

CANADA
DEPARTMENT OF MINES
MINES BRANCH

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THE
PRODUCTION OF COAL, COKE, AND PEAT
IN
CANADA

During the Calendar Years

1907 AND 1908



OTTAWA
GOVERNMENT PRINTING BUREAU
1909

ADVANCE CHAPTER OF THE ANNUAL REPORT ON THE MINERAL PRODUCTION
OF CANADA, DURING THE CALENDAR YEARS 1907 AND 1908.

(Tons used throughout this Report are short tons of 2,000 lbs., except where otherwise stated.)

COAL.

Ever since 1896, each year has shown a marked increase over the preceding one in the figures representing the annual tonnage of coal extracted from the Canadian mines, and not once has this growth suffered a set-back sufficient to show a decrease in the succeeding year. This is, of course, a natural consequence of Canada's development, not only industrially but also agriculturally, since the fuel for domestic uses in the prairie provinces is almost exclusively coal and lignite. As the growth of a country can be closely gauged by the increase in the production and consumption of coal, it may be interesting to point out that in 1874, which is about the earliest year for which we have a comparatively reliable record, the production of coal in Canada was 1,063,742 tons; it took twelve years of growth to double this annual production, and in 1886 we record 2,116,653 tons; this latter figure took another twelve years to double, and in 1898 we produced 4,173,108 tons; but at this point the rate of increase grows considerably, and six years later, in 1904, the 1898 figure of production is doubled and we record 8,254,595 tons. Four years later, in 1908, the increase is approximately 2,250,000 tons, showing a rate which is rather lower than for the previous few years, but if we consider that both 1907 and 1908 were unfavourable to the coal industry, it is not unlikely that in two or three years from now the annual production may be double that of 1904.

It is, moreover, to be noticed that the value of the production of *coal alone* in 1908 exceeded by nearly \$3,000,000 the value of the *total mineral production* of Canada during the year 1896.

In 1907, during the first part of the year, great activity prevailed in coal mining throughout the whole of Canada, but towards the latter part of that year, as well as the greater part of 1908, several causes contributed to a decrease in the operations of the collieries, among which were the financial and industrial depression which marked that period throughout America; labour troubles in the collieries which resulted in a decreased output, and a severe winter which in the spring of 1907, especially in the western provinces, materially impeded the means of transportation and paralyzed traffic, giving rise in many cases to very serious shortages of fuel for industrial and domestic uses.

The coal mined in Canada comprises the three varieties, anthracite, bituminous and lignite. The bituminous forms by far the largest proportion of the

output, being mined exclusively in the maritime provinces, in British Columbia, and in the Crownsnest Pass region of southwestern Alberta. It is, of course, difficult to draw any sharp lines of demarcation between the different varieties of coal, as the produce of some mines might be equally well placed in one or the other of the classes according to the classification adopted; but roughly speaking we may say that out of 11,000,000 tons produced in Canada in 1908, about 10,000,000 tons may be classified as being bituminous.

Only one mine works an anthracite coal seam. This is at Bankhead, near Banff, Alberta; but the output of this mine is larger than that of any one of the lignite mines of the province.

In the past, the anthracite and the lignite which are produced exclusively in Alberta and Saskatchewan, had been used mainly for domestic purposes; but lately the Alberta anthracite has entered the industrial field and is now used to some extent in gas producers. It is very probable that lignite will before long also be used industrially in the same way, as experiments conducted by the governments of both the United States and Canada show that it can very advantageously be used in this manner.

Table 1 shows that the production of coal in Canada in 1907 was 10,511,426 short tons, valued at \$24,381,842; and in 1908 it reached 10,886,311 tons, valued at \$25,194,573; these values being at the pit mouth. The production of 1907 shows an increase of 748,825 tons, or 7.67 per cent as compared with 1906. The increase in 1908 as compared with 1907 was lower, being only 374,885 tons, or 3.5 per cent; but considering the adverse industrial conditions which prevailed during the early part of 1908 these figures are still very gratifying.

It may be mentioned that in this report the word production applies to the amount of coal which is actually used, or sold by the producers, in contradistinction to output, which applies to the coal extracted from the mine. Some of this output goes to the stock on hand at the end of the year, and is taken into account in the following year's production.

COAL.—TABLE 1.

Production by Provinces, 1906-7-8, in tons of 2,000 lbs.

Province.	1906.		1907.		1908.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
Nova Scotia	6,220,505	\$11,108,044	6,354,133	\$12,764,999	6,652,539	\$13,364,476
British Columbia....	2,146,262	5,748 915	2,364,898	7,390,306	2,333,708	7,292,338
Alberta	1,246,360	2,614,762	1,591,579	3,835,236	1,685,661	4,127,311
Saskatchewan	108,398	164,146	151,232	252,437	150,556	253,790
New Brunswick....	34,076	68,152	34,584	77,814	60,000	135,000
Yukon Territory....	7,000	23,000	15,000	60,000	3,847	21,158
Totals	9,762,601	19,732,019	10,511,426	24,381,842	10,886,311	25,194,573

Table 2 gives comparisons of the coal production of the various provinces during the last three years, with increases and decreases in tons and percentages.

COAL.—TABLE 2.

Comparison of Production 1906 with 1907, and 1907 with 1908.

Province.	(i) INCREASE OR (d) DECREASE.			
	Years 1906 and 1907.		Years 1907 and 1908.	
	Tons.	Per cent.	Tons.	Per cent.
Nova Scotia.....	(i) 133,628	2.15	(i) 298,406	4.70
British Columbia.....	(i) 218,636	10.19	(d) 31,190	1.32
Alberta.....	(i) 345,219	27.70	(i) 94,082	5.91
Saskatchewan.....	(i) 42,834	39.52	(d) 676	0.01
New Brunswick.....	(i) 508	1.49	(i) 25,416	73.49
Yukon Territory.....	(i) 8,000	114.29	(d) 11,153	74.35
Totals for Canada.....	(i) 748,825	7.67	(i) 374,885	3.56

Table 3 gives the annual production of coal of Canada, with comparisons showing increases or decreases each year as compared with the preceding year.

COAL.—TABLE 3.

Annual Production showing the Increase or Decrease each year.

Year.	Tons.	Value.	Average Value per Ton.	Increase (i) or Decrease (d) in Tonnage.	Increase (i) or Decrease (d) per cent.
1785 to 1873.....	*8,534,455				
1874.....	1,063,742	\$1,763,423	\$1.66		
1875.....	1,039,974	1,747,016	1.68	(d) 23,768	(d) 2.2
1876.....	994,762	1,729,546	1.74	(d) 45,212	(d) 4.3
1877.....	1,036,670	1,794,415	1.73	(i) 41,908	(i) 4.2
1878.....	1,089,744	1,941,235	1.78	(i) 53,074	(i) 5.1
1879.....	1,126,497	2,050,639	1.82	(i) 36,753	(i) 3.4
1880.....	1,482,714	2,657,194	1.79	(i) 356,217	(i) 31.6
1881.....	1,537,106	2,688,621	1.75	(i) 54,392	(i) 3.7
1882.....	1,848,148	3,248,446	1.76	(i) 311,042	(i) 20.2
1883.....	1,818,684	3,109,635	1.71	(d) 29,464	(d) 1.6
1884.....	1,984,959	3,593,831	1.81	(i) 166,275	(i) 9.1
1885.....	1,920,977	3,417,807	1.78	(d) 63,982	(d) 3.2
1886.....	2,116,653	3,739,840	1.77	(i) 195,676	(i) 10.2
1887.....	2,429,330	4,388,206	1.81	(i) 312,677	(i) 14.8
1888.....	2,602,552	4,674,140	1.80	(i) 173,222	(i) 7.1
1889.....	2,658,303	4,894,287	1.84	(i) 56,751	(i) 2.1
1890.....	3,084,682	5,676,247	1.84	(i) 426,379	(i) 16.0
1891.....	3,577,749	7,019,425	1.96	(i) 493,067	(i) 16.0
1892.....	3,287,745	6,363,757	1.94	(d) 290,004	(d) 8.1
1893.....	3,783,499	7,359,080	1.95	(i) 495,754	(i) 15.1
1894.....	3,847,070	7,429,468	1.93	(i) 63,571	(i) 1.7
1895.....	3,473,344	6,739,153	1.94	(d) 368,726	(d) 9.6
1896.....	3,745,716	7,226,462	1.93	(i) 267,372	(i) 7.7
1897.....	3,786,107	7,303,597	1.93	(i) 40,391	(i) 1.1
1898.....	4,173,108	8,224,286	1.97	(i) 387,001	(i) 10.2
1899.....	4,925,051	10,233,497	2.09	(i) 751,943	(i) 18.0
1900.....	5,777,319	13,742,178	2.38	(i) 852,268	(i) 17.3
1901.....	6,486,325	12,699,243	1.96	(i) 709,006	(i) 12.3
1902.....	7,466,681	15,210,877	2.04	(i) 780,356	(i) 15.1
1903.....	7,960,364	15,942,833	2.00	(i) 493,683	(i) 6.6
1904.....	8,254,595	16,592,231	2.01	(i) 294,231	(i) 3.7
1905.....	8,667,948	17,520,263	2.02	(i) 413,353	(i) 5.0
1906.....	9,762,601	19,732,019	2.02	(i) 1,094,653	(i) 12.6
1907.....	10,511,426	24,381,842	2.32	(i) 748,825	(i) 7.7
1908.....	10,886,311	25,194,573	2.32	(i) 374,885	(i) 3.5

* The total production for the years 1785 to 1873 is made up as follows:—

Nova Scotia 1785 to 1873..... 8,053,670 tons of 2,000 pounds
 British Columbia 1836 to 1873..... 480,785 " " " "

The following table shows the proportionate contribution of each province to the grand total of the coal production of Canada at various times between the years 1874 and 1899, and yearly between 1899 and 1908.

Province.	1874.	1890.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Nova Scotia	91	71	64.2	62.9	64.4	69.4	71.3	68.0	65.5	64.07	60.79	61.40
New Brunswick												
*Saskatchewan			0.7	0.7	0.7	0.9	1.5	1.5	1.2	1.11	1.44	1.37
*Alberta		4	6.8	5.4	5.2	5.4	6.2	8.0	10.8	12.77	15.14	15.42
British Columbia	8	25	29.0	31.0	29.6	24.2	21.0	22.5	22.4	21.98	22.50	21.77
Yukon Territory					0.1	0.1	0.0	.....	0.1	0.07	0.13	0.04

* Alberta and Saskatchewan were established as provinces on September 1, 1905. For the purpose of comparison, the coal production during the years previous to that date has been separated according to the present boundaries of these provinces.

The figures of the above table bring out the steady development of the coal industry in the prairie provinces of Alberta and Saskatchewan. In 1900 these two provinces were only contributing a little over 6 per cent, whereas in 1908, their aggregate production represents 16.79 per cent of the total production of Canada.

The following tables give the statistics of exports of coal from Canada, taken from the Trade and Navigation Report. The United States constitutes the main market for coal exported, as 80 per cent of it was sent to that country. The exports of coal from Canada to the United States are made from Nova Scotia and British Columbia, each of these provinces contributing about an equal share.

Exports of Coal produced in Canada during 1906-7-8.

Exported to	1906.		1907.		1908.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
		\$		\$		\$
Great Britain	4,390	13,719	8,514	25,106	5,557	18,065
United States	1,587,249	4,104,676	1,691,016	4,273,370	1,885,223	3,564,390
Newfoundland	170,032	391,937	131,784	357,005	194,034	532,121
Other countries	73,370	228,115	62,760	218,583	145,019	546,801
Totals	1,835,041	4,738,497	1,894,074	4,879,564	1,720,833	4,661,377

COAL.—TABLE 4.

Exports.

CALENDAR YEAR.	PRODUCE OF CANADA.	NOT THE PRODUCE OF CANADA.	CALENDAR YEAR.	PRODUCE OF CANADA.	NOT THE PRODUCE OF CANADA.
	Tons.	Tons.		Tons.	Tons.
1873.....	420,683	5,403	1891.....	971,259	77,827
1874.....	310,988	12,859	1892.....	823,735	93,988
1875.....	250,348	14,026	1893.....	960,312	102,327
1876.....	248,638	4,995	1894.....	1,103,694	89,786
1877.....	301,317	4,829	1895.....	1,011,235	96,836
1878.....	327,959	5,468	1896.....	1,106,661	116,774
1879.....	306,648	8,468	1897.....	986,130	101,848
1880.....	432,188	14,217	1898.....	1,150,029	99,189
1881.....	395,382	14,245	1899.....	1,293,169	101,004
1882.....	412,682	37,576	1900.....	1,787,777	62,776
1883.....	486,311	44,388	1901.....	1,573,661	53,894
1884.....	474,405	62,665	1902.....	2,090,268	23,453
1885.....	427,937	71,003	1903.....	1,954,629	27,138
1886.....	520,703	78,443	1904.....	1,557,412	27,308
1887.....	580,965	89,098	1905.....	1,635,237	36,792
1888.....	588,627	84,316	1906.....	1,835,041	44,758
1889.....	665,315	89,294	1907.....	1,894,074	101,778
1890.....	724,486	82,534	1908.....	1,729,833	102,071

COAL.—TABLE 5.

Exports: Nova Scotia and British Columbia.

Calendar Year.	NOVA SCOTIA.		*BRITISH COLUMBIA.	
	Tons.	Value.	Tons.	Value.
		\$		\$
1874.....	252,124	647,539	51,001	278,180
1875.....	179,626	404,351	65,842	356,018
1876.....	126,520	263,543	116,910	627,754
1877.....	173,389	352,453	118,252	590,263
1878.....	154,114	293,795	165,734	608,870
1879.....	113,742	203,407	186,094	608,845
1880.....	199,552	344,148	219,878	775,008
1881.....	193,081	311,721	187,791	622,965
1882.....	216,954	390,121	179,552	628,437
1883.....	192,795	336,088	271,214	946,271
1884.....	222,709	430,330	245,478	901,440
1885.....	176,287	349,650	250,191	1,000,764
1886.....	240,459	441,693	274,466	960,649
1887.....	207,941	390,738	356,657	1,262,552
1888.....	165,863	330,115	405,071	1,605,650
1889.....	186,608	396,830	470,683	1,918,263
1890.....	202,387	426,070	508,882	1,977,191
1891.....	194,867	417,816	767,734	2,958,695
1892.....	181,547	407,980	599,716	2,317,734
1893.....	203,198	470,695	708,228	2,693,747
1894.....	310,277	633,398	770,439	2,855,216
1895.....	241,091	534,479	728,283	2,692,662
1896.....	380,149	787,270	679,799	2,507,752
1897.....	307,128	642,754	630,341	2,221,737
1898.....	309,158	629,363	813,843	2,948,428
1899†.....	459,260	827,941	781,809	2,947,369

* See foot-note, Table 16. † Since 1899, exports by provinces have not been published in Trade and Navigation report.

The following tabulation shows the disposal of the coal mined in Canada during the years 1907 and 1908, as compiled from the returns received from the producers:—

Distribution of Coal mined in Canada during the years 1907-8.

	1907.	1908.
Sales in Canada.....	7,358,135	7,715,203
Sales for export to United States.....	1,514,182	1,218,656
" " other countries.....	129,957	297,291
Total sales.....	9,002,274	9,231,150
Used by producers for the manufacture of coke.....	751,967	708,674
" " colliery consumption and workmen.....	757,185	946,487
Stock on hand January 1.....	212,559	183,443
" " December 31.....	190,224	230,335
Difference.....	- 22,335	+ 46,892
Loss due to washing, breakage or other causes.....	351,783	157,610
Total output.....	10,840,874	11,090,813

The imports of coal into Canada are given in Table 6. The coal dust column comprises the coal which goes through a $\frac{3}{4}$ " mesh screen.

COAL.—TABLE 6.

Imports of Coal into Canada.

BITUMINOUS COAL.			ANTHRACITE COAL.		COAL DUST.	
Fiscal Year.	Tons.	Value.	Tons.	Value.	Tons.	Value.
		\$		\$		\$
1880.....	457,049	1,220,761	516,729	1,509,960	3,565	8,877
1881.....	587,024	1,741,568	572,092	2,325,937	337	666
1882.....	636,374	1,992,081	638,273	2,666,356	471	960
1883.....	911,629	2,996,198	754,891	3,344,936	8,154	10,082
1884.....	1,118,615	3,613,470	863,600	3,831,283	12,782	14,600
1885.....	1,011,875	3,197,539	910,324	3,909,844	20,185	20,412
1886.....	930,949	2,591,554	995,425	4,028,050	36,230	36,996
1887.....	1,149,792	3,126,225	1,100,165	4,423,062	31,401	33,178
1888.....	1,231,234	3,451,661	† 2,138,627	5,291,875	28,808	34,730
1889.....	1,248,540	3,255,171	1,291,705	5,199,481	39,980	47,139
1890.....	1,409,282	3,528,959	1,201,335	4,595,727	53,104	29,818
1891.....	1,598,855	4,060,896	1,399,067	5,224,452	60,127	36,130
1892.....	1,615,220	4,099,221	1,479,106	5,640,346	82,091	39,840
1893.....	1,603,154	3,967,764	1,500,550	6,355,285	109,585	44,474
1894.....	1,359,509	3,315,094	1,530,522	6,354,040	117,573	49,510
1895.....	1,444,928	3,321,387	1,404,342	5,350,627	181,318	52,221
1896.....	1,538,489	3,209,025	1,574,355	5,667,096	210,386	53,742
1897.....	1,543,476	3,254,217	1,457,295	5,695,168	225,562	59,609
1898.....	1,684,024	3,179,595	1,460,701	5,874,685	229,445	45,556
1899.....	2,171,358	3,691,946	1,745,460	6,490,509	276,547	44,717
1900.....	2,439,764	4,310,964	1,654,401	6,602,912	330,174	98,349
1901.....	2,516,392	4,956,025	1,933,283	7,023,950	414,432	275,559
1902.....	3,047,392	5,712,058	1,652,451	7,021,939	489,548	264,550
1903.....	3,511,412	7,776,717	1,456,713	7,023,664	550,833	420,317
1904.....	4,053,900	9,108,208	2,275,018	10,461,223	608,041	544,128
1905.....	4,176,274	8,002,896	2,604,137	12,093,371	650,261	343,456
1906 *.....	4,495,550	8,360,348	2,200,863	10,304,398	747,251	489,180
Calendar Year.						
1907.....	6,370,152	13,232,445	3,141,873	14,506,129	1,139,256	1,219,949
1908.....	(a) 6,025,574	12,516,748	(b) 3,160,110	14,478,536	(c) 1,111,811	1,355,677

(a). Duty, 53c. per ton. (b). Coal, anthracite, and anthracite coal dust; duty free. (c). Duty 20 p.c., not over 13c. per ton.

† In the anthracite column the imports show a very considerable increase in 1888 over 1887, an increase of over 94 p.c., the falling off again in 1889 being quite as remarkable. The average values per ton for the three years 1887, 1888 and 1889, were \$4.02, \$2.47 and \$4.03 respectively. Although a duty of 50c. per ton on anthracite coal was removed May 13, 1887, it is hardly thought this would account for the changes indicated, and unless some error may possibly have crept into the Trade and Navigation report, no explanation is available.

In 1908 the total consumption of coal in Canada amounted to 19,351,902 short tons, made up as follows: 9,156,478 tons of coal produced in Canada, and 10,195,424 tons of imported coal. According to these figures Canada produces only 47.3 per cent of the coal which it consumes. It must be noted, however, that if all the coal mined in Canada had been used in the country, it would have constituted over 56 per cent of the consumption. In 1907 the figures were: total consumption, 19,166,855 tons, made up of 8,617,352 tons of Canadian coal, and

10,549,503 tons of imported coal, representing proportions of 45 per cent and 55 per cent respectively.

Consumption of Coal in Canada, 1907-8.

	1907.		1908.	
	Tons.	Tons.	Tons.	Tons.
Production, Table 3.....	10,511,426		10,886,811	
Exports of Canada, Table 4.....	1,894,074		1,729,833	
Home Consumption of Canadian Coal.....		8,617,352		9,156,478
Imports, Table 6.....	10,651,281		10,297,495	
Exports not produce of Canada, Table 4.....	101,778		102,071	
Canadian Consumption of Imported Coal.....		10,549,503		10,195,424
Total Consumption of Coal in Canada.....		19,166,855		19,351,902

The following table gives the statistics of the consumption of coal in Canada, and the respective proportions of imported coal and Canadian coal consumed in the country:—

COAL.—TABLE 7.

Consumption of Coal in Canada, 1886-1908.

Calendar Year.	Canadian.	Imported.	Total.	Percentage Canadian.	Percentage Imported.	Consumption per capita.
	Tons.	Tons.	Tons.			Tons.
1886.....	1,595,950	1,884,161	3,480,111	45·9	54·1	0·758
1887.....	1,848,365	2,192,260	4,040,625	45·7	54·3	0·871
1888.....	2,013,925	3,314,353	5,328,278	37·8	62·2	1·137
1889.....	1,992,988	2,490,931	4,483,919	44·4	55·6	0·946
1890.....	2,360,196	2,581,187	4,941,383	47·8	52·2	1·031
1891.....	2,606,490	2,980,222	5,586,712	46·7	53·3	1·153
1892.....	2,464,012	3,082,429	5,546,441	44·4	55·6	1·133
1893.....	2,823,187	3,110,462	5,933,649	47·6	52·4	1·198
1894.....	2,743,376	2,917,818	5,661,194	48·5	51·5	1·130
1895.....	2,467,109	2,933,752	5,400,861	45·7	54·3	1·066
1896.....	2,639,055	3,206,456	5,845,511	45·1	54·9	1·140
1897.....	2,799,977	3,124,485	5,924,462	47·3	52·7	1·143
1898.....	3,023,079	3,274,981	6,298,060	48·0	52·0	1·200
1899.....	3,631,882	4,092,361	7,724,243	47·0	53·0	1·454
1900.....	3,989,542	4,361,563	8,351,105	47·8	52·2	1·561
1901.....	4,912,664	4,810,213	9,722,877	50·5	49·5	1·810
1902.....	5,376,413	5,165,938	10,542,351	51·0	49·0	1·927
1903.....	6,005,735	5,491,870	11,507,605	52·2	47·8	2·055
1904.....	6,697,183	6,909,651	13,606,834	49·2	50·8	2·346
1905.....	7,032,661	7,343,880	14,376,541	48·9	51·1	2·396
1906.....	7,927,560	7,398,906	15,326,466	51·7	48·3	2·425
1907.....	8,617,352	10,549,503	19,166,855	45·0	55·0	2·946
1908.....	9,156,478	10,195,424	19,351,902	47·3	52·7	2·826

It is gratifying to note the very large increase in the consumption of coal per capita as shown in the last column of Table 7. From a little over three-quarters of a ton per year per head of the population in 1886, it had doubled to more than one and a half tons in 1900, and in 1907 it had reached the high figure of 2·946 tons.

It is interesting to note that the Mines Branch of the Department of Mines of Canada is at present conducting an important series of experiments on the coals and lignites of Canada. These tests are being carried on at McGill University on commercial samples of five to ten tons. They include boiler tests, gas producer tests, washing tests, coking tests and very extensive series of analyses. It is expected that the report will be issued in the latter part of 1909.

NOVA SCOTIA.

Tables 8, 9, 10, and 11, give the statistics of the coal industry in Nova Scotia. Table 8 shows that the coal production in 1908 was 6,652,539 tons valued at \$13,364,476, and that in the last few years there has been a steady increase in tonnage.

Table 9 gives the coal trade by countries. This brings out the fact that Cape Breton is responsible for over 7 per cent of the production of the province, and of this, 65 per cent is to be credited to the Dominion Coal Company.

COAL.—TABLE 8.
Nova Scotia: Output, Sales, Colliery Consumption and Production.

Calendar Year.	Output, Tons, 2,240 lbs.	Sales, Tons, 2,240 lbs.	Colliery Consump- tion, Tons, 2,240 lbs.	Production,* Tons, 2,240 lbs.	Output, Tons, 2,000 lbs.	Sales, Tons, 2,000 lbs.	Colliery Consump- tion, Tons, 2,000 lbs.	Production,* Tons, 2,000 lbs.	Price per Ton, 2,240 lbs.	Value of Production.
									\$	\$
1872.....	880,950	785,914	110,341	896,255	936,664	880,224	123,582	1,003,806	1 75	1,568,446
1873.....	1,051,467	881,106	108,398	989,504	1,177,643	986,839	121,406	1,108,245	1 75	1,731,632
1874.....	872,720	749,127	119,582	868,709	977,446	839,022	133,932	972,954	1 75	1,520,240
1875.....	781,165	706,795	124,110	830,905	874,905	791,610	139,003	930,613	1 75	1,454,084
1876.....	709,646	634,207	113,788	747,995	794,804	710,312	127,443	837,755	1 75	1,308,991
1877.....	757,496	687,065	98,841	785,906	848,396	769,513	110,702	880,215	1 75	1,375,339
1878.....	770,603	693,511	88,627	782,138	863,075	776,732	99,262	875,994	1 75	1,368,741
1879.....	788,271	688,624	84,787	773,411	882,863	771,269	94,961	866,220	1 75	1,358,469
1880.....	1,032,710	954,659	96,831	1,051,493	1,156,635	1,069,218	108,451	1,777,669	1 75	1,840,108
1881.....	1,124,270	1,035,014	107,888	1,142,902	1,259,183	1,159,216	120,834	1,280,050	1 75	2,000,079
1882.....	1,365,811	1,250,179	111,381	1,561,560	1,529,708	1,430,200	124,747	1,524,947	1 75	2,382,730
1883.....	1,422,553	1,297,523	111,949	1,409,472	1,593,259	1,453,226	125,383	1,578,609	1 75	2,466,576
1884.....	1,389,295	1,261,650	116,769	1,378,419	1,556,011	1,413,048	130,781	1,543,829	1 75	2,412,233
1885.....	1,352,203	1,254,510	127,624	1,382,134	1,514,470	1,405,051	142,939	1,547,990	1 75	2,418,735
1886.....	1,502,611	1,373,666	142,421	1,516,087	1,682,924	1,538,506	159,512	1,698,018	1 75	2,653,152
1887.....	1,670,830	1,519,684	139,777	1,659,461	1,871,330	1,702,046	156,550	1,858,596	1 75	2,904,057
1888.....	1,776,128	1,576,692	157,443	1,734,135	1,989,263	1,765,895	176,336	1,942,231	1 75	3,034,735
1889.....	1,756,279	1,555,107	158,131	1,713,238	1,967,032	1,741,720	177,107	1,918,827	1 75	2,998,167
1890.....	1,984,001	1,786,111	161,240	1,947,351	2,222,081	2,000,444	180,589	2,181,033	1 75	3,407,864
1891.....	2,044,784	1,849,945	174,983	2,024,928	2,290,158	2,071,938	195,981	2,267,919	1 75	3,543,624
1892.....	1,942,780	1,752,934	175,092	1,928,026	2,175,913	1,963,286	196,103	2,159,389	1 75	3,374,046
1893.....	2,223,042	1,977,543	205,425	2,182,968	2,469,807	2,214,348	230,076	2,444,924	1 75	3,820,194
1894.....	2,250,631	2,060,920	196,206	2,257,126	2,520,707	2,308,231	219,751	2,527,582	1 75	3,940,970
1895.....	1,999,756	1,798,098	193,639	1,986,737	2,239,727	2,008,270	216,875	2,225,145	1 75	3,476,790
1896.....	2,292,675	2,046,823	192,975	2,239,803	2,567,796	2,292,447	216,132	2,508,579	1 75	3,919,655
1897.....	2,340,031	2,044,672	181,716	2,226,388	2,620,835	2,290,032	203,522	2,493,554	1 75	3,896,179
1898.....	2,262,656	2,121,126	167,428	2,288,554	2,554,175	2,375,661	187,519	2,568,180	1 75	4,004,970
1899.....	2,565,443	2,633,989	177,460	2,811,449	3,209,296	2,950,067	198,755	3,148,822	2 00	5,622,898
1900.....	3,298,791	2,998,737	236,563	3,235,300	3,694,646	3,358,585	264,951	3,623,536	2 50	8,088,250
1901.....	3,821,033	3,411,127	301,434	3,712,561	4,279,557	3,820,462	337,606	4,158,068	2 75	6,496,982
1902.....	4,725,480	4,229,120	379,198	4,608,318	5,292,538	4,736,614	424,702	5,161,316	2 00	9,218,636
1903.....	5,215,562	4,565,720	481,903	5,047,623	5,841,429	5,113,607	539,731	5,653,338	2 00	10,085,246
1904.....	5,131,985	4,551,740	444,904	4,996,044	5,747,823	5,097,949	498,292	5,596,241	2 00	9,993,288
1905.....	5,197,877	4,613,818	427,774	5,041,592	5,821,622	5,167,476	479,107	5,646,583	2 00	10,083,184
1906.....	5,844,813	5,093,131	460,891	5,554,022	6,546,191	5,704,307	516,198	6,220,505	2 00	11,108,044
1907.....	5,775,503	5,062,351	611,012	5,673,333	6,468,563	5,669,800	681,333	6,354,133	2 25	12,764,999
1908.....	6,076,330	5,224,787	576,509	5,939,767	6,805,489	5,951,761	645,690	6,652,539	2 25	13,364,476

* This production is obtained by adding sales and colliery consumption. For sales previous to 1872, see report of the Department of Mines, Nova Scotia, 1883, page 51.

COAL.—TABLE 9.

Nova Scotia: Coal Trade by Counties, Calendar Years 1906-7-8.

Calendar Year.	Cumberland.		Pictou.		Cape Breton.		Other Counties.	
	Raised.	Sold.	Raised.	Sold.	Raised.	Sold.	Raised.	Sold.
	Short tons.	Short tons.	Short tons.	Short tons.	Short tons.	Short tons.	Short tons.	Short tons.
1906.	659,734	566,308	769,496	657,310	4,804,407	4,221,293	312,554	259,396
1907.	476,828	397,579	759,476	627,024	4,194,774	3,730,651	353,425	307,049
1908.	662,157	530,648	849,802	678,026	4,840,653	4,267,346	452,877	375,742

In the Pictou field the Acadia Coal Company have proceeded with the development of their new Allan shaft colliery. Two shafts, 130 feet distant, were sunk to cut all the workable seams of this district. The deeper of the two is over 1,500 feet. The intention of the Acadia Coal Company is to develop this colliery into the largest producer of the Pictou field.

In Cumberland county the Maritime Coal, Railway, and Power Company acquired the property of the Canada Coal Company, comprising the Joggins coal area, the Joggins mine and the railway connecting Joggins and Maccan on the Intercolonial. The old mine has been closed and a new one, entered by three slopes 2,500 feet long, has been started and was in shipping order at the close of 1908. The new mine is laid out and equipped for a possible production of 1,000 tons a day.

The Maritime Coal, Railway, and Power Company have, moreover, built a well equipped and modern power station at Chignecto, where part of the output of their mine is converted into electric power which is disposed of at Amherst, Maccan, and other points within a radius of about fifteen miles.

The power plant in the main consists of one 500 kilowatt generator, compound Robb engine and Robb boilers fired by Jones underfeed stoker.

Table 11, which follows, is compiled from the returns made to the government of Nova Scotia, and is very interesting inasmuch as it shows the markets in which the coal production of Nova Scotia finds an outlet. It will be noticed that the province of Nova Scotia in 1907 consumed 36.51 per cent of its production, and 35.56 per cent in 1908. The decrease of these two years as compared with 1906, which figures in the table for 37.92 per cent, is probably due to the fact that the Bunker coal is included in that year, whereas in 1907 and 1908 it is given as a separate item of 4.05 per cent and 3.53 per cent respectively. The main market, outside of Nova Scotia, is the province of Quebec, which is supplied by the St. Lawrence route. The United States market shows a decrease from year to year since 1906, having figured for 14.78 per cent in that year; 12.21 per cent in 1907 and only 9.11 per cent in 1908.

COAL.—TABLE 11.
Nova Scotia: Distribution of Coal Sold.

Markets.	FISCAL YEARS ENDING SEPTEMBER 30.					
	1906.		1907.		1908.	
	Tons of 2,000 lbs.	Per Cent.	Tons of 2,000 lbs.	Per Cent.	Tons of 2,000 lbs.	Per Cent.
Nova Scotia—						
Transported by land.....	1,622,131	27·82	1,740,736	30·80	1,804,377	29·37
" " sea.....	589,026	10·10	322,773	5·71	380,332	6·19
Total, Nova Scotia.....	2,211,145	37·92	2,063,509	36·51	2,184,709	35·56
New Brunswick.....	487,068	8·35	478,363	8·46	571,570	9·30
Prince Edward Island.....	86,026	1·48	86,792	1·54	70,931	1·15
Quebec Province.....	1,948,014	33·41	1,914,743	33·88	2,293,352	37·33
Newfoundland.....	167,447	2·87	164,082	2·90	231,909	3·77
United States.....	862,148	14·78	690,269	12·21	559,592	9·11
West Indies.....			2,910	0·05		
Mexico.....			8,502	0·15		
St. Pierre.....					9,976	0·16
Bunker coal.....			229,121	4·05	216,554	3·53
Other countries.....	69,556	1·19	13,981	0·25	5,261	0·09
Totals.....	5,831,404	100·00	5,652,292	100·00	6,143,854	100·00

NEW BRUNSWICK.

The coal production of New Brunswick is derived from the Grand Lake coal field, in Queens county, where a comparatively large number of small mines—probably thirty or forty are intermittently operated. It is very difficult to obtain accurate figures of production from this province, but according to a reliable estimate made by the provincial authorities, the production in 1908 would be about 60,000 tons valued at \$135,000. This is a considerable increase over the previous year's production.

COAL.—TABLE 12.
New Brunswick: Production.

Calendar Year.	Tons.	Value.	Value per ton.	Calendar Year.	Tons.	Value.	Value per ton.
1887.....	10,040	\$ 23,607	\$ 2 35	1888.....	6,160	\$ 9,240	\$ 1 50
1888.....	5,730	11,050	1 93	1889.....	10,528	15,792	1 50
1889.....	5,673	11,733	2 07	1900.....	10,000	15,000	1 50
1890.....	7,110	13,850	1 95	1901.....	17,630	51,857	2 94
1891.....	5,422	11,030	2 03	1902.....	18,795	39,680	2 11
1892.....	6,768	9,375	1 39	1903.....	16,000	40,000	2 50
1893.....	6,200	9,837	1 59	1904.....	9,112	18,224	2 00
1894.....	6,469	10,264	1 59	1905.....	29,400	58,800	2 00
1895.....	9,500	14,250	1 50	1906.....	34,076	68,152	2 00
1896.....	7,500	11,250	1 50	1907.....	34,584	77,814	2 25
1897.....	6,000	9,000	1 50	1908.....	60,000	135,000	2 25

SASKATCHEWAN.

The coal consumption in Saskatchewan is mainly for domestic uses, as wood is scarce in the province. Owing to the conditions which prevailed during the early part of 1907, viz., a shortage of railway cars for coal shipments, accompanied by an unusually severe winter and heavy snowfall which paralyzed traffic, the province of Saskatchewan experienced a serious shortage of fuel during the first four months of 1907, which caused great inconvenience and suffering among the settlers and in the cities. However, the reaction which followed resulted in an increased output for 1907, during which stocks for the following winter were accumulated. It followed that the tonnage in 1908 shows a decrease of 676 tons as compared with the previous year. This, however, is abnormal, especially if we consider the large influx of new settlers who yearly assist in increasing the development and the population of the province.

Table 13, following, gives the statistics of the coal production of Saskatchewan since 1890. Saskatchewan was established as a province on September 1, 1905. For the purpose of statistics the coal production previous to that date is that of the area included by the present boundaries of the province.

COAL.—TABLE 13.
Saskatchewan: Annual Production.

Calendar Year,	Tons.	Value.	Average value per ton.
		\$	\$ c.
1890.....	200	200	1 00
1891.....			
1892.....	5,400	9,325	1 73
1893.....	8,325	12,485	1 50
1894.....	†15,051	15,153	1 01
1895.....	15,769	31,538	2 00
1896.....	16,706	25,059	1 50
1897.....	25,000	37,500	1 50
1898.....	25,000	37,500	1 50
1899.....	25,000	37,500	1 50
1900.....	40,500	60,750	1 50
1901.....	45,000	72,000	1 60
1902.....	70,400	112,640	1 52
1903.....	116,703	169,618	1 45
1904.....	124,885	187,021	1 50
1905.....	107,596	152,334	1 42
1906.....	108,398	164,146	1 51
1907.....	151,232	252,437	1 67
1908.....	150,556	253,790	1 69

† Including a small quantity from the Turtle Mountain district, Manitoba.

Another noteworthy feature of the coal industry in Saskatchewan in 1907 and 1908 was the attempt of the government of Saskatchewan to go into the coal mining industry. The following paragraph concerning this venture is quoted from official information received at this office: 'The mine is located in township 32, ranges XX and XXI, west of the 3rd meridian. In this area eight bore-holes

were made, ranging in depth from 114 to 246 feet. In range XX one bore-hole failed to show any appearance of coal, while the other bore-holes in this range showed only slight traces of coal in thin layers. In range XXI, however, the bore-holes showed that coal appeared in seams ranging from 1 to 6 feet in thickness. A shaft has been sunk and cribbed almost to the bottom. The cribbing was reported, however, to be in very poor shape.

'During 1908, the year following the above report, a shaft was sunk, and it was discovered that the bore-holes had crossed the seams of coal in a diagonal direction, and that the coal thickness of the seams was only about 50 per cent of what had been reported. Operations were carried on for a short time but were discontinued.'

ALBERTA.

In 1908 the coal production of Alberta was 1,685,661 tons, an increase of 441 per cent over the production of 1900, which was 311,450 tons. This remarkable growth is a natural consequence of the development of the province, both agriculturally and industrially. A noteworthy feature of the coal industry of Alberta is that only 6 per cent of the production is exported, so that 94 per cent of the coal mined in the province is consumed in Canada. The product of the coal mines of Alberta may be roughly divided into 32 per cent lignite, and 68 per cent bituminous and anthracite.

In 1908 we have only a comparatively small increase to record as compared with 1907. This is due to several unfavourable causes which militated against the coal industry. The industrial depression that prevailed over the whole of the north American continent, not only affected the smelting industry of British Columbia, which was an important outlet for the bituminous coal of southwestern Alberta, but diminished immigration; and this, as well as some labour troubles, contributed to cause a slight check in the very high rate of increase which has prevailed in Alberta for the last ten years. This, however, is only temporary, and it may safely be expected that 1909 will show a considerable increase over 1908.

Table 14, following, gives the figures of the annual production of coal in Alberta since 1887. For the years previous to 1905 the production is that of the territory inclosed by the present boundaries of the provinces.

COAL.—TABLE 14.

Alberta: Annual Production.

Calendar Year.	Tons.	Value.	
		\$	\$ c.
1887.....	74,152	157,577	2 13
1888.....	115,124	183,354	1 59
1889.....	97,364	179,640	1 85
1890.....	128,753	198,298	1 54
1891.....	174,131	437,243	2 51
1892.....	178,970	460,605	2 57
1893.....	230,070	586,260	2 55
1894.....	184,940	473,327	2 56
1895.....	169,885	382,526	2 25
1896.....	209,162	581,832	2 78
1897.....	242,163	630,408	2 60
1898.....	315,088	788,720	2 50
1899.....	309,600	774,000	2 50
1900.....	311,450	778,625	2 50
1901.....	340,275	850,687	2 50
1902.....	402,819	960,601	2 38
1903.....	495,893	1,117,541	2 25
1904.....	661,732	1,404,524	2 12
1905.....	931,917	1,993,915	2 14
1906.....	1,246,360	2,614,762	2 10
1907.....	1,591,579	3,836,286	2 41
1908.....	1,685,661	4,127,311	2 45

On July 4, 1907, the Board of Railway Commissioners for Canada issued the following order amongst others: 'No railway company subject to the legislative authority of the parliament of Canada shall burn lignite coal on its locomotive engines as fuel for transportation purposes, until such time as the Board shall otherwise order or direct. Lignite coal includes all varieties of coal, the properties of which are intermediate between wood and coal of the older formations. Every such railway company burning or permitting to be burned lignite coal on its locomotive engines in contravention of the regulation herein in this behalf shall be subject to a penalty of twenty-five dollars.

'This regulation shall take effect and be operative on and from the first day of September, 1907.

'This regulation shall not have effect during the months of December, January, February or March in any year.'

This ruling, which is a preventive measure against fire set by sparks issuing from locomotives, affects the coal mined east of Macleod on the Crows Nest line of the Canadian Pacific railway; east of Cochrane on the main line of the railway and all along the Macleod, Calgary and Edmonton sections of the Canadian Pacific railway, as well as the lignite of the Edmonton district.

The following figures concerning the classified coal output of Alberta are quoted from the report of the provincial inspector of mines for 1908. There is a slight difference between this total and that compiled from the returns received at this office, owing to the fact that the figures of production compiled by this department represent the amount of coal which is actually used or finds its way to the market, whereas the figures of the provincial report are those of the coal extracted from the mines, some of which goes to the stock piles, and a part is lost in preparing for market.

CLASSIFICATION OF OUTPUT OF COAL IN ALBERTA DURING THE
YEAR 1908.

	Tons.
Lignite coal.	584,334
Bituminous coal.	1,011,571
Anthracite coal.	249,095
Coal used in coke production.	128,397
Coke produced.	75,657
Briquettes produced.	36,261

It may be here mentioned that the anthracite is very carefully prepared for the market and divested of all its friable parts. As a result, a large proportion of anthracite dust is produced. A part of this is manufactured into briquettes, which find a ready market for domestic use.

YUKON.

In 1908 the production of coal in the Yukon was much lower than in previous years. This is probably due to the fact that considerable stock was accumulated in 1907, which was drawn upon for domestic consumption in 1908.

COAL.—TABLE 15.

Yukon Territory: Annual Production.

Calendar Year.	Tons.	Value.	Average value per ton.
		\$	\$ c.
1901.....	15,864	86,230	14 70
1902.....	4,910	37,280	7 59
1903.....	1,849	29,584	16 00
1904.....			
1905.....	7,000	21,000	3 00
1906.....	7,000	28,000	4 00
1907.....	15,000	60,000	4 00
1908.....	3,847	21,158	5 50

† Part of this production was mined in 1900.

The average value of the coal given in the last column of the table represents the value of the coal at the mine. The price of the coal delivered at Dawson varies between \$12 and \$18 a ton.

In 1907 coal was mined in the Yukon in two fields, viz., in the Tantalus field on the Lewes river in southern Yukon, and on Coal creek, a small tributary of the Yukon, which joins the stream fifty-eight miles below Dawson.

The Tantalus field is the more important, as coal of a marked bituminous character exists there in large quantities, whereas the produce of the other field is lignitic in character.

There are at present two well established collieries in the Tantalus field, which supply the fuel for the steamers running between Whitehorse and Dawson; the coal is also used for domestic purposes, and for generating power in Dawson.

In 1908 the production came altogether from the Tantalus field.

BRITISH COLUMBIA.

Table 16 gives statistics of the coal production in British Columbia since 1836. It will be noticed that the output in 1908 shows a decrease of 107,671 long tons as compared with the previous year, which had the highest output ever recorded. But the coal which actually found its way to the markets or was consumed at the collieries, viz., home consumption and exports, which we give as the production for the year, showed a decrease in 1908 of only 27,848 long tons, considerable quantities having been drawn from stock piles.

In both 1907 and 1908 the main coal producers of British Columbia were the same as previous years, viz., the Crow's Nest Pass Coal Company, in East Kootenay; the Wellington Colliery Company, and the Western Fuel Company, both of the latter in the Vancouver Island fields. It is worthy of notice, however, that to these three companies, which were the only ones to ship coal in 1906, a number of other producing mines were added in 1907, when six companies made returns of shipments; and still more in 1908 when the number was further increased to nine.

In 1907 the production of coal in the province was 2,111,516 long tons, an increase of 195,211 long tons, or 10.18 per cent over 1906. This total was made up of 916,265 long tons used in Canada, 673,114 long tons exported as coal, (by far the greater part to the United States), 165,918 long tons for colliery consumption and local sales, and 356,219 long tons charged into the coke ovens. In 1908 the sales in Canada were 931,929 long tons, exports of coal 597,157 long tons, colliery consumption 174,950 long tons, and used for making coke, 379,632 long tons, a total of 2,083,668 long tons, which is 27,848 tons less than the production of 1907, or a decrease of 1.3 per cent.

The following tabulation shows the markets in which the British Columbia coal and coke were disposed of in 1907 and 1908:—

COAL.	1907.			1908.		
	Coast.	Crowsnest and Nicola Valley.	Total.	Coast.	Crowsnest and Nicola Valley.	Total.
		Long tons.			Long tons.	
Sold for consumption in Canada..	688,332	227,933	916,265	703,931	227,998	931,929
" export to United States..	359,666	291,410	651,076	300,445	266,829	567,274
" " other countries.	22,038	.....	22,038	29,883	.....	29,883
	1,070,036	519,343	1,589,379	1,034,259	494,827	1,529,086
		Short tons			Short tons	
Sold for consumption in Canada..	16,593	157,903	174,496	3,253	231,638	234,891
" export to United States..	.....	67,076	67,076	3,492	38,300	41,792
" " other countries.	.....	.....	.....	.....	.....	.....
	16,593	224,979	241,572	6,745	269,938	276,683

Table 16, following, gives the statistics of the coal production of British Columbia from the early days of the industry to the present.

COAL.—TABLE 16.

British Columbia: Production.

Calendar Year.	Output, Tons, 2,240 lbs.	Home Consumption, Tons, 2,240 lbs.	Sold for Export, Tons, 2,240 lbs. †	PRODUCTION.*		Price per ton, 2,240 lbs.	Value.
				Tons, 2,240 lbs.	Tons, 2,000 lbs.		
1836-52...	10,000				11,200	4 00	40,000
1852-59...	25,398				28,446	4 00	101,592
1859 §...	1,989				2,228	4 00	7,956
1860.....	14,247				15,957	4 00	56,988
1861.....	13,774				15,427	4 00	55,096
1862.....	18,118				20,292	4 00	72,472
1863.....	21,345				23,906	4 00	85,380
1864.....	28,632				32,068	4 00	114,528
1865.....	32,819				36,757	4 00	131,276
1866.....	25,115				28,129	4 00	100,460
1867.....	31,239				34,938	4 00	124,956
1868.....	44,005				49,286	4 00	176,020
1869.....	35,802				40,098	4 00	143,208
1870.....	29,843				33,424	4 00	119,372
1871-2-3..	148,459				166,274	4 00	593,836
1874.....	81,547				90,788	3 00	243,183
1875.....	110,145				109,361	3 00	292,932
1876.....	130,192				157,007	3 00	420,555
1877.....	154,052				139,692	3 00	419,076
1878.....	170,846				190,848	3 00	572,544
1879.....	241,301				232,390	3 00	697,170
1880.....	267,595				272,362	3 00	817,086
1881.....	228,357				229,514	3 00	688,542
1882.....	282,139				288,572	3 00	865,716
1883.....	213,299				214,353	3 00	643,059
1884.....	394,070				393,866	3 00	1,181,598
1885.....	365,596				333,024	3 00	999,072
1886.....	326,636				335,192	3 00	1,005,576
1887.....	413,360				434,859	3 00	1,262,165
1888.....	489,301				481,667	3 00	1,445,001
1889.....	579,830				568,249	3 00	1,704,747
1890.....	673,140				685,345	3 00	2,056,035
1891.....	1,029,097				1,009,176	3 00	3,027,528
1892.....	826,335				836,802	3 00	2,510,406
1893.....	978,294				976,768	3 00	2,930,304
1894.....	1,012,953				993,418	3 00	2,980,254
1895.....	939,654				944,683	3 00	2,834,049
1896.....	894,882				896,222	3 00	2,688,666
1897.....	802,296				910,170	3 00	2,730,510
1898.....	1,136,485				1,128,286	3 00	3,384,856
1899.....	1,306,324				1,277,769	3 00	3,833,307
1900.....	1,590,173				1,599,351	3 00	4,799,553
1901.....	1,631,557				1,713,829	3 00	5,141,487
1902.....	1,641,626				1,614,680	3 00	4,844,040
1903.....	1,450,663				1,496,948	3 00	4,490,844
1904.....	1,685,698				1,663,058	3 00	4,989,174
1905.....	1,736,696				1,737,010	3 00	5,211,030
1906.....	1,899,076				1,916,305	3 00	5,748,915
1907.....	2,219,602				2,111,516	3 50	7,390,306
1908.....	2,111,931				2,083,668	3 50	7,292,838

* This production is obtained by adding 'Home Consumption' and 'Sold for Export.'

† 52,935 tons of this amount were exported as sales without the division into 'Home Consumption' and 'Sold for Export.'

‡ The figures in the 'Sold for Export' column do not agree as they should with those given in Table 5, the only explanation being that the data in the two cases are from different sources, and it has not been possible to find out the cause of the difference.

§ Two months only.

The Crow's Nest Pass Coal Company continues to be the largest producer in the East Kootenay field. In 1908 the returns from this Company show that coal was shipped from their three collieries, situated at Michel, Coal Creek, and Carbonado respectively. This latter colliery was idle for some eighteen months during 1906 and 1907, but it has been reopened and shipments resumed.

One of the features of the year in the Crowsnest district has been the first shipment of coal from the Hosmer colliery at Hosmer, which was made in December, 1908. Development operations were begun in 1907 at this mine, and have been pushed actively since that time. The Hosmer Mines, Limited, have now an extensive colliery and plant, modern in all its details, designed for a daily output of 4,000 tons, which is expected to give a large production in 1909.

Another new company operating in this field has made returns of shipments, viz., the Corbin Coal and Coke Company, whose mine is on the south fork of Michel creek. This Company is also likely to have a large output in the near future. The Nicola Valley branch of the Canadian Pacific railway, which runs from Spences Bridge to the town of Nicola, was completed in the summer of 1907, giving access by rail to the coal mines of that region. The first shipment of coal from the mines of the Nicola Valley Coal and Coke Company was made in August, 1907.

The years 1907 and 1908 have been marked on the island of Vancouver by the opening of new collieries, and resumption of work on some which had been abandoned for a long time. In 1908, the mines from which shipments were made were: the Nanaimo and the Northfield mines of the Western Fuel Company; the Extension and Cumberland mines of the Wellington Colliery Company; the Fiddick Colliery of South Wellington Coal Mines, Limited; the Gilfillan Colliery of Macgowan & Co.; the New East Wellington Colliery of the Vancouver Nanaimo Coal Mining Company.

Besides the operation of mines which have reached the shipping stage, a great deal of prospecting work has been done throughout the year in coal fields which are yet in the prospective stages, such as the Upper Elk district; the vicinity of Princeton; Malcolm island; the Skeena district and others. There is no doubt that most of these will be heard from in the near future.

LABOUR AND ACCIDENTS.

We give below some tables and statements concerning labour employed during the year 1908 in the coal industry of the three main coal producing provinces of Canada, viz., Nova Scotia, Alberta, and British Columbia. The figures are compiled for the most part from the reports of the respective provincial governments.

NOVA SCOTIA.

*Employment Statistics of the Coal Industry, year ended September 30, 1908.

Company.	Method of Work.	Average number of days per month.	DISTRIBUTION OF COLLIERY WORKMEN.			Total Horses.	ACCESSORY OPERATIONS.			Approximate number employed at points of discharge.	Total Workmen.
			Surface.	Under-ground.	Cutting Coal.		Transportation.	Commercial.	Up-keep repairs, construction.		
Dominion Coal Co.	Bord and pillar	24 $\frac{1}{2}$	1,044	3,849	1,480	608	836	253	316	1,000	8,808
Nova Scotia Steel and Coal Co.	" "	26 $\frac{1}{2}$	258	686	680	90	225	65	20	50	1,984
" " Pictou	" "	24	20	50	41	1		4			115
Cumberland Railway and Coal Co.	" "	18 $\frac{1}{2}$	324	636	480	86	293	18		55	1,806
Acadia Coal Co.	Longwall, bord and pillar ..	25 $\frac{1}{2}$	403	534	507	78	8	18	134	24	1,673
Intercolonial Coal Co.	" "	24	1,016	422	295	37	20	5	5	3	1,766
Maritime Railway and Coal Co., Joggins	" "	24 $\frac{1}{2}$	10	8	6	6		4	123		151
" " Chignecto	Bord and pillar	23	38	61	53	8		4			156
Inverness Railway and Coal Co.	" "	26	122	303	289	32	74	6	40	16	850
Mabou and Gulf Coal Co.	" "	26	25	34	21	3	7	1	1		89
Sydney Coal Co.	" "	21	2	5	5	1		1	1		14
Mackay Mining Co.	" "	23	10	10	15			1	2		38
North Atlantic Collieries.	" "	20 $\frac{1}{2}$	55	75	74	22		4		173	386
Port Hood-Richmond Ry. and Coal Co..	" "	22	62	90	73	10		4			229
Great Northern Coal Co.	" "	26	12		24		3				39
Minudie Coal Co.	Longwall	21 $\frac{1}{2}$	33	36	92		4	2			167
Strathcona Coal Co.	" advancing	21 $\frac{1}{2}$	17	80	48	6		2			147
Atlantic Grindstone and Coal Co.	" "	22	2	2	4	1		1			9
The Colchester Coal Co.	Bord and pillar	22 $\frac{1}{2}$	12	6	8			2			28
		23 $\frac{1}{2}$	3,465	6,887	4,195	989	1,500	395	692	1,326	18,460

NOTE.—Distribution of workmen in accessory operations. 'Transportation,' including railways, shops, piers, banking station and all factors of transportation. 'Commercial,' including offices, (outside colliery offices) warehouses, stores and accounting. 'Construction,' includes all construction-men outside of colliery organization.

* Nova Scotia Department of Mines Report for 1908.

ALBERTA.

We were unable to obtain the details of the distribution of men employed in the Alberta coal mines. The number of workmen employed in the coal and lignite mines of Alberta in 1908, according to the report of the provincial inspector of mines was 3,780, of which 2,681 were employed underground, and 1,099 on the surface. We give below a schedule of the average wages which ruled for various classes of labour in the mines during the year. The day's work is eight hours underground and ten hours on the surface.

	Per day.
Fire bosses, rock miners, miners in wet places, blacksmiths, mine carpenters, power house engineers, machine men.	\$3 50
Tipple engineers, locomotive engineers (surface)	3 25
Machinists	3 20
Shot lighters, bratticemen, timbermen, drivers (wet places), team drivers, tracklayers, miners, machine men helpers, car repairers	3 00
Locomotive helpers (surface)	2 80
Timbermen helpers, drivers, tracklayer helpers, locomotive engineers (underground), switchmen, chute loaders, timber handlers, hoistmen, rope riders	2 75
Bratticemen, helpers, labourers (underground), couplers, pushers, pithead men, teamsters, blacksmith helpers, firemen, fanmen, lampmen, machinists' helpers	2 50
Outside labourers	2 00
Switch boys, slate pickers, car oilers, railway car handlers, etc.	\$1 25 to 2 25

BRITISH COLUMBIA.

The following tables are compiled from the Report of the Minister of Mines of British Columbia for the year 1908:—

Number of Hands employed in Coal Mining in British Columbia in 1908.

LABOUR.	COAST COLLIERIES— NICOLA VALLEY.		EAST KOOTENAY COLLIERIES.		Total.
	Under- ground.	Surface.	Under- ground.	Surface.	
Supervision and clerical assistance	48	52	52	36	188
Whites:—miners	1,130	769	769	682	1,899
miners' helpers	462	77	220	443	682
labourers	452	174	289	275	1,291
mechanics and skilled labourers	80	41	385	16	914
boys	136	37	31	8	224
Japanese	110	482	8	147	725
Chinese	235	3	8	3	147
Indians	3				3
	2,686	863	1,746	778	6,073

Average Daily Wages, Salaries, Etc.

	COAST DISTRICT.		EAST KOOTENAY.		NICOLA VALLEY.	
	Under-ground.	Surface.	Under-ground.	Surface.	Under-ground.	Surface.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Supervision and clerical.....			5.75-5.00	3.00-5.00		
Whites:—miners.....	3.30-6.50		3.00-3.75		4.50	
miners' helpers.....	2.86		2.50-2.75		2.50	
labourers.....	2.86-3.30	2.75	2.50	2.25		2.50-2.75
mechanics and skilled labourers.....	2.86-3.30	3.00-4.50		2.75-4.00		3.30-5.00
boys.....	1.10-2.45	0.50-1.65		1.25		1.00
Japanese.....						
Chinese.....		1.50-1.75		1.50		
Indians.....						

The returns of some of the important coal companies are not published in the Report of the Minister of Mines; therefore, the above figures do not necessarily represent the average of the wages paid by all the coal companies. However, they are believed to be nearly enough accurate to be of interest.

From the same sources we have compiled the following table:—

Accidents in Canadian Collieries during the year 1908.

Nature of Accident.	NOVA SCOTIA.			ALBERTA.			BRITISH COLUMBIA.		
	Fatal.	Serious.	Slight.	Fatal.	Serious.	Slight.	Fatal.	Serious.	Slight.
Fall of coal, rock.....	15	37	39	4	12	4	8	16	17
Gas or dust explosions.....	10			5	6	1	1		8
Explosives.....	1	2	6		2			2	4
Miscellaneous.....	15	31	62	2	18	8	9	32	23
	41	70	107	11	38	13	18	50	52
Total men employed.....		18,460			3,780			6,095	

For Nova Scotia the statement is for the year ending September 30, 1908; for the other provinces the calendar year is taken.

COKE.

In 1908 three provinces contributed to the production of oven coke of Canada, viz., Nova Scotia, Alberta, and British Columbia. From returns received the coal used in the manufacture of coke was 1,315,904 short tons, which gave an output of 852,296 tons of coke, or a yield of 64.7. Besides this yield of coke, some by-products are recovered from the ovens of the Dominion Iron and Steel Company at Sydney; these by-products are tar and ammonia. The ammonia gas is extracted from the oven gas and used in the manufacture of ammonium sulphate. The tar is sold to the Dominion Tar and Chemical Company, whose works are contiguous to the coke oven plant, and this product is further treated for the manufacture of refined tar, pitch of various grades, benzole, creosote, carbolic acid, etc. Returns of the production of these are not received at this office.

By provinces the production for 1907 and 1908 in tons of 2,000 lbs. was as follows:—

Coke Production, 1907.

Province.	Coal charged to Ovens.	Output of Coke.	STOCK ON HAND.		Coke sold or used.	Value of Sales, etc.
			Jan. 1.	Dec. 31.		
	Tons.	Tons.	Tons.	Tons.	Tons.	\$
Nova Scotia	832,916	529,851	845	6,586	524,110	1,991,047
Alberta.....	112,887	73,782	3,686	1,147	76,321	297,595
British Columbia....	398,864	249,663	1,745	9,836	241,572	1,294,826
Totals.....	1,344,667	852,296	6,276	17,569	842,003	3,583,468

Coke Production, 1908.

Nova Scotia	754,478	499,551	6,586	208	505,929	1,653,151
Alberta.....	128,398	75,657	588	600	75,645	309,019
British Columbia....	433,028	277,088	9,836	10,241	276,683	1,482,191
Totals.....	1,315,904	852,296	17,010	11,049	858,257	3,449,361

Tonnage of coke sold, or used in 1907 shows an increase of 59,948 tons, or 7.67 per cent, as compared with 1906; that used or sold in 1908 an increase of 16,254 tons, or 1.93 per cent as compared with 1907.

The statistics of the coke production as represented by coke sold or used since 1886 are given in the following table:—

COKE.—TABLE 1.
Annual Production, 1886-1908.

Calendar Year.	Tons.	Value.	Value per ton.
		\$	\$ cts.
1886.....	35,396	101,940	2 88
1887.....	40,428	135,951	3 36
1888.....	45,373	134,181	2 96
1889.....	54,539	155,043	2 84
1890.....	56,450	166,298	2 95
1891.....	57,084	175,592	3 08
1892.....	56,135	160,249	2 85
1893.....	61,078	161,790	2 65
1894.....	58,044	148,551	2 56
1895.....	53,356	143,047	2 68
1896.....	49,619	110,257	2 22
1897.....	60,686	176,457	2 91
1898.....	87,600	286,000	3 26
1899.....	100,820	350,022	3 47
1900.....	157,134	649,140	4 13
1901.....	365,531	1,228,225	3 36
1902.....	502,043	1,519,185	3 03
1903.....	561,318	1,734,404	3 09
1904.....	554,083	2,032,048	3 66
1905.....	700,488	2,436,211	3 48
1906.....	782,055	2,863,503	3 66
1907.....	842,003	3,583,468	4 26
1908.....	858,257	3,449,361	4 02

Table 2, which follows, gives the statistics of the coke production for the last eleven years, divided into provinces.

COKE.—TABLE 2.
Production of Coke by Provinces, 1897-1908.

Calendar Year.	NOVA SCOTIA.		BRITISH COLUMBIA.		ALBERTA.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
		\$		\$		\$
1897.....	41,532	90,950	19,154	85,507	.....	.....
1898.....	48,100	111,009	39,200	175,000	.....	.....
1899.....	62,459	178,767	38,361	171,255	.....	.....
1900.....	61,767	223,395	95,367	425,745	.....	.....
1901.....	222,694	590,560	142,837	637,665	.....	.....
1902.....	363,330	899,930	138,713	619,255	.....	.....
1903.....	371,745	888,094	189,573	846,310	.....	.....
1904.....	275,927	805,022	257,172	1,148,090	20,984	78,936
1905.....	386,366	1,054,712	269,256	1,202,035	44,866	179,464
1906.....	476,364	1,540,976	236,205	1,054,485	60,486	268,042
1907.....	524,110	1,688,070	241,572	1,049,432	76,321	297,595
1908.....	505,929	1,653,151	276,683	1,482,191	75,645	309,019

It will be noticed that in 1908 the tonnage of the coke production of Nova Scotia and Alberta, respectively, show a decrease. However, this was more than made up by an increase of production from British Columbia, making the total

for Canada for the year 16,254 tons in excess of that of 1907. The coke produced in Nova Scotia is used almost exclusively in blast furnaces for the smelting of iron ores. None of it is exported.

The smelting industries of southern British Columbia, and of the east coast of Vancouver island, constitute the main market for the coke produced in Alberta and British Columbia, consuming nearly 75 per cent of the total production, while some 25 per cent is exported for the use of similar industries in the United States. There is, of course, a small local consumption by foundries and for domestic use; but this accounts for only a very small percentage of the total.

Table 3 gives the exports of coke, which are all to the United States.

COKE.—TABLE 3.
Exports of Coke to the United States, 1897-1908.

Calendar Year.	Tons.	Value.
		\$
1897.....	2,987	6,07
1898.....	3,774	8,394
1899.....	5,557	18,726
1900.....	41,529	131,278
1901.....	57,505	176,990
1902.....	62,568	180,920
1903.....	32,608	135,957
1904.....	102,463	345,031
1905.....	116,071	509,908
1906.....	37,003	168,571
1907.....	70,617	320,357
1908.....	58,708	248,759

Coke is imported into Canada from the United States mainly to supply the iron and steel industries of Ontario. In 1908 these imports amounted to 619,269 tons. The figures for this year cannot be compared with those for 1907, as the latter, owing to the change made in the fiscal year, are only for nine months, from July 1, 1906, to March 31, 1909.

COKE.—TABLE 4.
Imports of Oven Coke, 1880-1908.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
		\$			\$
1880.....	3,837	19,353	1895.....	43,235	149,434
1881.....	5,492	26,123	1896.....	61,612	203,826
1882.....	3,157	36,670	1897.....	83,330	267,540
1883.....	3,943	38,588	1898.....	135,060	347,040
1884.....	11,207	44,518	1899.....	141,284	362,826
1885.....	11,564	41,391	1900.....	187,878	506,839
1886.....	11,868	39,756	1901.....	308,786	680,138
1887.....	16,110	56,222	1902.....	267,142	842,815
1888.....	25,487	102,334	1903.....	256,723	1,222,756
1889.....	29,557	91,902	1904.....	221,050	765,123
1890.....	36,564	133,344	1905.....	371,593	807,842
1891.....	38,533	177,605	1906.....	480,222	1,311,375
1892.....	43,499	194,429	1907*.....	400,536	1,132,680
1893.....	41,821	156,277	1908.....	619,269	2,166,036
1894.....	42,864	176,996			

* For nine months only.

Coke is manufactured from coal mined in five of the coal basins of Canada, viz., the Sydney field, the Pictou field, both in Nova Scotia; the Frank-Blairmore field in southwestern Alberta; the Crowsnest field in East Kootenay, and the Comox field on Vancouver island, both of the latter in British Columbia.

The following table shows the proportionate yield in coke from the coals of the various fields charged into the ovens. These percentages of coke produced relatively to the coal charged have been compiled from the returns of the last four years.

Year.	Sydney Field.	Pictou Field.	Frank-Blairmore Field.	Crowsnest Field.	Comox Field, Vancouver island.
1905	62.90	50.22	65.14	64.38	49.61
1906	63.65	53.41	66.74	62.29	33.90
1907	64.22	54.81	65.36	63.97	49.10
1908	66.42	55.81	58.92	65.08	49.73
Average*	61.42	52.84	63.68	63.97	47.15

*The average has been computed from the total coal charged during the four years and the total coke output resulting.

In the Sydney field the ovens used are all by-product ovens; whereas the coal of the Pictou field is made in bee-hive ovens. We may here mention that a certain amount of Springhill coal, Cumberland field, is mixed with this coal, which it has not been possible to separate to calculate the yield in coke.

In the Blairmore field both Belgian ovens and bee-hive ovens are used. On Vancouver island the coke is made in bee-hive ovens.

It may be interesting to point out that in this last field only the fine screenings are used in the manufacture of coke. This coal is thoroughly washed before being charged into the ovens, and the refuse resulting from this treatment often amounts to 50 per cent. This refuse is rejected, and only the washed coal is charged into the ovens. The yield is computed from the quantity of washed coal.

PEAT.

In 1907, returns of production of peat were received from only one company, viz., the Interwest Peat Fuel Company, which manufactured 50 tons, valued at \$200. This Company had just completed the installation of their plant and started operations when the buildings were destroyed by fire.

In 1908, the only production of peat fuel recorded was 60 tons, manufactured on the Anrep machine at Victoria Road peat bog, Victoria county, Ont., and which it is intended to use for experimental purposes at the fuel testing plant of the Department of Mines, Ottawa.

Sales of Peat during the past nine years have been reported as follows:—

	Tons.	Value.
1900..	400	\$1,200
1901..	220	600
1902..	475	1,663
1903..	1,100	3,300
1904..	800	2,400
1905..	80	260
1906..	474	1,422
1907..	50	200
1908..	60	180

A great deal of experimental work has been done in the past, and is at present being carried on, towards establishing the peat fuel industry on a sound basis in the Canadian provinces which are devoid of fossil fuel deposits.

The results obtained so far by individual experimenters have been disappointing, and although this industry is very successfully carried on in several European countries, it is yet in the initial stages in Canada after several years of trials.

The failures may be entirely ascribed to lack of knowledge of the properties, to the employment of impracticable methods of working, and to the choice of unsuitable bogs on the part of the peat companies.

Recognizing the great services that the successful establishment of this industry would render in the Canadian provinces, which have to rely on the United States for the greater part of their supply of fuel, the Mines Branch of the Department of Mines initiated two years ago a systematic investigation, which, it is hoped, will go a long way towards helping the successful exploitation of the peat bogs and the production of peat fuel from this source for industrial and domestic purposes.

In 1907, Mr. Erik Nyström was commissioned by Dr. Haanel, Director of the Mines Branch, to investigate the processes in use in Europe, and an exhaustive report on peat and lignite was published. This work was followed by the study

of several individual peat bogs, easy of access, favourably situated for a peat fuel market, or for disposing of power generated from the peat at the bog.

This report, which gives the results of the investigation of the Mer Bleue, Alfred, Welland, Newington, Perth, and Victoria peat bogs, was issued in the early part of 1909, and may be obtained by applying to the Director of Mines Branch, Department of Mines, Ottawa.

The following is a tabulated statement of the main results of this investigation:—

Ontario Peat Bogs.*

Location.	Mer Bleu Peat Bog. Tps. of Gloucester and Cumberland near Ottawa.	Alfred Peat Bog. Tps. of Alfred and Caledonia, Prescott County.	Welland Peat Bog. Tps. of Wainfleet and Humberstone, Welland County.	Newington Peat Bog. Tps. of Osnabrock, Roxborough, and Cornwall, Stormont County.	Perth Peat Bog. Tp. of Drummond, near Perth.	Victoria Road Peat Bog. Tps. of Bexley and Carden, Victoria County.	
Total area of bog.....Acres.	5,004	6,800	4,900	3,800	3,800	67	
Workable area 5 feet and over in depth..... "	3,440	5,414	3,465	2,913	3,162	31	
Area of maximum average depth..... {	347 acres, 16 ft. deep.	1,014 acres, 16½ ft. deep.	588 acres, 11 ft. deep.	120 acres, 26 ft. deep.	106 acres, 16 ft. deep.	3 acres, 15 ft. deep.	
Volume of workable peat.....Cubic yards.	38,442,494	70,270,200	30,796,480	46,566,478	38,445,222	402,441	
Tons of fuel, with contents, 25 p.c. moisture.....	5,125,655	9,369,000	4,106,000	6,208,800	5,126,000	53,000	
Average partial analysis of absolutely dry peat..	Fixed carbon.	25.35	25.39	25.20	26.27	24.97	25.18
	Vol. matter..	67.44	68.42	69.52	68.04	70.92	69.52
	Ash.....	7.37	6.18	5.28	5.69	4.10	5.30

* See Bulletin No. 1 (2nd Edition) Investigation of Peat Bogs, 1908-9, issued by Mines Branch, Department of Mines, Ottawa.

For the purpose of demonstrating the industrial applicability of peat fuel, the Mines Branch is at present erecting a testing plant, where peat will be used in gas producers for generating power. Any owners wishing to have their peat bog investigated and reported upon can communicate on the subject with the Director of the Mines Branch.

Moreover, it may be mentioned that the Mines Branch has secured, by purchase, part of the Alfred bog, which will be worked for the purpose of demonstration, and also for supplying peat fuel to the testing plant at Ottawa.

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no.45
1907-1908

CANADA. Mines Branch.
The production of
coal, coke and peat
in Canada.

DATE	ISSUED TO