give as large returns on the invested capital as any industrial concern in the country.

"Referring back again to the by-products, a word now about their use and the markets available.

GAS.
 "If the plant is near a large city or thickly populated district, it might all be sold for domestic lighting and heating. This is done in many districts by selling direct to existing gas companies, for no gas company can produce gas at the price at which a by-product coke plant can afford to sell it. Or if there are large industrial works within reach, it can be sold to them and at such a price as to be more economical than coal, or it can be used in gas engines and power developed. The figure generally accepted as being

reasonably conservative for gas-engine practice is 11,500 B.T.U. per horsepower, and it will be readily seen how tremendous quantities of power can be made available from this source. Gas supplies for domestic use must have the sulphur extracted. This is done by iron oxide, from which the sulphur can be recovered for the manufacture of sulphuric acid, which is needed for the production of ammonium sulphate.

TAR.
 "This product can be used directly as a boiler or furnace fuel by being burned in the same manner as oil, or it can very cheaply be dehydrated and the more highly volatile matter extracted and then used for road binding. Even for firing it would be found advantageous to dehydrate. Some tars, depending on the temperature and conditions of the coking process, can be used as fuel for Diesel engines. The most economical way to handle the tar, however, is to distill it and recover the various volatile fractions, such as the benzol, toluol, naphtha, the carbolic oils, cresote, naphthalene, and pitch.

"The benzol, toluol, naphtha, etc., can be added to that recovered directly from the gas, for motor fuel. The crude carbolic finds a market with manufacturers of antiseptics, colours, explosives, and a great deal is used in recent years on the manufactures of phonographic records, imitation amber for pipes, etc.

"So far as the value to the country is concerned, the cresosote recovered is one of the most valuable by-products of the coal. Railway ties have doubled in price in the past ten years, and there is every prospect of a *pro rata* increase in further years. The forestry branch reports 19,100,000 ties used on Canadian roads in one year. A fairly safe assumption would be a complete renewal of all ties every five years, while fifteen years might be taken as a reasonable average life for creosoted ties. The cost of creosoting is less than the cost of a new tie, so that the creosoting of the ties becomes not only a commercially attractive proposition, but will save many millions of feet of lumber annually.

"The same process of reasoning may be applied to mine ties and timbers, and also to bridge timbers.

"The general adoption of the creosoting process would materially reduce this number in a few years. If we assume a consumption of only 10,000,000 ties per annum there would be required about 25,000,000 gallons of cresote oil per year, or the distillation of 85,000,000 gallons of tar, which would in turn require the carbonizing of 8,000,000 tons of coal.

"The naphthalene finds a market as a colour base. For the manufacture of deodorizers, disinfectants, moth balls, etc., and also in the manufacture of a chlorinated wax for use in electrical work.

BENZOL.

"Under this name is often included the toluol, xylol and naphtha, which are recovered at the same time. Each of these products, together with naphthalene, can be recovered separately and refined to their chemically pure state, and there will undoubtedly be a market for a small quantity of each for solvents, dry cleaning, dyes, explosives, etc. During the war the toluol and a considerable portion of all benzol recovered was used in the manufacture of explosives.

"The great market now the war is over is undoubtedly to combine the four products, benzol, toluol, xylol and solvent naphtha, as a motor fuel, giving a product which distills between 78 and 165° C. This fuel has been carefully tested and found to give from 20 to 30 per cent greater mileage than the best gasoline, with about 15 per cent greater power, easier starting, no knock with advanced spark and actually less tendency for the formation of carbon in engine cylinders. Benzol itself comprises approximately 70 per cent of the fuel and this freezes at 44° F. The addition of the toluol and other products named, in the proportion in which they are recovered, brings the total fuel mixture down to a freezing point of approximately zero F., so that to make an all-year fuel for our climate we have to mix with sufficient gasoline to lower the freezing point still further. The addition of 25 to 30 per cent of gasoline gives a freezing point low enough for most places, except in the north, where it might be necessary to add as high as 50 per cent.

"According to Government statistics, Canada's consumption of gasoline in 1916 was 74,000,000 gallons, of which 18,000,000 gallons was imported as distilled product, and most of the remainder was made from imported crude oils. So that it is evident that with a total Canadian production of say 20,000,000 tons of coal, if it was all carbonized and the motor fuel recovered, the market would still be far short of being satisfied. This does not take into consideration the fact of the continued yearly increase in consumption which is bound to occur.

"The pitch remaining can be made of almost any consistency desired. It can be made so hard that it can be pulverized and used as boiler fuel or in the same state it can be used as a binder for briquettes. In its softer state it is also used as a binder for briquettes, for roofing and road making. It is also mixed with the lighter portion of the distillate for the manufacture of paint for special purposes.

AMMONIA.

"While this has been shown in the balance sheet as sulphate of ammonia which is used almost entirely as a fertilizer, yet it can be recovered in the form of concentrated liquor containing from 16 to 25 per cent ammonia for the manufacture of explosives, or in the form of dry ammonia gas for refrigerator purposes, or as the aqua ammonia of commerce and chemistry. However, these are only small markets when compared with the market as a fertilizer. Its only competitor, as a nitrogenous fertilizer is nitrate of soda from Chili, and as the population of the country increases and virgin lands become exhausted, we must, if we are to be fed, keep up the productiveness of the land in a great measure by the use of artificial fertilizers.

"An investigation into the yield per acre of Great Britain and the amount of nitrogenous fertilizer used when compared with America will readily substantiate these statements and set at rest any doubt regarding future markets. Considering the agricultural acreage of Canada and the fact that except for such parts as are growing leguminous crops the dressing for some crops should be even as high as 250 pounds of sulphate of ammonia per acre per year, we have further proof of the continuity of the market."

Traffic on Canals.

The total traffic through the several canals of the Dominion for the season of 1917 amounted to 22,238,935 tons, a decrease of 1,344,556 tons compared with the previous year; 244,819 passengers were carried, a decrease of 18,829, according to the report of the Department of Railways and Canals.

APPROPRIATIONS UNDER FARMING INSTRUCTION ACT

The following table taken from the report of the Agricultural Instruction Act, issued by the Department of Agriculture, shows the appropriations under the Act for the last five fiscal years:—

	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Prince Edward Island	26,529 85	27,832 81	29,138 28	30,443 75	31,749 22
Nova Scotia	44,288 45	61,144 45	68,001 87	74,859 28	81,716 69
New Brunswick	44,509 93	49,407 20	54,308 40	59,209 60	64,110 80
Quebec	159,482 40	187,409 16	215,310 70	243,212 23	271,113 76
Ontario	195,733 32	230,868 83	266,013 64	301,158 45	336,303 26
Manitoba	51,730 05	58,075 45	64,421 31	70,767 21	77,113 11
Saskatchewan	54,296 29	61,152 31	68,011 04	74,869 76	81,728 48
Alberta	46,094 95	51,310 41	56,528 82	61,747 22	66,965 62
British Columbia	47,334 76	52,799 38	58,265 94	63,732 50	69,199 06
Veterinary Colleges	20,000 00	20,000 00	20,000 00	20,000 00	20,000 00
Totals	700,000 00	800,000 00	900,000 00	1,000,000 00	1,100,000 00

TELEGRAPHIC REPORTS ON DOMINION CROPS

Summary of Conditions of Field Crops Received by Wire and Issued by the Bureau of Statistics at Ottawa

A summary of telegraphic crop reports received on the condition of field crops throughout Canada, issued by the Dominion Bureau of Statistics, is as follows, under date of August 2:—

Prince Edward Island (Charlottetown).—July weather favourable for all crops. Hay-making commenced seventeenth; about one third cut, cereal crops promise yields above average. Black Leg caused many misses in late potatoes; potatoes free from disease look extra good. Roots and corn growing well. Small fruits abundant, large fruit crop above average.

Nova Scotia (Amherst)—July weather unsettled. Upland hay good. Marsh fair. Wheat, oats and buckwheat fair, barley poor, potatoes, turnips; also turnip seed fair; some club root in evidence. Bush fruit and apple crop fair.

New Brunswick (Fredericton).—Dry weather during early part of July shortened a portion of the hay and grain crops, but generally these crops are nearly average, with potatoes and roots promising well. Rains during the last ten days have delayed hay but are beneficial to all crops. Small fruits have given good yield, and apples while somewhat affected by scab are a fair crop.

Quebec Ste. Anne de la Pocatiere).—Beneficial rain has fallen during the last three weeks of July. Prospects much better than a month ago. Cereals better than last year. Potatoes very good; field roots good. Hay a little better than anticipated; field peas above the average; small fruit below the average. European plums very poor. Quebec.—Hay in pasture poor, corn very good; grain good; roots below average; potatoes good; small fruits very good; apples about average; plums and cherries bad; grapes good. All vegetables very good except carrots, beets, parsnips, turnips, which are medium.

Ontario (Toronto).—Hay and fall wheat all harvested; yields above average. Spring grains have very short straw owing to the drought; low yields probable. Potatoes rather disappointing, roots backward but may rally. Second growths of clover and alfalfa light. Corn relatively best growing crop. Drought at picking lessened great promise of berries.

Manitoba (Winnipeg).—Recent weather mostly hot causing very early harvest. Considerable rye cut, wheat cutting commenced. Probably above average yield; considerable rust in spots. July rainfall too heavy some places too light others, straw fairly heavy; barley and corn promise well; oats and flax fair, potatoes scarcely reach average. (Morden).—Wheat cutting began this week, much rust everywhere and wheat of rather a poor grade, yield not greater than 50 per cent of normal height, temperature high, no rain.

Saskatchewan (Rosthern).—Highest temperature since beginning, one hundred and two on sixteenth, total rain one point nought. Fine crops ripening prematurely. Wheat estimate seven bushels per acre on area not blown out. Cutting under way two weeks earlier than normal. Estimate three quarters sufficient feed this winter between Ducklake, Saskatoon and Two Rivers. The Department of Agriculture reports that wheat cutting has commenced in many parts. Early sown rye threshed near Fort Qu'Appelle, yields 25 bushels per acre. It is expected that the harvest will be general next week in almost all districts except certain parts of the south-eastern district where plentiful rainfall has caused a heavier growth than in other parts of the province.

(Scott).—Weather unusually warm and dry, a few favoured sections report some rain and fair crops but more sections report little rain and very little crop. Very light, harvesting early grain has commenced. (Indian Head).—Good rains from first to thirteenth greatly improved crop conditions and assure an average yield in this district. Wheat promises five to ten per cent ahead of last season; oats ten to fifteen per cent; barley not up to average. Harvesting commenced at experimental farm, will be general throughout district by eighth or tenth, rains have been local and many districts report continued dry weather with little crop or pasture.

Alberta (Lacombe).—First three weeks July warm and dry, crops suffered, rainfall estimated two inches fell largely during last ten days. Crops good in this district but light in eastern section of province, few early crops being cut, putting up light crop of hay commenced under unsettled weather conditions.

British Columbia (Invermere).—The extreme heat and no precipitation only point thirty-three inch being recorded have combined materially to reduce crop yield. Haying is nearly completed, it has been cured under ideal conditions and will yield above the average this season, cereals under irrigation are fair while roots and corn promise well. (Summerland). Crop conditions good, apples will be biggest crop in Okanagan history. Yellow Newtowns and Northern Spies are light crop this year. Peaches are good, plums only fair, potato crop not showing up well and the yield will be low. Season very dry and rain would help with crop and water supply. (Agassiz).—Excepting years 1914 and 1917 this July is driest for fifteen years, precipitation being point six six. Excellent hay crop and in good condition. Corn late but growing well now. Roots need moisture. Potatoes average. Early cereals just ready to harvest. Live stock in good condition.

POSITIONS VACANT IN CIVIL SERVICE

Junior Department Solicitor for Soldiers' Settlement Board Required

The Civil Service Commission of Canada give notice that applications will be received from persons qualified to fill the following positions in the Civil Service of Canada:

A Junior Departmental Solicitor, Soldier Settlement Board, Salary, \$2,520 per annum.

1. A Junior Departmental Solicitor for the Western Division, Soldier Settlement Board, at a salary of \$2,520 per annum. Applicants should be graduates from a School of Law of recognized standing and should have status before a Provincial Bar. They should have a general knowledge of Federal and Provincial Laws, special knowledge of Provincial practice and legislation with respect to—

- (a) Land.
- (b) General Conveyancing.
- (c) Devolution of estates.
- (d) Loan Company work.

The appointee will be required to supervise the legal work arising in Western Canada in connection with the operation of the Soldier Settlement Act. He will be required to check bills rendered by solicitors for services rendered to soldier settlers and the Board. He will be required also to render technical advice as called upon him from time to time. He will be directly responsible for the clerical work of the Division.

A Junior Engineer, Department of Public Works, Prince Rupert, B.C., Salary, \$1,680 per annum.

2. A Junior Engineer for the Department of Public Works at Prince Rupert, B.C., at an initial salary of \$1,680 per annum. Applicants should be graduates in engineering from a School of Applied Science of recognized standing with two years of engineering experience, or four years of engineering experience in design, estimate, construction and maintenance work. Four District Home Supervisors, Soldier Settlement Board, Salaries \$1,500 per annum.

3. Four District Home Supervisors for the Home Branch of the Soldier Settlement Board in the four Western Provinces, with headquarters at Winnipeg, Regina, Calgary and Vancouver, at initial salaries of \$1,500 per annum. Candidates must have education equivalent to High School graduation with training in home economics. They should have at least two years of experience in social service work, and knowledge of farm life, and should be women of mature judgment, tact and good address. Candidates should be able to investigate personally living conditions of soldier settlers and to assist in solving domestic problems. The appointees will be required to work in conjunction with various organizations in these provinces, which have for their object the improvement of home conditions; they will be required to correspond with soldiers' wives and distribute home administration literature to them; they must also be able to supervise the clerical and field work of the branch.

GENERAL DIRECTIONS.

The salaries for the above positions may be supplemented by such bonus as may be provided by Parliament.

Selections for eligible lists of applicants qualified to fill similar vacancies which may occur in future may be made from the applications for these positions.

According to law, preference is given to returned soldier applicants, possessing the minimum qualifications. Returned soldiers must furnish a certified copy of their discharge certificates, or in the case of commissioned officers, a certified statement of their military services.

Attention is drawn to the fact that appointments to these positions shall be made, so far as possible, from bona fide residents of the province in which the position is situated.

Application forms properly filled in must be filed in the office of the Civil Service Commission not later than August 29. Application forms may be obtained from the offices of the Employment Service of Canada or the Secretary of the Civil Service Commission, Ottawa.

By order of the Commission,
WM. FORAN,
Secretary.

WESTERN RYE GRASS MAKES GOOD HAY

Grasses Tested at Scott Station Yielded Average of Two Tons per Acre

One of the biggest problems confronting the farmers on the open plains in the dry farming sections is that of providing hay for their work horses and other live stock. In many districts the greater part of the wild land has been either broken up or used for pasture and farmers are anxiously enquiring for some grass that will provide them with sufficient hay for their requirements. No grass has yet been found that will give good crops for a lengthy period of years and for this reason it is advisable to consider establishing some system of crop rotation and include in the rotation some grass for hay and if necessary for pasture. An Experimental Farm note is issued, as follows:—

Out of all the grasses tested on the Scott Experimental Station, Western Rye Grass has proven to be one of the hardiest, most drought resistant and most easily eradicated. From the stand point of yield it is at the top of the list, averaging over two tons per acre for the past three years. On the fields the yields were lighter and have in some seasons been as low as half a ton per acre and up to one and three-quarters. Nevertheless it has been found that Western Rye grass grown for hay in the crop rotation has shown some profit and in addition, breaking up Western Rye grass sod has cost less per acre than has the ordinary summer-fallow. This is due to less weeds in the sod land. It is also worth while observing that wheat grown after summer-fallowing the sod land has given greater profits per acre than where wheat was grown on the ordinary summer-fallow.

In seeding down it has been found that an increased yield can be secured in the first crop by sowing alone, but the second crop is dependent on the amount of moisture and not in the treatment in seeding down. Sowing on summer-fallow land has given heavier yields than when sown after a grain crop but this difference is not nearly as great as would be expected. Where barnyard manure has been turned under and grass grown in succeeding years the yield has been quite equal to where the grass has been sown on fallow land.

Judging from the various experiments with this grass light seeding using from 10 to 12 pounds of seed per acre is the most profitable. Mixing other grasses with Western Rye grass has up to the present decreased rather than increased the yields.

War Savings Stamps pay 4½% compounded half-yearly.

INDICATED YIELD OF POTATOES BY PROVINCES

The following table, compiled by the Dominion Bureau of Statistics and issued by the Department of Agriculture, Fruit Commissioner's Branch, shows the yields of potatoes by provinces, as indicated by condition on June 30, 1919:—

Province.	Average Yield Per Acre 1909-18.	Condition June 30 (100 = Average Yield per Acre 1909-18).	Yield per Acre as Indicated by Condition.	Areas Sown According to Estimate of June 30.	Total Yields As Indicated by Condition.
	Bush.	p. c.	Bush.	Acres.	Bush.
Canada.....	149.50	95	143.50	712,655	102,189,000
Prince Edward Island	180.00	98	176.50	30,000	5,295,000
Nova Scotia.....	190.25	98	186.50	49,900	9,306,000
New Brunswick.....	186.00	98	182.25	56,325	10,269,000
Quebec.....	143.50	97	139.25	259,600	36,149,000
Ontario.....	122.25	91	111.25	154,820	17,224,000
Manitoba.....	156.75	100	156.75	44,000	6,897,000
Saskatchewan.....	148.25	92	136.50	59,000	8,054,000
Alberta.....	147.75	93	137.50	45,000	6,188,000
British Columbia.....	208.75	96	200.50	14,000	2,807,000

THERAPEUTIC VIRTUE OF MINERAL SPRINGS SUBJECT OF REPORT

*Waters of Caledonia Springs
Described in Mines Branch
Bulletin*

KNOWN FOR HUNDRED YEARS

In the bulletin "The Mineral Springs of Canada," by R. T. Elworthy, B.Sc., issued by the Mines Branch, Department of Mines, there is a description of Caledonia Springs, Prescott County, Ontario, as follows:—

"The waters of Caledonia Springs form one of the best-known groups of springs in Canada. They were known to the settlers in the Ottawa Valley as early as 1806, and well patronized by them. The residents of Montreal and Ottawa also visited them, and had a considerably more arduous journey than their descendants to-day who now reach the springs in an hour and a half from Montreal or Ottawa, travelling in a comfortable train. In those days, visitors from Montreal had to take the train to Lachine, thence by steamer through Lake St. Louis and Lake of Two Mountains to Carillon; again by train to Grenville, where a boat was taken to L'Original. From this place the ten mile journey to the springs was completed by stage. Accounts still exist of the various events of these days, horse races, walking contests, miraculous cures, and hotel fires, and many interesting stories are told.

Altogether, seven separate sources of water exist within a small area, and the eighth, the Duncan Spring, is only two miles away. Of the seven sources, three are flowing springs and four are artesian wells. The three springs, the Saline, the Sulphur and the Gas Springs, lie quite close together, the Sulphur and Saline only a few feet apart. The springs have been the subject of several analyses, dating back from 1843, when they were examined by Dr. James Williamson. Twice Dr. Sterry Hunt made analyses of the waters. In 1847 and in 1865. In 1903-1907 Professor R. F. Ruttan, of McGill University, carried out a careful investigation for the Caledonian Springs Mineral Water Company. They were again analysed as detailed in this report, in 1916.

WATERS ARE SIMILAR.

The chief constituent of all the waters may be considered to be sodium chloride and several of them show considerable similarity in composition. The waters from the springs are of considerable therapeutic value and many cures have been effected by the use of them. An interesting paper was written on the therapeutic properties of Caledonia Springs by Dr. E. S. Harding, B.A., M.D., sometime resident physician and the statements given, concerning the individual waters, are taken from it.

According to Sterry Hunt, they rise from the Trenton limestone formation though he considered that three of the waters at least were formed by the mingling of a concentrated saline water with water containing alkaline carbonate such as would be derived from argillaceous sediments, similar to those composing the Utica and Hudson River formations.

SALINE AND SULPHUR SPRINGS.

The Saline and Sulphur Springs issue only a few feet apart. The sulphur water comes from a fissure in the rock 14 feet down, while the saline water proceeds from the junction of the clay and the rock. In 1915 the outlet of these two springs was cleaned up and white tiled partitions built, so that the two waters are entirely separated.

The saline water is carbonated and bottled and has an extensive sale under the name of "Magi" Caledonia water. It constitutes a very pleasant and at the same time beneficial beverage.

The water may be classified as a sodic, muriated alkaline-saline, water

TENDERS ASKED FOR BY THE DOMINION GOVERNMENT

Firms desirous of tendering for any Government Supplies should apply to the War Purchasing Commission, Booth Building, Ottawa, giving particulars of the business in which they are engaged and a list of the articles they wish to supply.

Tenders are constantly being invited by the different departments of the Government, tender forms and specifications being distributed by mail to all individuals or firms concerned, known to the Commission.

The War Purchasing Commission keeps a register of the different firms and lines of business they are interested in, and it is, therefore, advisable that those wishing to have tender forms sent them should register their names, addresses, catalogues, etc., with the War Purchasing Commission, which co-operates with all other departments.

Tenders have been invited by the different departments of the Dominion Government between August 2 and 8, as follows:—

JUSTICE (PENITENTIARIES BRANCH)—

Articles.	Point of delivery.	Date due.
Fat pork	St. Vincent de Paul	August 7
Sole leather	Kingston	" 12
Oats	"	" 13

SOLDIERS' CIVIL RE-ESTABLISHMENT—

Universal milling machine	Calgary	August 12
Vegetable sink	Kingston	" 13
Hand power elevator	Keith	" 13
Kitchen equipment	St. John	" 13
Electric elevator	Keith	" 14
Hard white felt	Toronto	" 13
Lathes	"	" 15
Surgical supplies	Vancouver	" 18
Lathes, woodworking	Ste. Anne de Bellevue	" 15
Motor	"	" 18
Surgical equipment	Vancouver	" 18
Hand power elevator	St. Agathe	" 18
Yellow horse hide leather	Toronto	" 18

PUBLIC PRINTING AND STATIONERY (STATIONERY BRANCH)—

Buff printing paper	Ottawa	August 14
Cartridge envelope paper	"	" 14
White wove envelope paper	"	" 14
Cardboard trays	"	" 14
Cellboard containers	"	" 11
Index bristol	"	" 18

PUBLIC WORKS, DEPARTMENT OF—

Desks and chairs	Ottawa	August 16
Saddle soap	Ottawa	August 14
Flags, signal, International Code	"	" 18
Hides, brown	"	" 14
X-Ray supplies	Toronto	" 12
X-Ray supplies	Kingston	" 13
Acid, carbolic	Toronto	" 18
Surgical supplies	Winnipeg	" 18
Drugs	Ottawa	" 18
Surgical supplies	Toronto	" 18
Tablets	Ottawa	" 14
Gold, dental	"	" 15
Goggles	"	" 15
Dry cleaning	Victoria	" 14
Dry cleaning	Vancouver	" 14
Flour	Cobourg	" 9
Lemon flavouring	"	" 9
Vanilla flavouring	"	" 9
Bran	Kingston	" 9
Tomatoes, canned	"	" 9
Peas, canned	"	" 9
Corn, canned	"	" 9
Tomatoes, canned	Cobourg	" 9
Rice	Halifax	" 15
Coal	Vancouver	" 22
Coal	Victoria	" 22
Coal	Esquimalt	" 22
Emptying latrines	Levis	" 12
Special groceries	Halifax	" 12
Canned pilchards	London	" 12

SURPLUS STORES—

Water bottles	Due	August 26
Mess tins	"	" 26
Bolt clippers	"	" 26
Woollen undershirts	"	" 14
Woollen underdrawers	"	" 14

(slightly sulphuretted and carbon-dioxated). It contains small amounts of bromides and iodides, which have the larger amounts of magnesium (10.6 per cent) and calcium bicarbonates (2 per cent), and sodium chlorides (83 per cent of the total inorganic matter in solution).

The Sulphur Spring water varies slightly from the Saline water, in holding a large amount of hydrogen sulphide gas in solution, and in containing only four per cent of sodium bicarbonate, giving it a higher alkalinity. It also contains a small amount of mineral matter in solution—6,231 parts per million, as compared with 8,118 parts per million. The analysis shows it to be a sodic, muriated carbonated alkaline-saline water (sulphurated). It

owes its therapeutic properties, in part, to the presence of hydrogen sulphide, and is used largely in the treatment of rheumatism.

THE GAS SPRING.

The Gas Spring is also a sodic, muriated, alkaline-saline water, and closely resembles the Saline water in composition, though the flow is slightly less. Gas is evolved from the water which rises in a circular glass-capped cement well and was found to possess a radio-activity of 306 units.

The relatively high percentage of carbon monoxide may account for the alleged night-mare-giving properties of the water. The therapeutic use of the water is due mostly to the presence of carbonic acid and the bicarbonates, making it of value in gastric conditions.

CONTRACTS AWARDED BY ORDER IN COUNCIL

Pacific Construction Company Awarded \$152,000 Fraser River Contract

The Department of Public Works announces the following contracts awarded under Order in Council:

Half-Moon Bay, Comox-Atlin, B. C.—Construction of wharf. Contractor: Fraser River Pile Driving Co., Ltd., of New Westminster, B.C., at \$5,775. Order in Council dated 1st August, 1919.

Ste. Anne De Beaupre, P.Q.—Wharf repairs and reconstruction. Contractor: Onésime Poliquin, of Portneuf, P.Q., at \$26,201.50 (unit prices). Order in Council dated 1st August, 1919.

Toronto Harbour, Ont.—Eastern Entrance—Reconstruction of portion of East Pier Superstructure. Contractors: The C. S. Boone Dredging and Construction Co., Ltd., of Toronto, Ont., at \$31,095.70 (unit prices). Order in Council dated 1st August, 1919.

Berthier (en bas), P.Q.—Repairs to wharf. Contractor: Nazaire Letourneau, of Montmagny, P.Q., at \$17,556.80 (unit prices). Order in Council dated 1st August, 1919.

Three Rivers, P.Q.—Dredging in St. Maurice River. Contractors: Simpson Bros. Co., Ltd., of Montreal, P.Q., approximate amount, \$30,480. Order in Council dated 1st August, 1919.

Sidney, Roberts Bay and Saanichton, B.C.—Repairs to wharfs. Contractors: McDonald, Watson & Wither, of Victoria, B.C., at \$10,948.82 (Sidney \$6,393.50, Roberts Bay \$3,377.24 and Saanichton \$1,178.08). Order in Council dated 2nd August, 1919.

North Arm of Fraser River, B.C.—Dredging. Contractors: The Pacific Construction Co., Ltd., of Vancouver, B.C., approximate amount \$152,000. Order in Council dated 2nd August, 1919.

Tender for Amherst.

Separate sealed tenders addressed to the undersigned, and endorsed "Tender for Grading, Pavement, Sidewalks, etc., etc., Drill Hall, Amherst, N.S.," as the case may be, will be received until 12 o'clock noon Friday, August 15, 1919, for the construction of (1) grading, pavement, sidewalks, etc., (2) water-proofing basement walls, (3) mastic floor, Drill Hall, Amherst, N.S.

Plans and specification can be seen and forms of tender obtained at the office of the Chief Architect, Department of Public Works, Ottawa, the Caretaker, Public Building, Amherst, N.S., the Superintendent of Dominion Buildings, St. John, N.B., and the Inspector of Dominion Buildings, Halifax, N.S.

Tenders will not be considered unless made on the forms supplied by the Department and in accordance with the conditions set forth therein.

Each tender must be accompanied by an accepted cheque on a chartered bank payable to the order of the Minister of Public Works equal to 10 p.c. of the amount of the tender. War Loan Bonds of the Dominion will also be accepted as security, or war bonds and cheques if required to make up an odd amount.

By order,

R. C. DESROCHERS,

Secretary.

Department of Public Works,
Ottawa, August 2, 1919.

Buy War Savings Stamps.

RULES OF NOMENCLATURE IN GEOGRAPHIC NAMES

Rules Set Down Authoritatively by Geographic Board to be Followed in Canadian Maps, Publications and in Ordinary Practice

The following rules to be adopted throughout the Dominion in geographic names and orthography have been prescribed by the Geographic Board of Canada, a body consisting of experts on geographic matters, in the service of the Dominion and Provincial Governments. The rules are taken from the fifteenth report of the Geographic Board, issued by the Department of the Interior. All questions concerning geographic names or orthography should be submitted to the Board for adjudication:

1. When the priority of a name has been established by publication, particularly when such a publication has occurred in any standard or authoritative work or works, that name should, if possible, be retained.

2. When names have been changed or corrected, if not too firmly established by local usage or otherwise, the original forms should be restored.

3. In cases where what was evidently originally the same word appears with various spellings sanctioned by local usage or otherwise, these various spellings when applied to different features should be regarded as in effect different names, and as a rule it is inadvisable to attempt to produce uniformity.

4. As a rule the first published name should be retained, but where a choice is offered between two or more names for the same place or locality, all sanctioned by local usage, that which is most appropriate and euphonious should be adopted.

5. The possessive form should be avoided whenever it can be done without destroying the euphony of the name or changing its descriptive application. Where the possessive form is retained, the apostrophe should be dropped.

6. It is desirable to avoid the use of hyphens to connect parts of Indian names.

7. Names consisting of more than one word may be connected by hyphens or combined in one word as may be advisable.

8. It is desirable to avoid the use of the words city and town as parts of names.

9. The form "canyon" may be used instead of "canon," but the latter is preferable.

10. The term "brook" is considered preferable to "creek" for designating small streams, and will be adopted in cases where the latter has not become too firmly fixed.

11. The Board suggests that the initial letters of generic or descriptive parts of geographical names, when used in reports or other documents, should not be capitals.

12. The use of alternative names should be discontinued where possible or not inconvenient.

13. Geographical names in a foreign country should be rendered in the form adopted by that country, except where there are English equivalents already fixed by usage.

14. French names in Canada are to be spelled, accented, hyphenated, etc., according to the rules of the French language.

15. In cases where names already exist, and have been published in both English and French form and have been sanctioned by long usage, no attempt shall be made to abolish either form, but both may be recognized and published in the Board's list of decisions, and it shall be deemed correct to use either form in official documents in either language. In all other cases, any duplication of form shall be discouraged and preference shall be given to the form which has priority of origin, whether this be English or French.

16. In English text and map printing, the use of hyphens for composite French names, though it is recommended, shall not be considered obligatory.

17. The spelling of native geographical names should represent, approximately, the true sounds of the words as pronounced in the native tongue. In the orthography of names of Indian origin in the province of Quebec, the rules of the Board, based on those of the Royal Geographical Society, are preferable to French practice as being simpler and in accordance with international usage, and shall be followed in the case of new names.

18. Where a generic descriptive term, such as Cape, Bay, River, etc., is added to a name, it is permissible to translate such term into French for use in French publications, or into English for use in English publications, if it can be done without producing a mixture of English and French.

19. The Board adopts the rules of the Royal Geographical Society for the orthography of geographical names, of which the broad features are as follows:

(a) The vowels are to be pronounced as in Italian, and the consonants as in English.

(b) Every letter is pronounced, and no redundant letters are introduced. When two vowels come together each is sounded, though the result, when spoken quickly, is sometimes scarcely to be distinguished from a single sound, as in *ai, au, ei*.

(c) One accent only is used, the acute, to denote the syllable on which stress is laid. This is very important, as the sounds of many names are entirely altered by the misplacement of this "stress."

REGULATIONS.

The following regulations have been adopted for the guidance of those submitting names to the Geographic Board.

20. Names submitted to the Geographic Board must be accompanied by a map showing the position of the features for which the names are proposed.

21. If the features already bear names which appear on any published map, a reference to this map suffices.

22. Names received by the Board for consideration are referred to the member of the Board representing the province concerned, after which they go to the Executive Committee of the Board. It is desirable, therefore, that lists and maps should be submitted in duplicate, where this can be done conveniently.

23. The memorandum submitted should state whether the suggested names are new, or have been published, and whether the features they apply to are unnamed or possess names. If a suggested name is new, full particulars respecting the origin must be given. If a suggested name has already been published, the date of publication as well as the circumstances of the origin, if known, should be given.

24. If a proposed name is intended to replace a published or existing one, this name should be given, with the place and date of publication, if known, as well as the arguments for the proposed change.

25. Duplication of names, especially within one province, is objectionable. This excludes the use of all such common descriptive names as Bear, Beaver, Duck, Eagle, Fish, Mine, Moose, Pigeon, Pine, Sturgeon, Trout, Turtle, Wolf, Wood, Black, Clear, Green, Red, White, Long, Mud, etc.

26. Duplication also renders undesirable a number of descriptive names, which are less common. Many of these have been applied to mountain peaks. An examination of the annual report of the Geographic Board will show if a proposed name is in this class.

27. The system of naming branches of rivers South branch, North branch, East fork, etc., is undesirable; individual names are preferable. The names of main streams should be carried to the headwaters.

28. Blank forms for lists of names are furnished by the secretary on application.

TRAMWAY EMPLOYEES AND THEIR EARNINGS

The number of employees of electric railways of Canada, and the compensation received by them, is shown in the table below, taken from the report on Railway Statistics of the Dominion, published by the Department of Railways and Canals:

Numbers—	
1916	10,622
1917	11,696
1918	11,646
Salaries and wages—	
1916	\$ 8,767,734 17
1917	9,451,685 31
1918	11,840,863 86
Salaries and wages were equal to 67.53 per cent of operating expenses.	

LAND GRANTS MADE TO RAILROADS OF DOMINION

The following table shows the grants of land made by the Dominion to Canadian railways, as published in the annual report of the Department of Railways and Canals:—

Name of Company.	Area earned Acres.
Alberta Railway and Irrigation Co., (formerly North West Coal and Navigation Co.)	1,114,368
Calgary and Edmonton Railway Co.	1,888,448
Canadian Northern Railway Co., (Ry. from point on C.P.R. to Hudson Bay)	2,624,128
Canadian Northern Railway Co., (formerly Lake Manitoba Railway and Canal Co.)	798,400
Canadian Pacific Railway Co.—Main Line	18,206,986
C.P.R., Pipestone Extension, Souris Branch	200,320
C.P.R., Souris Branch	1,408,704
Great North West Central Railway Co., (formerly North West Central Ry. Co.)	320,000
Manitoba and North Western Railway Co.	1,501,376
Manitoba South Western Colonization Railway Co.	1,396,800
Canadian Northern Railway Co., (formerly Manitoba and South Eastern Ry. Co.)	680,320
Qu'Appelle, Long Lake and Saskatchewan Railroad and Steamboat Co.	1,625,344
Saskatchewan and Western Railway Co.	98,880
Total	31,864,074

EXPORT TRADE WITH ITALY IS HIGHEST YET

Over \$13,000,000 Named in Preliminary Estimate Against \$3,000,000 for 1918 and \$600,000 Before the War.

IMPORTS ARE LOWER

It is impossible to estimate accurately from Italian Government returns as compiled at present the trend of trade between Italy and Canada, as in most cases Canada is classified under the heading "Other countries," whereas for fish imports the word "Canada" includes Newfoundland.

According to the Canadian Government preliminary statement of the trade of Canada, however, for the last fiscal year, it is evident that the value of Canadian exports to Italy are higher for that period than for any preceding fiscal year in the history of Canadian trade. The Canadian statistics both for exports and imports during the past six fiscal years are given hereunder, as quoted in the Trade and Commerce Bulletin:—

Canadian Exports to Italy.

Fiscal Year.	Value in dollars.
1913	605,719
1914	655,256
1915	1,840,910
1916	10,733,288
1917	11,226,051
1918	3,336,059
1919	13,181,514

Canadian Imports from Italy

1913	1,836,308
1914	2,147,365
1915	1,507,548
1916	966,746
1917	1,227,007
1918	771,187
1919	555,112

Industrial Value of Maple.

Maple is the most important hardwood used by Ontario's wood-using industries, over three-quarters of a billion feet board measure being used every year. Accidental forms with the grain curled and contorted, known as curly maple and bird's-eye maple, are common and are highly prized for decorative work. Maple does not grow in any quantity north of the 49th parallel of latitude in Ontario. The material is used in twenty-eight industries. The greatest quantities are used for hardwood flooring, furniture, and wood distillation, as stated in a bulletin issued by the Forestry Branch, Department of the Interior.

Government Railways Mileage.

The total train mileage of the Government-owned railways of Canada was 12,412,757 miles in 1916-17, and in 1917-18, 12,471,308 miles, an increase of 58,551 miles, as stated in the annual report of the Department of Railway and Canals.

For Artificial Limbs.

Willow is used exclusively for artificial limbs, on account of its lightness and toughness and the fact that it is unaffected by atmospheric changes, according to a bulletin on the subject of "Wood-Using Industries of Ontario," issued by the Forestry Branch, Department of the Interior.

Are you buying W.S. Stamps?

APPLE REPORTS GENERALLY ARE ENCOURAGING

Full Crops Both East and West Show Improvement Over Last Year According to Early Summary

PROSPECTS FAVOURABLE

Apple reports as received by the Department of Agriculture, Fruit Commissioner's Branch, are generally good.

Since the last report was published, prospects have improved in Nova Scotia and British Columbia. We are now estimating the Nova Scotian crop at one and a quarter million barrels, including all grades packed for export out of the province. As the local consumption is estimated at 200,000 barrels, that brings the total crop up to nearly one and a half million barrels exclusive of fruit used by evaporators, canning factories and cider mills. With the extension of the British apple embargo it is likely that a large portion of the crop will be exported. The Okanagan Valley crop is now estimated at 30 per cent larger than last year, as compared with the 25 per cent increase predicted in our last issue.

So far as Ontario is concerned, there is very little change to report. The principle feature is the almost unanimous report from all districts that Spys give better promise than any other variety. In the eastern part of the province the production is not likely to exceed that of last year and there is a comparatively large percentage of low grade fruit due to the development of scab. It is important to note, however, that most orchards which have been carefully sprayed are practically free. Prospects are more favourable in Prince Edward county than elsewhere in Eastern Ontario. Reports from Western Ontario are generally unfavourable. The drop has been unusually heavy, particularly on early varieties. Conditions in the Georgian Bay district are somewhat more favourable.

The following is a summary of reports received during the last week:

Nova Scotia.—Since our last report was published there has been some improvement in the prospects for the Annapolis and Cornwallis Valleys. Very favourable weather conditions and the somewhat unusual sizing up of the fruit have been the main causes for an increase in estimates of production. Even now, however, there is considerable variation in reports. It seems probable that the total output of apples for the province, i.e., green fruit packed for market, will be approximately 1,250,000 barrels. There is considerable scab in evidence, especially on Gravensteins, and the crop of this variety will not likely exceed that of 1918. The leading varieties are: King, Baldwin, Russet, Nonpareil, Spy and Ben Davis. Previous care in spraying, fertilizing and cultivating is showing up markedly. The drop has only been general in neglected orchards and certain varieties, such as Stark, Blenheim and Ribston, which are a failure in uncared for orchards, are a good crop where thorough attention has been given during the past few years. Although spraying has been very general, there is a fairly large percentage of low grade fruit, and our estimate of 1,250,000 barrels depends upon the demand for No. 3 apples.

New Brunswick.—There has been an unusually heavy drop of all varieties during the past month and some development of scab on Fameuse and McIntosh. Reports, however, continue to be favourable and there will be a very fair crop. The best varieties are: Duchess, Bishop, Pippin, Golden Russet, Ben Davis, Gano and Dudley. The crop is likely to be somewhat earlier than usual.

SOURCES OF EARNINGS OF CANADIAN RAILWAYS

The following table taken from the annual report on Railway Statistics, issued by the Department of Railways and Canals, shows the sources of the earnings of Canadian railways during the years 1917 and 1918:—

	1917.		1918.	
	\$	cts.	\$	cts.
Rail line—				
Freight	215,245,256	49	228,244,416	07
Passenger	61,290,290	07	67,089,362	62
Excess baggage	569,566	07	595,790	35
Sleeping cars	2,832,750	58	3,179,760	94
Parlour and chair cars..	268,875	33	262,576	39
Mail	3,169,910	97	3,288,733	75
Express	8,999,073	85	9,824,583	29
Other passenger trains.	72,110	40	64,024	66
Milk	538,486	82	550,416	08
Switching	2,380,706	18	2,917,752	37
Special service train ..	113,832	01	89,677	79
Other freight train ..	27,652	04	36,920	15
Water transfer	41,518	50	1,529	61
Totals	295,550,029	94	316,145,544	07
Water line—				
Freight	2,265,118	77	2,266,102	13
Passenger	1,841,356	53	432,537	50
Excess baggage	3,023	04	2,995	71
Other passengerservice.	1,743	10		
Mail	17,307	11	20,564	70
Express	55,957	82	25,476	65
Special service				
Other	158,804	93	Dr. 139,749	47
Totals	4,397,311	30	2,608,027	22
Incidental—				
Dining and buffet	3,026,048	70	3,336,808	34
Hotel and restaurant..	542,581	61	627,518	13
Station, train, etc., privileges ..	99,875	58	98,847	47
Parcel room	82,446	02	88,479	48
Storage—freight	247,132	61	342,772	95
Storage—baggage	77,134	48	85,052	19
Demurrage	1,526,214	72	1,936,611	52
Telegraph and telephone	328,295	29	281,167	59
Grain elevators	1,189,466	97	888,454	99
Stockyards	10,262	42	24,859	27
Rents of buildings, etc.	1,457,494	70	1,488,020	86
Miscellaneous	1,820,245	80	1,918,485	88
Totals	10,407,098	90	11,117,078	67
Joint facilities, Cr. bal. .			417,038	96
Gross earnings ..	310,771,479	16	330,220,149	95

Prince Edward Island.—The total crop will be approximately 75 per cent of average, with Wealthy and Wagener showing up better than other varieties. There is no serious development of scab reported and the fruit is sizing up well.

Quebec.—In the Montreal district McIntosh, Wealthy and Alexander are a full crop; Duchess, Transparent and Fameuse fair to good. Scab is developing rapidly and will be serious in unsprayed orchards. The total crop will average about 50 per cent more than last year. In the St. Hilaire district there is a fair crop of good quality in orchards that were not seriously injured during the winter of 1917-18. Reports from Abbotsford state that the June drop was quite heavy and prolonged. Scab has developed to some extent, but is not serious in sprayed orchards. Considerable dead wood is showing up in Fameuse, McIntosh and Golden Russet. The outlook for an average crop continues to be good.

ONTARIO.

The following reports have been received from points in eastern Ontario:—

Trenton.—Very little change since last report. There will be a medium crop, and the quality, except in unsprayed orchards, will be fair. Scab, however, is quite prevalent, and in orchards which have not been properly sprayed there is much low grade fruit. Spy and Wealthy are leading. A hailstorm on July 10 did considerable local damage.

Brighton.—The crop will be only about equal to last year, or 40 per cent

of normal. In uncared for orchards the fruit is about worthless, but carefully sprayed orchards are practically clean. Spys are leading, followed by Ben Davis and Stark. The crop of Russets and Baldwins is very light.

Cobourg.—The crop will be about equal to last year and the fruit is showing up well in cared for orchards. Russets are light; Ben Davis, Stark, Snow and Gano fair; Spys good.

Colborne.—There are some excellent Spy orchards of fine quality. The total crop will be approximately 50 per cent of normal.

Belleville.—Spys are from 35 to 50 per cent of an average crop and other varieties less. The fruit is developing well.

Oshawa.—The total estimate is 25 per cent of a full crop with Spys leading. All other varieties are very light and the June drop has been heavy. There is considerable scab in many orchards.

Bowmanville.—Apples are growing well and are of fair quality where properly sprayed. Hail has done some local injury, but this is not widespread. The crop will be somewhat below average.

Prince Edward County.—Weather has been very favourable during the past month and the crop is developing well. Reports show considerable improvement since July issue. At *Milford* there is a full crop of Spy and Snow; Stark and Ben Davis 75 per cent; Russet and Mann 20 per cent; other varieties 40 to 50 per cent. There is also a plentiful crop of Spy and Snow at *Waupoos*. Reports from *Wellington* place the crop at 65 per cent, with well sprayed orch-

ards practically clean. In the *Bloomfield* district there has not been so much improvement and the yield will not exceed 35 per cent of average. No change is reported in *South Bay*. Throughout this county there is very little good fruit in uncared for orchards and Spys give the best promise. Prospects are not quite so favourable at *Ameliasburg* and points on the Bay front as elsewhere in the county.

Iroquois.—The total crop will be about 40 per cent of average. Scab has developed seriously and has affected about 90 per cent of the fruit in unsprayed orchards; in sprayed orchards only 10 per cent of the fruit is marked.

The following is a summary of reports received from Western Ontario:

Lake Erie Counties.—The apple crop is practically the same as last year, with a larger percentage of Spys. At *Leamington* the weather has been extremely dry and prospects are poor. Early varieties are only 10 per cent of a crop and winter varieties 15 per cent.

Wellington County.—Prospects have diminished on account of a heavy drop. The quality is generally poor as spraying has been neglected.

Waterloo County.—The apple crop will be 60 per cent of average.

Ailsa Craig (Middlesex County).—The outlook is very unfavourable as there are practically no early apples and only a light crop of late varieties. Some orchards have a fair crop of Spy and Baldwin.

Ingersoll.—There is a good crop of excellent quality—75 to 80 per cent of normal. Other orchards are very wormy and the fruit has fallen badly.

Cambridge.—Inland from lake Huron the crop is not more than 10 per cent of average, but is better on the lake front. Spy, Cranberry and Blenheim are leading.

Burlington.—The crop is very light. Spys are leading with 25 per cent of an average crop, followed by Baldwin and Greening.

Georgian Bay District.—There is no change since our last report was published. Reports from *Collingwood* and *Thornbury* state that the crop will be over 50 per cent of average.

BRITISH COLUMBIA.

Vancouver Island.—The apple crop varies from medium to good. The best varieties are King, Duchess, Gravenstein, and Baldwin. In well-sprayed orchards there is practically no scab. There has been a very heavy drop partly due to cold weather at the time of blossom and partly to hot, dry weather during the past month.

Kootenay District.—The drop has been heavier than usual, due to prolonged hot weather. With favourable weather conditions the crop will be 15 per cent larger than last year. Spraying has been general and there is a larger percentage of clean fruit. McIntosh, King, Newtown, Spy and Jonathan are best. Some damage has been done by hail on the west arm of Kootenay Lake. The crop is developing well in Creston district and is of excellent quality.

Okanagan Valley.—The apple crop is now estimated at 30 per cent larger than last year, which is 5 per cent more than we predicted in our last issue. Wealthy, Jonathan and McIntosh give the best promise.

Large Increase in Fur Exports.

A considerable gain in the export trade in furs is shown in a report issued by the Dominion Statistics giving the trade of Canada for the past three years ending in June. In the twelve months ended June, 1917, the Dominion exported furs valued at \$5,734,725; in the year ended June, 1918, the value of the furs exported was \$9,188,763, and for the year ending June, 1919, the furs shipped out of Canada was \$14,847,604.

Auto Exports Increase.

According to a report of the trade of Canada for the twelve months ending June, 1917, 1918 and 1919, compiled by the Dominion Statistician, there has been a considerable increase in the number of motor cars exported from the Dominion. In the year ending June, 1917, 6,819 automobiles, valued at \$3,436,186, were exported from this country; in 1918, 9,232, valued at \$3,964,698, and in 1919, 14,649, valued at \$8,419,163.

WHEAT ACREAGE ESTIMATE IN THIRTY COUNTRIES

The following, showing the world's estimated acreage of wheat, is taken from the Agricultural Gazette, issued by the Department of Agriculture:—

Countries.	1919.	1918.	Five years' average 1909-13.
	Acres.	Acres	
Belgium.....	277,000	237,000	395,000
Denmark.....	125,000 (a)	141,000 (a)	114,000
Spain.....	11,317,000 (a)	10,230,000 (a)	9,548,000
France.....	11,779,000 (a)	11,360,000 (a)	16,161,000
Great Britain and Ireland.....	3,268,000 (a)	2,773,000 (a)	1,887,000
Italy.....	10,502,000 (a)	10,798,000 (a)	11,723,000
Norway.....	41,000	41,000 (a)	12,000
Sweden.....	378,000	378,000 (a)	235,000
Netherlands.....	143,000	143,000 (a)	138,000
Portugal.....	1,210,000	1,210,000	1,210,000
Greece.....	937,000 (a)	865,000	865,000
Switzerland.....	202,000	202,000 (a)	104,000
Russia-in-Europe.....	35,350,000	35,350,000	58,927,000
Roumania.....	3,200,000	2,750,000	4,576,000
Serbia.....	660,000	560,000	940,000
Bulgaria.....	2,040,000	1,750,000	2,910,000
Germany.....	3,547,000	3,547,000 (a)	4,769,000
Austria.....	2,100,000	1,800,000	3,012,000
Hungary.....	6,300,000	5,500,000	9,078,000
Canada.....	17,283,000 (a)	17,354,000 (a)	9,945,000
United States.....	71,526,000 (a)	59,110,000 (a)	47,097,000
India.....	23,415,000 (a)	35,497,000 (a)	29,218,000
Japan.....	1,362,000 (a)	1,458,000 (a)	1,196,000
Algeria.....	2,000,000	3,186,000 (a)	3,494,000
Egypt.....	1,200,000	1,286,000 (a)	1,315,000
Tunis.....	1,190,000	1,413,000 (a)	1,310,000
South Africa.....	900,000	953,000 (a)	744,000
Argentina.....	16,000,000	16,976,000 (a)	16,052,000
Australia.....	8,000,000	8,649,000 (a)	7,603,000
New Zealand.....	220,000 (a)	221,000 (a)	242,000
Totals.....	236,472,000	235,738,000	244,820,000

(a) Official figures. The figures for the five years' average are all official.

TOWN PLANNING AND HOUSING IN N.S.

Rural as Well as Urban Development is Provided For

The Nova Scotia Town Planning Act has been amended in accordance with suggestions made by the Town Planning Branch of the Commission of Conservation. The Act formerly required that town planning schemes or by-laws had to be prepared before 1918, but the war prevented this being done. Under the amendments made the period for compulsory preparation is extended to 1921. The Act has also been widened in scope to deal with rural as well as urban development. The model town planning by-laws of the province have been prepared for recommendation to the municipalities.

Nova Scotia has also passed a Housing Act to enable the province to take advantage of the Federal loan. A draft housing scheme is under consideration. In the investigations made into the housing shortage in Canada and the costs of building it has been found that conditions are worse in Halifax than in any other part of the Dominion, owing to the combined effects of exceptional prosperity and the destruction caused by the disaster of 1917. The Halifax City and County Schemes, covering five large areas, are well advanced in preparation, it is stated in the last issue of Conservation of Life, an official publication of the Commission of Conservation.

TOWN PLANNING AND HOUSING IN QUEBEC

In Quebec a Housing Act has been passed, a provincial housing scheme has been prepared and a Director of Housing has been appointed. The Quebec scheme conforms more strictly to the Federal scheme than the schemes in any other provinces. Practically all the recommendations of the Federal Government have been introduced into

the Quebec scheme in a mandatory form. The appointment of Dr. Nadeau as Director of Housing is significant of the importance which the province attaches to the promotion of housing schemes in the form of Garden Suburbs and with proper town planning provisions. For many years Dr. Nadeau has been an active worker for town planning and housing reform in Quebec.

Housing Commissions have been appointed in Montreal, Hull and other cities.

Although Quebec is the only eastern province without a Town Planning Act it has introduced town planning provisions in its housing scheme, and the intention is to pass a Town Planning

WORLD'S PRODUCTION OF BUTTER AND CHEESE

The table below, indicating the world's production of butter and cheese is taken from the Agricultural Gazette, published by the Department of Agriculture:—

Countries.	Year of official statistics (O) or private computations (P)	Butter.	Cheese.
		Lb.	Lb.
Denmark.....	O. 1914	257,487,000	55,116,000
France.....	P. 1914	286,601,000
Great Britain.....	O. 1907-08	102,162,000	64,044,000
Ireland.....	O. 1907-08	75,039,000 (a)	224,000 (a)
Italy.....	P. 1914	110,231,000	354,944,000
Netherlands.....	O. 1912	143,146,000	211,004,000
Sweden.....	O. 1916	62,265,000 (b)	28,510,000 (b)
Argentina.....	O. 1914	20,518,000 (b)	11,934,000 (b)
Canada.....	O. 1910	201,600,000	201,275,000
Chile.....	O. 1916	2,079,000	3,897,000
United States.....	O. 1909	1,619,406,000	320,530,000
Japan.....	P. 1910	231,000	15,000
South Africa.....	O. 1916	16,014,000	1,975,000
Australia.....	O. 1916	182,470,000	25,408,000
New Zealand.....	O. 1916	63,407,000	109,821,000

(a) Quantity made in factories only.
(b) Quantity made in dairies only.

Act at the next session of the legislature, as stated in Conservation of Life, issued by the Commission of Conservation.

CANADA'S STATUS IN FOOD PRODUCTION

Dr. C. A. Zavitz, Professor of Field Husbandry at the Ontario Agricultural College, has issued a statement which shows that, according to Danish experiments and estimates made in the United States Department of Agriculture, Canada produces per capita more food materials obtained from farm crops than any of the other principal countries of the world. The relative standing of these countries in this respect is shown in the following table taken from the *Agricultural Gazette*, issued by the Department of Agriculture:

Countries	Per cent per capita of food materials from farm crops.
Canada.....	100
Argentina.....	80
United States.....	64
Australia.....	35
German Empire.....	30
Austria-Hungary.....	29
France.....	25
Russian Empire.....	24
Italy.....	14
India.....	11
Great Britain and Ireland.....	8

Addition to S.C.R.

Sealed tenders addressed to the undersigned, and endorsed "Tender for addition to Soldiers' Civil Re-Establishment, Ottawa, Ont." will be received until 12 o'clock noon, Thursday, August 21, 1919, for the construction of an addition to the Office Building, Department of Soldiers' Civil Re-Establishment, Ottawa, Ont.

Plans and specification can be seen and forms of tender obtained at the office of the Chief Architect, Department of Public Works, Ottawa.

Tenders will not be considered unless made on the forms supplied by the Department and in accordance with the conditions set forth therein.

Each tender must be accompanied by an accepted cheque on a chartered bank payable to the order of the Minister of Public Works, equal to 10 p.c. of the amount of the tender. War Loan Bonds of the Dominion will also be accepted as security, or war bonds and cheques, if required to make up an odd amount.

R. C. DESROCHERS,
Secretary.

Department of Public Works,
Ottawa, August 9, 1919.

BRITAIN'S NEED IS OPPORTUNITY FOR CANADA

Last Year the British Market Was Short Nearly 170,000 Long Tons of Eggs

BIGGEST EGG IMPORTER

A glance at the European markets of pre-war days will help us to appreciate the problems that lie before us. At that time Britain was the heaviest European importer of eggs, while Germany, a close second in eggs, was the biggest importer of poultry. Over 50 per cent of Britain's egg imports came from Russia, the balance from over fifty other countries.

Many changes in trade movement have occurred during the war. The Canadian west has ceased to import eastern eggs and is now a producer. For a dozen years Canada's export of eggs to Britain had been dwindling while she catered to this home market, but in 1915 the first carload of western eggs came east and three years later, in 1918, over two hundred carloads of eggs came from the west. Canada is entering the export trade and this year's indications are for a large increase over the amount shipped in 1918, as stated in an article on egg and poultry market conditions in Europe, by W. A. Brown, Chief of Poultry Division, Department of Agriculture, in the *Agricultural Gazette*.

BRITAIN LARGEST IMPORTER.

Britain is still the biggest egg importer. Her present need is Canada's opportunity, and her need is great. In spite of the fact that Canada's egg production has speeded up, her exports to the United Kingdom during the war amounted to only 14 per cent of that country's requirements. Last year Britain was short nearly 170,000 long tons of shell eggs.

The withdrawal of Russia as an egg exporting country leaves the Dominion in a most favoured position for the British trade. With an improved system of grading and standardization Canada has established a guarantee for eggs bearing the name of "Canada," or "Canadian." Canadian eggs are in high repute on the British market.

Aside from the egg market Europe offers opportunities to the producer of dressed poultry. At the beginning of the present year the outlook for export trade in dressed poultry was dark for Canada. Poultry handlers had paid high prices for the product, but space could not be secured for its shipment. All space was under the control of the British Ministry of Shipping was reserved for the shipment of frozen meats. The situation was tense. The high prices offered in January were lower in February and March. Space was still unavailable and the States were waiting with their produce for the earliest opportunity of shipping. Through representations from the Department of Agriculture, and the High Commissioner's office in London, space was ultimately obtained and we have shipped nearly 1,000,000 pounds of dressed poultry to the British markets. The United States are now making shipments as well.

Canals are Free.

No tolls have been charged on any of the Dominion canals since 1903-4, as stated in the annual report of the Department of Railways and Canals for 1918.

War Savings Stamps not only save money but earn it.

WHERE CANADA'S COAL FIELDS ARE LOCATED

*Coal Areas in Various Parts
of the Dominion Described
in Report*

N.S. LARGEST PRODUCER

The following account of the coal resources of the Dominion, by provinces, is found in the introduction to the report of the Coal Trade of Canada, prepared by the Dominion Bureau of Statistics:—

NOVA SCOTIA.

In Nova Scotia are found the largest producing mines in Canada, namely, the coal seams of Cape Breton and Inverness counties in the island of Cape Breton and the fields of Pictou and Cumberland counties on the mainland. On the island of Cape Breton are situated the largest producing companies, namely, the Dominion Coal Company and the Nova Scotia Steel and Coal Company in the Sydney coal field and the Inverness mines in that county. The output of the Nova Scotia mines for the past few years has been as follows: 1915, 7,513,739; 1916, 6,911,995; 1917, 6,345,335. It will be noted that the above figures show a decrease due largely to the enlistment of miners and under-ground workers with the colours. While a large number of these men were replaced, the newcomers had not the experience of those who had left, and consequently were not able to maintain the output tonnage that had previously been recorded. The number of employees in the coal producing mines, surface and underground, in Nova Scotia, for a number of years past, are given in the Mines Report for the province as follows: 1913, 13,664; 1914, 14,638; 1915, 16,326; 1916, 13,124; 1917, 12,483.

One or two outstanding points may be noted with regard to the disposal of the province's coal tonnage. The consumption within the province itself has increased from 2,910,929 tons in 1913 to 3,226,481 tons in 1917; the coal sent to the province of Quebec shows a very marked falling off; the latter province receiving from Nova Scotia in 1914, 2,667,372 tons and in 1917 only 339,366 tons, a decrease of 2,328,006 tons. Among the factors that have been potent in the development of the Nova Scotia coal trade has been the amalgamation of coal areas whereby a large amount of capital was made available and modern methods and machinery for mining purposes were employed, thus multiplying the volume of output. The result has been that, under normal conditions, some of the mines have an output of coal equal to that of any other on the continent.

The tonnage devoted to bunkering purposes has very materially increased. In fact, the increase in the year 1916 over that of its predecessor was practically 50 per cent, and the year 1917 while showing a decline still led 1915 by 45,654 tons. This increase in bunker coal represents, of course, a large increase in the amount of shipping employed in our export trade, together with the requirements for the purpose of transporting troops sailing from Halifax and Sydney.

NEW BRUNSWICK.

The coal fields of New Brunswick have been known for many years, but they have not been developed to any great extent until within the last few years. The seams of coal are thin, not exceeding 32 inches in thickness, and in many places barely reaching 22 inches, but they lie in very close proximity to the surface.

From the economic point of view the Minto field is the most important, and is the field which is at present being

WHEAT PRODUCTION OF WORLD, 1918 AND 1919

The amount of wheat produced in the world this year is estimated by the table below, which also gives production of last year. It is reproduced from the Agricultural Gazette, issued by the Department of Agriculture:—

Countries.	1919.	1918.	Pre-war five years' average 1909-13.
	Bushels.	Bushels.	Bushels.
United States.....	1,161,000,000	917,100,000	686,697,000
Canada.....	282,105,000	189,075,000	197,118,000
Mexico.....	8,000,000(a)	8,000,000	8,480,000
Argentina.....	160,000,000(a)	184,270,000	147,071,000
Chili.....	12,000,000(a)	12,000,000	14,000,000
Uruguay.....	7,000,000(a)	8,000,000	6,519,000
Austria.....	40,000,000(b)	40,000,000	60,840,000
Hungary.....	104,000,000(b)	103,000,000	169,646,000
Belgium.....	8,000,000(b)	9,000,000	14,896,000
Bulgaria.....	34,000,000(a)	34,000,000	42,440,000
Denmark.....	5,200,000(b)	6,320,000	5,344,000
France.....	180,000,000(a)	233,784,000	317,639,000
Germany.....	80,000,000(a)	90,331,000	152,120,000
Greece.....	4,000,000(b)	8,000,000	4,320,000
Italy.....	160,000,000(b)	176,372,000	183,336,000
Herzegovina and Bosnia.....	1,500,000(a)	1,500,000	2,560,000
Netherlands.....	4,000,000(b)	4,823,000	4,896,000
Norway.....	800,000(b)	1,087,000	306,000
Luxemburg.....	500,000(a)	512,000	613,000
Portugal.....	6,400,000(b)	7,000,000	7,740,000
Roumania.....	70,000,000(a)	70,000,000	87,793,000
Russia-in-Europe.....	550,000,000(a)	475,000,000	624,620,000
Russian Poland.....	15,000,000(a)	12,160,000	21,930,000
Serbia.....	8,000,000(a)	8,000,000	13,800,000
Spain.....	138,398,000	135,710,000	130,447,000
Sweden.....	8,000,000(b)	9,003,000	7,769,000
Switzerland.....	6,000,000(b)	7,095,000	3,314,000
Cyprus and Malta.....	2,400,000(a)	2,400,000	2,400,000
Great Britain and Ireland.....	75,000,000(a)	93,178,000	59,640,000
India.....	276,526,000	379,829,000	359,035,000
Japan.....	25,000,000	25,593,000	24,166,000
Russia-in-Asia.....	110,000,000(a)	90,000,000	151,142,000
Persia.....	13,000,000(a)	13,600,000	13,600,000
Algeria.....	25,000,000(a)	35,000,000	34,998,000
Egypt.....	30,000,000(a)	32,555,000	34,814,000
Union of South Africa.....	5,000,000(a)	8,600,000	6,520,000
Tunis.....	6,614,000	8,451,000	6,230,000
Australia.....	90,000,000(a)	80,836,000	90,500,000
New Zealand.....	6,000,000(a)	6,265,000	7,070,000
Totals.....	3,718,443,000(a)	3,527,449,000	3,706,069,000

most extensively worked. The annual output of coal in New Brunswick for the past few years has been as follows: 1915, 126,923; 1916, 143,658; 1917, 189,668. This tonnage is, of course, small in comparison with that of the neighbouring province of Nova Scotia, but it will be seen that it has shown a marked increase due to the increased demand for coal. The coal itself from this field is of good quality and is consequently in demand for both industrial and domestic purposes. The method of working these thin seams when the surface or overburden extends over fifteen feet is to sink small shafts from which the coal is hoisted to the surface in mine cars holding about 800 pounds. A system of working has been devised to meet the logical conditions of these seams whereby a large percentage of the available coal is extracted. Where the overburden is light, the method of producing is known as "stripping." This method may be described briefly as removing the soil overlying the coal by means of a steam shovel as in the ordinary way of excavating in railroad construction. The coal, which is itself laid bare, is then loaded directly into railroad cars. This latter method of producing coal has been used more or less extensively in the recent past on account of the labour situation, as men accustomed to working in thin seams have been extremely hard to get, while with stripping operations inexperienced labour can be used and a much greater number of tons per man employed can be obtained. Even the difficulty of working during the winter months is to some extent being overcome.

MANITOBA.

As previously intimated, Manitoba lies within the zone which is practically de-

void of coal. The explorations of the Geological Survey of Canada have established the fact that there are no rock strata present in this area which contain workable seams of coal. During the past year, the province depended on Canadian mines for approximately 50 per cent of its supply of commercial coal drawing the balance from importations of United States coal. About 65 per cent of the United States coal consumed by the province was anthracite.

SASKATCHEWAN.

Saskatchewan has important coal fields situated in the lower part of the province, in close proximity to the international boundary line. The output of the mines in the province for the year 1917 was 360,623 net tons of coal, classed as lignite, which is used largely for local consumption. The province has unnumbered pockets of lignite, much of which is mined in a desultory fashion. There is, however, an important group of mines in the southwestern corner of the province, which, largely on account of freight rates on imported coal, are able to compete favourably within the province with coal coming in from the west or the south and east.

ALBERTA.

The province of Alberta is second in rank of the coal-producing provinces, having 566 coal mines in operation during the past year, the output of which totalled 4,863,414 net tons, an increase of 214,810 tons over the year 1916, establishing a record for this province. In addition to this tonnage, and that produced by Saskatchewan, the area comprising the three Prairie Provinces and head of the lakes imported from the United States 3,340,390 net tons of coal. In the producing mines of Alberta there

were employed in the year 1917 an average number of 6,047 men and boys underground, and 2,263 above ground, a total of 8,310. Alberta has been extremely fortunate in having within its boundaries coal fields of large magnitude, and comprising all grades and classes of coal, anthracite, bituminous and lignite. Mr. Dowling, of the Geological Survey, in his work in the Coal Fields and Coal Resources of Canada, estimates the available coal at 1,072,627,400 metric tons (1,182,571,708,500 net tons). Anthracite coal is mined at Bankhead, near Banff, by the Natural Resources Division of the Canadian Pacific Railway. Bituminous coal of the very best quality, practically equal to Welsh Admiralty, is mined at the Crowsnest Pass and other districts. The bituminous districts are at Canmore, Brazeau, Yellowhead Pass and Mountain park. Lignite is mined in twenty-seven districts of the province.

BRITISH COLUMBIA.

Coal was discovered in the province of British Columbia in the year 1835 at Squash on the Pacific slope and later near the present town of Nanaimo, on information given to the officers of the Hudson's Bay Company by the Indians. The first attempts at mining were made on a small scale. "The Douglas Seam" at Nanaimo was discovered in the year 1850 and, from this small beginning, the industry has developed and spread over the coal mining districts of Ladysmith and Nanaimo, and on the island of Vancouver at Cumberland and Comox.

The important coal areas at Fernie and other nearby points were reached by the Crowsnest Pass railway, as were subsequently the coal areas at Merritt. Other large coal fields are known to exist in this area and await future development.

The output of coal in British Columbia in the year 1917 was 2,676,760 net tons, a decrease of 107,089 net tons from the output of the mines for the year 1916. As in nearly all the coal-producing areas both in Canada and the United States, shortage of labour has been experienced during the war period, due to the fact that so many mine workers enlisted for overseas service, first in Canada and then in the United States.

Reference has already been made to shipments of Canadian coal to the United States. From the collieries of Vancouver island, the output for the year was 1,899,207 net tons, distributed as follows: Sold as coal in Canada, 324,969 tons; sold as coal in the United States, 576,697 tons; sold in other countries, 42,796 tons. Coming to the East Kootenay field, which includes the Crowsnest Pass districts, the figures show that the United States acquires a large bulk of the output from these mines, namely, sold as coal in Canada, 82,653 tons; sold as coal in the United States, 252,948 tons, out of a total of 617,961 tons. In addition to the foregoing, 278,589 tons were used in the province for the manufacture of coke.

B.C. Housing Act.

British Columbia is the only western province without a Town Planning Act, but it is intended that an Act will be introduced at the next meeting of the Legislature. A Housing Act has been prepared for the province and is now in operation. Hon. T. D. Patullo, Minister of Lands, is in charge of the administration of the Act, and it is likely that British Columbia will be able to show exceptionally good results in the promotion of better housing, as stated in Conservation of Life, issued by the Commission of Conservation.

Housing in Manitoba.

The Housing Act and the housing scheme of Manitoba are now law. Owing to the strike there has been some delay in starting operations in Winnipeg where the housing shortage is acute, according to Conservation of Life, issued by the Commission of Conservation.

War Savings Stamps pay 4½% compounded half-yearly.