

GEOLOGICAL AND NATURAL HISTORY SURVEY OF CANADA
ALFRED R. C. SELWYN, C.M.G., LL.D., F.R.S., DIRECTOR.

REPORT
ON THE
MINERAL STATISTICS
OF THE
DOMINION OF CANADA.
DURING THE YEAR 1886 AND PREVIOUS YEARS.

BY
E. COSTE.



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To ALFRED R. C. SELWYN, C.M.G., LL.D. F.R.S.,

Director of the Geological and Natural History Survey of Canada.

SIR.—I have the honor to submit herewith a statistical report on the mineral production of the Dominion of Canada during the calendar year 1886.

As the value of such reports is greatly enhanced by the promptness with which they are published, it is hoped that the report for 1887 will be ready at a much earlier date next year. The delay that has occurred in the present instance has been unavoidable, and is partly due to its being the first report of the kind, and partly to a good deal of my time having been occupied in 1886 by the examination and mapping of the Madoc and Marmora gold and iron-bearing districts of Ontario.

I am, Sir,

Your obedient servant,

E. COSTE.

JULY 15th, 1887.

NOTE.—Throughout this report the ton employed is of 2,000 lbs and the year the calendar year unless otherwise specified.

The fiscal year referred to in some tables begins on the first of July.

REPORT
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INTRODUCTORY.

I feel much obliged and thankful for the uniform courtesy shown us in the undertaking of this work, but as it would be too long to mention the names of all those who have kindly responded to our enquiries, I shall only testify in a general way to the very cordial co-operation and hearty assistance obtained in almost every case. Special thanks are, however, gratefully given to the Departments of Mines of Nova Scotia and British Columbia, from which all the returns of their respective provinces were obtained in advance. Special credit is also due to Mr. E. D. Ingall, my former colleague in this branch of the work of the Survey, but who has since been entrusted with the monographing of the various mining regions of the Dominion; and thanks are tendered him for his share in the organization of this work. ^{Acknowledgments.}

Special mention must also be made of the prompt and intelligent help afforded me by my assistant, Mr. H. P. Brumell, of the Geological Survey. Several days of tedious work having often been necessary for the preparation of a single table; the final result therefore gives no idea of the amount of labour that has been required.

The statistics of the quantities of minerals produced and of the value of each product, have been the special objects of all our enquiries. All technical information and descriptive matter of every kind which has been collected, bearing upon the present condition of the different

mining industries, or upon the history of the past operations in the various mining districts, has been carefully classified and recorded. It was intended at first, as mentioned in our circulars, to embody part of this information in the present report, but this was soon found to be impossible until more complete researches and studies, and personal examination had been made in the different districts. Under the circumstances, unavoidable gaps will be noticed; they have been pointed out wherever known, so as not to mislead as to the real value of the returns, and with the view of suggesting in the future assistance from those interested in the industries of which the present returns are unfortunately incomplete. This is specially true for the products, building-stones, bricks and lime, of which, on account of the very short time at our disposal to get correct lists of all the numerous persons interested in these industries, it has been possible to give only a compilation of such statistics as could be obtained; we were not even able to estimate fairly what the proportion of the quantities returned bore to the total production.

The general rule of taking the ton of 2,000 lbs. as the unit of quantity, has been adopted, and unless otherwise specified, the years are understood to be calendar years. This applies also to the tables of exports and imports, which were compiled from the books of the Customs Department at Ottawa, kindly placed at our disposal, with the greatest courtesy, by the Honorable the Minister and Mr. Barry, Chief Clerk of the Statistical branch of that Department. The exports and imports of some items have not been obtained, because separate returns of them are not kept by the Department of Customs, but changes in the future entries have been suggested to meet this, and have been readily assented to.

The endeavors to collect for preservation, in this office, all documents, plans and sections, referring to the extent and nature of the workings of the different mines of the country, will be continued, and already a good beginning has been made. Efforts will also be continued to ascertain, as accurately as possible, the history of all past mining operations, and information on this point is again particularly solicited.

Ton and year
adopted
through
report.

Records of
present and
past mining
operations.

SUMMARY OF THE MINERAL PRODUCTION OF CANADA IN 1886.

NAME OF PRODUCT.	1886.		
	Quantity.	Value. (a)	
Antimony ore..... tons	665	\$31,490	
Arsenic" "	120	5,460	
Asbestos" "	3,458 $\frac{1}{4}$	206,251	
Charcoal" bush.	901,500	54,000	
Chromic iron ore..... tons.	60	945	
Coal....." "	2,091,976	5,017,225	
Coke" "	35,396	101,940	
Copper (fine, contained in ore)..... lbs.	3,505,000	354,000	
Gold....." ozs.	76,879	1,330,442	
Graphite....." tons.	500	4,000	
Grindstones....." "	4,020	46,545	
Gypsum....." "	162,000	178,742	
Iron ore....." "	69,708	126,982	
Manganese ore....." "	1,789	41,499	
Mica....." lbs.	20,361	29,008	
Mineral pigments... {	Baryta" tons.	3,864	19,270
	Terra alba....." "	4,000	24,000
	Whiting....." bbls.	400	600
	Ochre....." tons.	350	2,350
Molybdenum (c)....." lbs.	150	156	
Petroleum (d)....." bbls.	486,441	437,797	
Phosphate....." tons.	20,495	304,338	
Pig iron (incomplete return)....." "	22,192	237,768	
Pyrites....." "	42,906	193,077	
Salt (e)....." "	62,359	227,195	
Silver (b)....." "	.....	209,090
Soapstone....." tons.	50	400	
Structural Materials. {	Granite....." "	6,062	63,309
	Marble and serpentine....." "	501	9,900
	Slate....." "	5,345	64,675
	Flagstones....." sq. feet.	70,000	7,875
	Building-stones....." cub. yds.	165,777	642,509
	Lime....." bush.	1,535,950	283,755
	Sands and gravels....." tons.	646,552	143,641
	Bricks....." M.	139,345	873,600
	Tiles....." M.	12,416	142,617
	Miscellaneous clay products....." "	112,910
Total .....	.....	\$10,529,361

(a) These figures give full values at the mines, quarries, etc.

(b) Port Arthur district production, plus about \$167,000 estimated silver contained in the copper pyrites of the Capelton district.

(c) Sold mostly as cabinet specimens.—Value for manufacturing purposes from 50 to 60 cts. a pound.

(d) Crude equivalent of the quantity of refined oils inspected.

(e) In barrels of 280 lbs.=445,421 bbls.

SUMMARY OF THE VALUE OF MINERALS EXPORTED BY PROVINCES.

CALENDAR YEARS.	ONTARIO.	QUEBEC.	NOVA SCOTIA.	NEW BRUNSWICK.	MANITOBA.	BRITISH COLUMBIA	PRINCE ED. ISLAND.	TOTAL.
1873.....	\$3,200,345*	\$219,304	\$1,047,445	\$218,928	.....	\$1,271,487	\$713	\$5,958,222
1874.....	955,820	142,208	760,658	233,833	.....	1,630,421	454	3,723,394
1875.....	657,926	318,055	498,464	117,251	.....	2,084,322	626	3,676,644
1876.....	949,645	374,868	358,764	104,469	.....	1,906,642	832	3,695,220
1877.....	437,308	355,270	459,830	153,564	\$341	1,719,066	.....	3,125,379
1878.....	828,669	255,215	385,104	156,903	174	1,652,687	45	3,278,797
1879.....	287,109	169,588	296,512	141,228	392	1,552,936	209	2,447,974
1880.....	280,488	396,753	712,177	159,990	.....	1,352,011	656	2,902,075
1881.....	243,598	367,682	606,634	150,984	941	1,403,777	335	2,763,951
1882.....	245,195	573,016	775,054	108,119	.....	1,222,424	5	2,923,813
1883.....	128,935	658,011	793,405	103,165	2	1,648,241	655	3,332,414
1884.....	239,323	792,300	885,162	75,367	1,500	1,549,481	193	3,543,326
1885.....	185,529	901,645	883,632	83,451	351	1,728,331	125	3,782,964
1886.....	186,574	809,661	1,010,240	101,349	1,452	1,720,939	606	3,830,821

* Large export of oil from Silver Islet.

This table is taken from the quarterly returns of the Custom's Department, and gives a fair idea of the results of mining operations in the different provinces since 1873, as a great part of the minerals produced is exported.

DISTRIBUTION OF THE VALUE OF THE MINERALS EXPORTED EACH FISCAL YEAR FROM 1874 TO 1886.*

Country to which exported.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.
Great Britain.....	383,832	159,464	2,379,472	1,061,201	142,374	265,305	216,867	253,652	311,456	443,831	519,672	485,408	589,832
United States.....	3,305,319	3,446,332	1,185,005	2,413,525	2,472,979	2,636,334	2,495,624	2,346,525	2,418,721	2,198,014	2,505,501	2,498,518	3,115,696
France.....	657	.....	.....	3,478	.....	3,478	.....	5,057	1,200	1,527	942	311	3,610
Germany.....	.....	.....	.....	.....	.....	6,050	.....	3,610	32,560	49,799	1,200	32,850	22,234
Holland.....	666	.....	.....	.....	.....	.....	1,040	.....	.....	650	.....	880	.....
Belgium.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,506	.....	.....
Spain.....	960	1,400	.....	.....	.....	.....	.....	4,620	330	.....	1,980	.....	860
Portugal.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,234	322
Sweden and Norway.....	.....	.....	.....	.....	.....	.....	.....	.....	9,000	.....	.....	939	.....
Denmark.....	.....	.....	.....	.....	.....	.....	.....	.....	1,750	1,000	.....	.....	.....
Russia.....	.....	.....	.....	.....	8,500	4,025	.....	.....	19,845	29,190	.....	.....	.....
China.....	.....	2,750	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,556
British East Indies.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Egypt.....	26,908	32,083	11,768	5,271	1,885	3,569	2,850	3,454	1,853	1,337	7,604	2,409	10,752
British West Indies.....	7,300	8,050	8,068	25,998	23,637	30,214	10,396	23,245	35,849	40,270	27,937	16,077	10,752
Spanish do.....	101,768	67,485	22,510	3,969	.....	.....	.....	986	1,602	429	.....	7,277	15,946
French do.....	.....	.....	.....	.....	.....	547	950	242	.....	.....	.....	.....	.....
Danish do.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
British Guiana.....	.....	.....	.....	.....	1,666	1,132	1,037	198	3,285	3,255	612	1,244	1,636
St. Dominique.....	660	405	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,465
Brazil.....	.....	1,317	.....	.....	.....	.....	.....	.....	700	239	.....	.....	.....
Argentine Republic.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	432	.....
Uruguay.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,277
United States of Columbia.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,500
Mexico.....	.....	.....	11,000	11,750	22,725	20,304	24,750	4,273	14,805	19,820	7,548	.....	.....
South America.....	11,183	12,428	6,464	325	1,200	7,731	.....	300	.....	.....	.....	.....	.....
Central do.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Newfoundland.....	125,863	133,841	145,314	110,285	117,623	93,264	97,232	94,390	104,537	141,897	133,332	155,251	146,128
St. Pierre.....	12,100	9,029	10,398	10,313	8,243	7,331	10,980	8,887	8,723	9,651	12,802	17,337	15,315
St. John.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Labrador.....	.....	.....	.....	.....	18	.....	.....	.....	.....	.....	.....	.....	.....
Sandwich Islands.....	.....	1,458	4,768	1,311	2,500	3,276	13,600	18,256	40,867	26,979	24,343	19,440	11,428
Australia.....	.....	.....	.....	.....	7,897	340	.....	.....	5,900	.....	.....	126	.....
British Africa.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morocco.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Russia in Asia.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Italy.....	.....	1,408	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	\$3,977,216	\$3,878,050	\$3,787,802	\$3,644,040	\$2,816,347	\$3,082,900	\$2,877,351	\$2,767,829	\$3,013,573	\$2,970,886	\$3,247,092	\$3,639,587	\$3,951,147

* From the Trade and Navigation Returns.

ABRASIVE MATERIALS.

Grindstones.

The total production has not been obtained. The returns which were made to this office give the production as 4,000 tons during the year, valued at the quarries at \$46,545. This we believe to represent about four-fifths of the actual production.

By Provinces, the above production is divided in the following manner:—

New Brunswick	{ 4 quarries in Gloucester County.	Tons.	Value.
		2,255	\$22,495
Nova Scotia.	{ 1 quarry in Cumberland Co. 1 quarry in Pictou Co.	1,765	\$24,050

The exports and imports are given below as well as the imports of emery and pumice stone:—

EXPORTS OF GRINDSTONES.

PROVINCES.	1884.	1885.	1886.
Ontario	\$ 298	\$	\$
Quebec	3	60	1
New Brunswick	16,183	13,404	14,784
Nova Scotia.....	11,702	9,142	9,400
Totals.....	\$28,186	\$22,606	\$24,185

IMPORTS OF GRINDSTONES.

PROVINCES.	1885.		1886.	
	Tons.	Value.	Tons.	Value.
Ontario.....	527	\$ 7,079	862	\$ 9,587
Quebec.....	278	3,032	222	2,718
Nova Scotia.....	...	44	...	69
Manitoba.....	12	384	30	832
British Columbia.....	8	604	18	488
Totals.....	825	\$11,143	1,132	\$13,694

IMPORTS OF EMERY AND PUMICE STONE.

PROVINCES.	1885.	1886.
Ontario.....	\$ 7,274	\$10,461
Quebec	5,731	3,225
Nova Scotia.....	515	103
New Brunswick	1,189	1,250
Manitoba	5	1
British Columbia.....	25	33
Prince Edward Island.....	30	12
Totals.....	\$14,769	\$15,085

Emery and
pumice stone.

ANTIMONY.

The total exports of Antimony ore in 1886, were 665 tons, the declared value of which was \$31,490. In 1885, the total exports were 756 tons, the declared value of which was \$33,250.

In 1886, The Brunswick Antimony Mining Co. of Lake George, York County, New Brunswick, resumed work, which had been suspended since November, 1883.

Preparatory work was also resumed at The South Ham mine, in the province of Quebec, during the summer of 1886. The Rawdon mine, Hants County, Nova Scotia, has been steadily worked since the end of the year 1883.

EXPORTS OF ANTIMONY ORE.

Years	ONTARIO.		QUEBEC (a.)		NOVA SCOTIA (b.)		NEW BRUNSWICK (c.)		MANITOBA.		TOTAL.	
	Tons.	Value.	Tons.	Value	Tons.	Value	Tons.	Value.	Tons.	Value	Tons.	Value.
1873	30	2,727	..	..	30	2,727
1874
1875
1876
1877
1878	71	4,500	....	.....	1	24	..	..	72	4,524
1879	8	300	....	.....	..	.....	..	..	8	300
1880	40	1,948	..	..	40	1,948
1881	34	3,308	..	..	34	3,308
1882	323	11,673	..	..	323	11,673
1883	2	30	163	4,170	..	..	165	4,200
1884	483	17,875	..	.....	(d) 3	,500	486	19,375
1885	(d) 2	3,000	..	..	756	33,250	..	.....	..	..	758	36,250
1886	645	30,690	20	800	..	..	665	31,490
Tot'	2	\$3,000	79	\$4,800	1,886	\$31,845	611	\$24,650	3	\$1,500	2,581	\$115,795

South Ham mine production.

(b.) Rawdon mine production.

(c.) Probably all Lake George mines.

(d.) These figures cannot be explained and are probably mistakes.

IMPORTS OF ANTIMONY.

Provinces.	1885.		1886.	
	Pounds.	Value.	Pounds.	Value.
Ontario	41,289	\$3,924	41,238	\$3,261
Quebec	41,095	3,521	46,470	4,037
Nova Scotia.....	80	9	724	60
New Brunswick...	708	70	76	7
Manitoba....	45	2	1	1
British Columbia..	.....	.....	77	8
Totals.....	83,217	\$7,526	88,586	\$7,374

ARSENIC.

The Deloro mine, in the county of Hastings, Ontario, is believed to have been the only mine in Canada producing arsenic, in 1886; 120 tons of refined, practically pure, arsenious oxyde was produced, with a total value at the mine of \$5,460. This arsenic is obtained as a by-product in the roasting of the auriferous quartz and mispickel of this mine; a refining operation in a reveratory furnace is needed. According to the Report of the Mineral Resources of the United States, 1885, published by the United States Geological Survey, there were shipped from this mine to the United States, in 1885, 400 tons of crude (90 to 95 arsenious oxyde) and 40 tons of refined, though it was only in operation from September until the end of the year.

The following table shows the imports of arsenic in 1885 and 1886:—

PROVINCES.	1885.		1886.	
	Pounds.	Value.	Pounds.	Value.
Ontario	7,567	\$219	12,741	\$351
Quebec	23,420	670	12,828	533
Nova Scotia.....	3,149	116	2,412	85
New Brunswick	300	16	....	....
Manitoba	25	1	200	10
British Columbia.....	60	9	....	....
Totals	34,521	\$1,031	28,181	\$979

ASBESTUS.

The total quantity shipped in 1886 has been 3,458½ tons, valued at \$206,251 at the mines. This is an increase over 1885 of 1,018 tons, and \$63,810. These returns were obtained directly from the mines, which are all situated in the Eastern Townships, province of Quebec, principally at Thetford and Coleraine. The yearly shipments since the time the first mine was opened in 1878 have also been compiled from direct returns, and are given in the following table, which illustrates the steady and very rapid growth of the industry:—

SHIPMENTS OF ASBESTUS FROM CANADIAN MINES.

YEARS.	Tons.	Value.
1879.....	300	\$19,500
1880.....	380	24,700
1881.....	540	35,100
1882.....	810	52,650
1883.....	955	68,750
1884.....	1,141	75,097
1885.....	2,440½	142,441
1886.....	3,458½	206,251
Totals.....	10,024½	\$624,489

COAL.

Summary.

The total quantity of bituminous coal which has been raised from the mines in Canada during the year 1886, is 2,091,976 tons of 2000 lbs., valued at \$4,017,225 at the mines. To this must be added a small unknown quantity from New Brunswick, the returns of which have not been obtained, on account of the desultory character of coal mining in that province.

The total exports of coal of all kinds during 1886 were 598,146 tons, of which 78,443 tons were foreign coal previously imported.

The imports for the year 1886 amounted to:—975,528 tons of anthracite; 1,024,702 tons of bituminous coal and 13,542 tons of coke.

Compared with that of 1885, the total production of Canada shows an increase in 1886 of about 140,000 tons and an increased spot value of about \$200,000.

In 1885, the total exports were 498,940 tons, of which 71,003 tons were imported coal.

Production
by Provinces.

The coal producing districts of Canada are in Nova Scotia, in British Columbia, and in the North-west Territory; a small quantity is also mined in New Brunswick around Grand Lake, in Queen's and Sunbury counties.

North-west
Territory.

The production of the mines in the North-west Territory was obtained through direct returns very willingly sent, the only mine not heard from being the Medicine Hat Mine. It amounted in 1886 to a little more than 43,000 tons, the Canadian Anthracite Coal Co., near Banff, N.W.T., having only done preparatory work during the latter part of that year with a force of 75 men.

The statistics of the production for the two provinces of Nova Scotia and British Columbia were kindly furnished us by the *Départments of Mines* of these provinces.

Nova Scotia.

Tables A, B, C & D, made up from tables sent us by Mr. Gilpin, the Inspector of Mines of Nova Scotia, give the details of the production and of the sales of coal in that province in 1886.

Table E, compiled from the reports of the Department of Mines, gives the yearly production since 1870.

PRODUCTION, SALES AND COLLIERY CONSUMPTION OF COAL IN NOVA SCOTIA DURING THE YEARS 1886, 1885, 1884 AND 1883.

TABLE A.

Period.	Production.	Sales.	Colliery Consumption.
1886—First quarter. Tons.	232,904	171,421	41,475
1886—Second do “	454,309	399,101	39,929
1886—Third do “	599,243	590,971	36,652
1886—Fourth do “	396,468	377,011	41,186
Totals..	1,682,924	1,538,504	159,512
1885..... “ ..	1,514,470	1,405,051	142,939
1884..... “ ..	1,556,010	1,413,048	130,781
1883..... “ ..	1,593,259	1,453,226	125,383

DISTRIBUTION OF NOVA SCOTIA COAL SOLD DURING THE YEAR 1886.

TABLE B.

Market.	Tons.
Nova Scotia:—	
Transported by land	303,950
“ by sea.....	211,515
Total.....	515,465
New Brunswick.....	197,028
Newfoundland.....	80,053
Prince Edward Island.....	55,068
Quebec.....	603,413
West Indies.....	12,728
United States.....	73,923
Other countries	827
Total.....	1,538,505

COAL TRADE BY COUNTIES IN NOVA SCOTIA DURING THE YEAR 1886.

TABLE C.

Year 1886.	CUMBERLAND.		PICTOU.		CAPE BRETON.		INVERNESS.		TOTALS.	
	Raised.	Sold.	Raised.	Sold.	Raised.	Sold.	Raised.	Sold.	Raised.	Sold.
First Quarter	103,664	96,327	80,085	67,534	48,937	7,355	219	205	232,905	171,421
Second "	112,413	106,330	123,630	103,960	218,266	188,810	....	....	454,309	399,101
Third "	137,959	124,920	145,711	138,341	315,572	327,710	....	....	599,242	590,971
Fourth "	148,419	138,640	115,156	103,473	132,893	134,898	....	....	396,468	377,011
Totals.	502,455	466,217	464,582	413,309	715,668	658,773	219	205	1,682,924	1,538,504

PRODUCTION OF COAL IN NOVA SCOTIA BY COLLIERIES DURING 1886.

TABLE D.

Cumberland
Co.

Cape Breton
Co.

Inverness
Co.

Colliery.	Seam.	Tons.
Chignecto	North	10,246
Joggins	Joggins	24,912
Lawrence.....	.....	56
Springhill.....	Main North and South..	466,781
Scotia.....	.....	460
Acadia } Albion } Vale } Acadia Comp'ny	Acadia	110,758
	Third and McGregor....	87,144
	McBean and Six Feet..	143,963
Intercolonial	Acadia	121,518
New Glasgow.....	.....	1,199
Barachois	Lingan	98
Blockhouse.....	Blockhouse	5,671
Bridgeport	Phelan	16,065
Caledonia	do.	81,547
Francklyn	Sydney	2,236
Glace Bay.....	Harbor	37,388
Gowrie	Gowrie	106,744
International	Harbor	132,305
Lingan	Lingan	19,811
Ontario	Phelan	9,630
Reserve	do.	91,596
Sydney	Sydney	156,403
Victoria.....	Victoria	56,174
Broad Cove.....	.....	118
Ross.....	.....	101
	Total.....	1,682,924

YEARLY PRODUCTION OF COAL IN NOVA SCOTIA SINCE 1870.

TABLE E.

YEAR.	TONS.
1870	700,861
1871	754,031
1872	986,664
1873	1,117,643
1874	977,446
1875	874,905
1876	794,803
1877	848,395
1878	863,081
1879	882,863
1880	1,156,635
1881	1,259,182
1882	1,529,708
1883	1,593,259
1884	1,556,010
1885	1,514,470
1886	1,682,924
Total...	19,152,880

British
Columbia.

The following table F is compiled from figures received from the Minister of Mines of British Columbia, and shows the details of the coal trade there in 1886.

COAL TRADE OF BRITISH COLUMBIA DURING THE YEAR 1886.

TABLE F.

Name of colliery.	Coal raised. Tons.	Sold for home consumption.		Sold for exportation.		On hand 1st January 1886.		Unsold, including coal in stock Jan. 1st 1887.		Number of men employed.
		Tons	cwt.	Tons	cwt.	Tons	cwt.	Tons	cwt.	
Nanaimo	112,761	33,260	15	79,637	8	1,019	13	882	10	490
Wellington ..	185,846	52,300		144,526		31,691		20,711		618
E. Wellington	28,029	427		25,042		1,500		4,060		161
Totals..	336,836	85,987	15	249,205	8	34,210	13	25,653	10	1,2

Table G shows the yearly output since 1874; the figures are taken from the reports of the Minister of Mines of British Columbia.

PRODUCTION OF COAL IN BRITISH COLUMBIA FROM 1874 TO 1886 INCLUSIVE.

TABLE G.

Year.	Tons.
1874.....	81,000
1875.....	110,000
1876.....	139,000
1877.....	154,000
1878.....	171,000
1879.....	241,000
1880.....	268,000
1881.....	228,000
1882.....	282,000
1883.....	213,000
1884.....	394,070
1885.....	365,000
1886.....	326,636

New
Brunswick.

The only official statistics of the production of coal in New Brunswick available, are those of the Census Returns, which give:—

Census year ending	{ Coal.....	4,502 tons.
2nd April, 1871.	{ Albertite.....	9,000 "
Census year ending	{ Coal.....	6,221 tons.
4th April, 1881.	{ Albertite.....	18,368 "

The following tables, 1 and 2, show the imports of coal, coke, coal-tar and pitch, and 3, 4 and 5 the exports of coal. They were compiled from figures furnished by the Bureau of Statistics of the Customs' Department. The exports of coal, the produce of Canada, from other provinces than those for which tables are given, are very small, but Ontario, Quebec and New Brunswick export some imported coal to the extent in 1886 of:—

Imports and exports.

	Tons.	Declared value.
Ontario.....	49,469.....	\$119,853
Quebec.....	20,342.....	38,092
New Brunswick.....	8,610.....	33,038

IMPORTS OF COAL & COKE DURING THE YEARS 1885 & 1886.

TABLE 1.

1885.						
Provinces.	ANTHRACITE.		BITUMINOUS COAL.		COKE.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
Nova Scotia.....	22,855	\$ 74,161	2,661	\$ 10,871	.....	\$.....
P. E. Island.....	1,891	6,231	99	206	.....	.....
New Brunswick.....	38,882	130,620	6,618	14,997	.....	.....
Quebec.....	254,744	934,629	100,414	183,078	1,682	5,118
Ontario.....	627,263	2,749,112	865,196	2,621,107	9,860	33,681
Manitoba.....	12,196	61,256	4	35	34	237
British Columbia....	258	3,113	612	4,223	253	1,041
Totals....	958,089	\$3,959,122	975,604	\$2,834,517	11,829	\$40,077

1886.						
Provinces.	ANTHRACITE.		BITUMINOUS COAL.		COKE.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
Nova Scotia.....	18,803	\$ 59,550	1,243	\$ 5,963	.....	\$.....
P. E. Island.....	1,747	4,975	36	71	.....	.....
New Brunswick.....	34,845	111,260	8,922	17,535	2	11
Quebec.....	267,286	957,740	75,864	136,468	2,132	7,510
Ontario.....	649,384	2,755,294,	937,988	2,541,140	11,140	38,406
Manitoba.....	3,437	15,800	60	289	163	1,150
British Columbia....	26	407	589	3,838	105	364
Totals....	975,528	\$3,905,026	1,024,702	\$2,705,304	13,542	\$47,441

IMPORTS OF COAL TAR AND COAL PITCH.

TABLE 2.

Provinces,	1885.		1886.	
	Barrels.	Value.	Barrels.	Value.
Ontario.....	6,534	\$8,918	6,732	\$10,716
Quebec	5,796	7,589	8,031	13,292
Nova Scotia	4,062	3,056	4,818	4,075
New Brunswick.....	1,295	2,260	1,869	4,209
British Columbia.....	28	136	18	108
Prince Edward Island.	497	889	304	667
Totals	18,212	\$22,848	21,772	\$33,067

EXPORTS OF COAL FROM NOVA SCOTIA, THE PRODUCE OF THAT PROVINCE.

TABLE 3.

Years.	NOVA SCOTIA.	
	Tons.	Value.
1873	368,249	\$980,534
1874	252,124	647,539
1875	179,626	404,351
1876	126,520	263,543
1877	173,389	352,453
1878	1 4,114	293,795
1879	113,742	203,407
1880	199,552	344,148
1881	193,081	311,721
1882	216,954	390,121
1883	192,795	336,088
1884	222,709	430,330
1885	176,287	349,650
1886	240,459	441,693
Totals..	2,809,601	\$5,749,373

EXPORTS OF COAL FROM BRITISH COLUMBIA, THE PRODUCE OF THAT PROVINCE.

TABLE 4.

Years.	Returns of the Dept. of Mines, B.C.	Returns of the Dept. of Customs', Ottawa.
	Tons.	Tons.
1874	56,038	51,001
1875	66,392	65,842
1876	121,284*	116,910
1877	115,381	118,252
1878	164,682	165,734
1879	192,096	186,094
1880	225,849	219,878
1881	189,323	187,791
1882	232,411	179,552
1883	149,567	271,214
1884	16,478	245,478
1885	237,797	250,191
1886	249,205	274,466
Totals.	2,306,503	2,332,403

* This quantity is partly estimated.

EXPORTS OF COAL FROM NEW BRUNSWICK, THE
PRODUCE OF CANADA.

TABLE 5.

YEARS.	New Brunswick.	
	Tons.	Value.
1873.	5,599	\$61,516
1874.	7,606	82,406
1875.	4,527	45,949
1876.	4,946	35,321
1877.	9,669	106,843
1878.	7,969	94,904
1879.	6,622	85,421
1880.	12,350	62,617
1881.	14,219	41,458
1882.	15,606	15,973
1883.	15,641	16,454
1884.	1,767	5,579
1885.	1,260	3,165
1886.	17	162
Totals	107,798	\$657,768

Coke. The quantity of coke manufactured in Canada in 1886 has been 35,396 tons, of about \$100,000 spot value; it was manufactured in Nova Scotia, and used there in the blast furnaces at Londonderry.

Charcoal. The quantity of charcoal manufactured in the county of Essex, Ontario, during the year 1886, is 901,500 bushels, which, at a value of 6 cents a bushel, represents a total value at the works of \$54,000. This charcoal is sold to iron works in the United States, at Detroit or Wyandotte; showing that this fuel could be manufactured in other parts of Ontario to supply Canadian iron works.

The production of charcoal in the county of Essex only has been returned, the addresses of other manufacturers not having been obtained.

COPPER.

There were in 1886, no copper works in operation in Canada, Summary, so that all the ores from the different mines have been exported for treatment abroad.

The total quantity of fine copper contained in the ore exported from the different mines of Canada during the year 1886 is estimated at about 3,505,000 lbs. This quantity of copper represents a value of about \$354,000. Besides this copper value, the greater part of these ores was also utilized in acid-making for the sulphur they contain in the state of iron pyrites (see the article on pyrites).

The fine copper contained in the ore exported from Canadian mines in 1885 is estimated to have been about 700,000 lbs. lower than in 1886.

The total imports of copper in 1886 have reached the value of \$259,615, of which \$196,846 were pigs, bars, ingots, old and other unmanufactured copper.

The exports of Canadian copper ore in 1886 were almost entirely Production by districts. from Quebec and Ontario: the quantity of ore exported from Quebec corresponding to a copper content of about 3,338,230 lbs., and the quantity from Ontario to about 164,040 lbs. In Quebec, nearly the whole is from the Albert and Crown mines of Capelton, county of Sherbrooke, from which there have been exported to the United States, 43,906 tons of ore with a copper content of 3,336,810 lbs. as per U. S. Customs returns; this gives about 3.8 as the average percentage of copper in the ore. The whole of the ore exported from Ontario has undoubtedly come from the Sudbury mines, the quantity being 3,307 tons, the declared customs value of which was \$16,404; work only began in the Sudbury district late in the year.

IMPORTS OF COPPER.
(From Customs Dept. books.)

PROVINCES.	1885.			1886.			Imports and exports.
	Pigs, bars, ingots, old, &c.		Manufactured.	Pigs, bars, ingots, old, &c.		Manufactured.	
	Pounds.	Value.		Pounds.	Value.		
Ontario	619,700	\$80,868	\$31,994	1,159,200	\$121,994	\$29,162	
Quebec	427,400	43,833	8,957	1,146,100	64,349	16,623	
Nova Scotia.	59,000	4,968	4,823	64,100	4,823	3,483	
N. Brunsw'k	28,100	3,165	3,370	66,200	4,547	4,123	
P. E. Island.	2,400	285	97	3,800	480	112	
Manitoba ..	100	5	7,198	.....	.....	4,763	
B. Columbia	9,600	1,385	7,453	4,400	653	4,503	
Totals..	1,146,300	\$134,509	\$63,892	2,443,800	\$196,846	\$62,769	

The above table shows the importations of copper in 1885 and 1886, and the following tables 1 and 2 give the exports from Ontario and Quebec; the exports from the other provinces having always been very small, no mention of them has been thought necessary. Table 3 shows that the copper contents and the declared value are too low in the Canadian Customs returns of exports of the Capelton ores at Stanstead, and points to the fact that the exports from Quebec given in table 2 have very probably been really greater throughout.

EXPORTS OF COPPER FROM ONTARIO AND QUEBEC.*
(From Trade and Navigation Returns)

TABLE 1.

Fiscal Years.	Quebec.	Ontario.	Total.
1860.....	\$182,112	\$283,952	\$466,064
1861.....	230,204	210,471	440,675
1862.....	151,184	250,468	401,652
1863.....	301,362	370,570	671,932
1864.....	92,048	478,407	570,455
1865.....	86,155	382,458	468,613
1866.....	25,109	187,940	213,049
1867.....	145,287	197,829	343,116
1868.....	....	....	394,190
1869.....	380,517	135,913	516,430
1870.....	269,757	....	269,757
1871.....	118,798	....	118,798
1872.....	102,210	....	102,210
1873.....	165,897	....	165,897
Total.....	....	....	\$5,142,838

* The exports from other Provinces are very small.

EXPORTS OF COPPER FROM ONTARIO AND QUEBEC.*
(From details furnished by Customs' Department.)

TABLE 2.

Calendar Years.	Quebec.		Ontario.		Total.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
1873.....	1,046,870	\$120,532			1,046,870	\$120,532
1874.....	932,866	111,727			932,866	111,727
1875.....	1,782,166	241,439			1,782,166	241,439
1876.....	1,882,491	249,971			1,882,491	249,671
1877.....	1,880,090	245,406			1,880,090	245,406
1878.....	355,160	36,499			355,160	36,499
1879.....	408,860	47,817			408,860	47,817
1880.....	1,434,700	192,171			1,434,700	192,971
1881.....	1,244,780	125,753			1,244,780	125,753
1882.....	1,864,170	182,502			1,864,170	182,502
1883.....	1,400,300	148,709			1,400,300	148,709
1884.....	2,714,400	273,422			2,714,400	273,422
1885.....	2,626,000	262,600			2,626,000	262,600
1886.....	2,239,000	232,855	164,040	\$16,404	2,403,040	249,259
Totals.....	21,811,853	\$2,471,903	164,040	\$16,404	21,975,893	\$2,488,307

*The exports from other Provinces are very small.

COMPARATIVE STATEMENTS OF COPPER CONTENTS OF SAME QUANTITIES OF CANADIAN
ORES EXPORTED TO THE UNITED STATES.

TABLE 3.

Fiscal years.	Imported to Vermont as per U.S. Treasury Department Returns.		Exported from Stanstead as per Canadian Customs' Depart- ment Return		Difference.	
	Pounds of copper	Value. \$	Pounds of copper.	Value. \$	Pounds of copper.	Value. \$
1883	(a.)	120,369	1,192,000	105,144	?	15,225
1884	2,234,642	223,405	1,676,000	171,700	558,642	51,705
1885	2,943,736	294,413	2,452,000	245,200	491,736	49,213
1886	3,318,723	332,033	2,864,000	240,700	454,723	91,333

(a.) Quantity of ore stated—526,694 cwts.

GOLD.

Summary.

The total production of gold in Canada, in 1886, has been 76,879 ozs., valued at \$1,330,442. This is an increase over the production of 1885 of 2,541 ozs., and in value an increase of \$214,419.

The return of the quantity of alluvial gold washed at Ditton, in Quebec, has not been obtained.

The two great gold producing provinces of the Dominion are British Columbia and Nova Scotia. In British Columbia, the gold has hitherto been derived from the alluvions, but in Nova Scotia, on the contrary, the quartz-veins were worked from the first. In the province of Quebec, gold has also been obtained for a great number of years from the alluvions of the tributaries of the Chaudière River in Beauce County, principally from the Gilbert River.

In several other places in the Eastern Townships of the province of Quebec, rich alluvions were washed, at times, principally at Ditton, in the county of Compton and in the county of Sherbrooke.

A small amount of gold is besides obtained every year from the alluvions of the Saskatchewan River, near Edmonton. In 1885 its value was about \$600.

Auriferous quartz-veins have also been worked in several districts in Ontario, and promising mines developed to a small extent, principally in the townships of Marmorata, county of Hastings; in the Township of Moss, Algoma; and on the Lake of the Woods. In 1886 none of the mines of these districts have produced any bullion.

The following general statement of the gold production of Nova Scotia in 1886 was kindly sent us by Mr. Gilpin, the Inspector of Mines:

Nova Scotia.

GENERAL STATEMENT OF GOLD PRODUCTION IN NOVA SCOTIA FOR THE YEAR 1886.

TABLE A.

Districts.	No. of mines.	Days labor.	Mills.	Steam power.	Water power.	Quartz &c., crushed.	Yield per ton.		Total yield of gold.		Max. yield per ton.	
							oz. dwt. grs.	oz. dwt. grs.	oz. dwt. grs.	oz. dwt. grs.		
Caribou	3	15,394	3	2	1	3,087	0 14 10	2,233	17 10	2	1	0
Darr's Hill	1	27,221	1	0	1	11,628	0 11 4	6,509	0 0	1	6	0
Montagu	1	1,434	2	2	0	77	1 2 18	87	14 0	9	1	0
Oldham	3	13,043	2	1	1	1,026	2 2 20	2,199	3 23	12	1	0
Renfrew	1	3,679	2	0	2	428	0 18 15	233	17 0	1	0	0
Sherbrooke	6	17,669	7	3	4	2,850	0 9 10	1,341	3 9	3	18	12
Stormont	2	3,142	2	2	0	429	1 0 6	435	0 0	1	18	0
Tangier	2	6,399	2	2	0	936	0 17 17	360	19 14	1	7	0
Uniacke	2	3,146	3	3	0	1,263	0 5 2	320	17 3	2	0	0
Waverley	1	2,736	1	1	0	508	0 12 22	329	2 0	1	19	0
Unproclaimed	5	35,017	10	7	3	6,778	1 7 0	9,311	10 22	17	10	0
Totals	27	128,880	35	23	12	29,010	0 16 2	23,362	5 15	17	10	0

Gold was first discovered in Nova Scotia in the Tangier district, in the year 1860; and two years afterwards, when the office of Gold Commissioner was created, work was actively proceeding in eight different districts.

The following tables B. and C., give the production by districts, as well as the yearly output for the whole of Nova Scotia since the beginning of the year 1862. They have been compiled from the annual reports of the Department of Mines of Nova Scotia, which may be referred to for many details concerning the operations of the gold mines in that province since their discovery:—

GOLD PRODUCTION OF THE DIFFERENT DISTRICTS IN NOVA SCOTIA FROM 1862 TO 1886 INCLUSIVE.

TABLE B.

District.	Total quantity of quartz crushed. tons.	TOTAL YIELDS.			Value at \$19.50 per oz.	Average yield per ton of 2,000 lbs.
		Quantity. oz.	dwt.	grs.		
Caribou.....	20,958	15,744	10	6	\$ 307,018	\$14,649
Montague.....	13,828	28,417	0	10	554,133	40,073
Oldham.....	31,171	31,459	14	9	613,465	19,680
Renfrew.....	41,862	29,470	3	23	574,670	13,760
Sherbrooke.....	158,942	118,283	14	10	2,306,532	14,512
Stormont.....	15,692	18,362	10	19	358,068	22,819
Tangier.....	27,418	18,439	19	17	359,578	13,115
Uniacke.....	31,231	18,108	13	4	353,119	11,305
Waverly.....	88,953	53,158	18	4	1,036,598	11,653
Wine Harbour.....	38,944	27,287	16	19	532,112	13,663
Darr's Hill.....	39,909	18,715	19	19	364,962	9,145
15 Mile Stream.....	1,088	560	6	23	10,927	10,043
Unproclaimed.....	42,793	34,406	3	23	670,922	15,678
Totals.....	552,789	412,415	12	18	\$8,042,104	\$14,566

YEARLY PRODUCTION OF GOLD IN NOVA SCOTIA SINCE 1862.

TABLE C.

YEAR.	Tons of quartz crushed.	Total yield.		Average yield per ton of 2,000 lbs.
		Quantity.	Value @ \$19.50.	
1862.....	6,473	Oz. Dwt. Grs. 7,275 8 0	\$141,871	\$21.91
1863.....	17,000	13,971 13 17	272,448	16.02
1864.....	21,431	20,017 18 13	390,349	18.11
1865.....	24,421	25,454 3 22	496,357	20.32
1866.....	32,157	25,204 13 2	491,491	15.28
1867.....	31,384	27,310 18 11	532,563	16.96
1868.....	32,259	20,541 6 10	400,555	12.41
1869.....	35,144	17,868 0 19	348,427	9.91
1870.....	30,824	19,866 5 5	387,392	12.56
1871.....	30,787	19,229 7 4	374,972	12.17
1872.....	17,089	13,094 17 6	255,349	14.81
1873.....	17,708	11,852 7 18	231,122	13.05
1874.....	13,844	9,140 13 10	178,244	12.87
1875.....	14,810	11,211 14 19	218,629	14.89
1876.....	15,490	11,978 13 18	233,585	15.08
1877.....	17,369	16,882 6 1	329,205	19.01
1878.....	17,989	12,577 1 22	245,253	13.63
1879.....	15,936	13,760 8 21	268,328	16.83
1880.....	13,997	13,221 13 22	257,823	18.42
1881.....	16,556	10,756 13 2	209,755	12.66
1882.....	21,081	14,107 3 20	275,090	13.04
1883.....	25,954	15,446 9 23	301,207	11.60
1884.....	25,186	16,079 14 10	313,554	12.44
1885.....	28,890	22,203 12 20	432,971	14.98
1886.....	29,010	23,362 5 15	455,564	15.70
Totals	552,789	412,415 12 18	\$8,042,104	\$14.56

The statistics for British Columbia were furnished us by the Department of Mines of that province, and are as follows:—

Table 1 is the statement of gold production, as reported by the banks at Victoria.

Table 2 gives the gold returns as estimated by the Gold Commissioners of the different districts.

Table 3 shews the yearly yield of gold since 1858. This table is

taken from the annual reports of the Department of Mines, which may be referred to for detailed information on the operations in the Gold Fields of British Columbia since 1874, when the first report was published.

VALUE OF GOLD EXPORTED BY THE BANKS AT VICTORIA DURING THE YEAR 1886.

TABLE 1.

Bank of British Columbia.....	\$374,398
Bank of British North America.....	48,519
Garesche, Green & Co.....	330,127
	\$753,043

PRODUCTION OF GOLD AND NUMBER OF MINERS EMPLOYED IN BRITISH COLUMBIA DURING 1886, AS ESTIMATED BY THE GOLD COMMISSIONERS.

TABLE 2.

Districts.	Divisions.	Whites.	Chinese	Yield of gold by divisions.	Total yield by districts.
Cariboo	Barkerville.....	96	216	\$96,000	\$258,200
	Lightning Creek.....	44	252	54,800	
	Quesnel Mouth	12	107	45,500	
	Keithley Creek.....	30	236	61,900	
		182	811		
Cassiar	Laketon	38	54	41,500	77,100
	McDame Creek	18	27	22,200	
	Skeena	63	17	13,400	
		119	98		
Kootenay.....	North	128	...	10,000	58,500
	South	49	115	48,500	
Lillooet		177	115		132,000
Omineca		50	400	132,000	
		15	23	17,600	17,600
Yale	Hope, Yale and Lytton..	..	250	25,000	
	Kamloops.....	30	45	22,000	
	Okanagan	14	30	5,000	
	Similkameen	493	295	203,000	
		537	620		
	Total Whites.....	1080		\$798,400
	" Chinese .....	....	2067	
	Total employed.....	3,147			

ANNUAL PRODUCTION OF GOLD IN BRITISH COLUMBIA SINCE 1858.

TABLE 3.

Year.	Amount actually known to have been exported by banks, &c.	Add one-third more, estimate of gold carried away in private hands.	Total.	Number of miners employed.	Average yearly earnings per man.
1858 (6 months)	\$ 390,265	\$ 130,088	\$ 520,353	3,000	\$ 173
1859					
1860	1,671,410	557,133	2,228,543	4,400	506
1861	1,999,589	666,529	2,666,118	4,200	634
1862	} 3,184,700	1,061,566	4,246,266	} 4,100	517
1863						2,801,888	933,962	3,735,850	4,400	482
1864	2,618,404	872,801	3,491,205	4,294	849
1865	1,996,580	665,526	2,662,106	2,982	813
1866	1,860,651	620,217	2,480,868	3,044	893
1867	1,779,729	593,243	2,372,972	2,390	814
1868	1,331,234	443,744	1,774,978	2,369	992
1869	1,002,717	334,239	1,336,956	2,348	749
1870	1,349,580	449,860	1,799,440	2,450	569
1871	1,208,229	402,743	1,610,972	2,400	734
1872	979,312	326,437	1,305,749	2,300	671
1873	1,383,464	461,154	1,844,618	2,868	567
1874	1,856,178	618,726	2,474,904	2,024	643
1875	1,339,986	446,662	1,786,648	2,282	1,222
1876	1,206,136	402,045	1,608,182	1,960	783
1877	1,062,670	1.5th 212,534	1,275,204	1,883	820
1878	1,075,049	" 215,009	1,290,058	2,124	677
1879	844,856	" 168,971	1,013,827	1,955	607
1880	872,281	" 174,456	1,046,737	1,898	518
1881	795,071	" 159,014	954,085	1,738	551
1882	661,877	" 132,375	794,252	1,965	548
1883	613,304	" 122,861	736,165	1,965	404
1884	594,782	" 118,956	713,738	1,858	396
1885	753,043	" 150,608	903,651	2,902	246
1886				3,147	287
		Total.....	\$50,209,517		

Quebec.
Chaudière
mining
division.

The returns made to Mr. Duchesnay, the Mining Inspector of the Chaudière division of the province of Quebec, added to other returns made directly to this office, give 327 ozs., 9 dwts., 22 grs., as the production of gold in that division in 1886.

The following table gives the total production of that division as reported to Mr. Duchesnay since the year 1877, but the real quantity of gold washed each year has been greater than is indicated by these figures, and Mr. Duchesnay estimates that in 1879 he received returns of only about one-half of the actual production, and that in 1880 the actual production was more than \$50,000.

Gold was first discovered in that region in 1847, but active operations there date only from 1862. It has been impossible to collect the statistics of the production for each year since that date; it was only learned that in 1867, the returns made to the Mining Inspector gave \$31,000, and that in 1868 they were about \$25,000.

GOLD PRODUCTION OF THE CHAUDIÈRE DIVISION AS REPORTED TO THE MINING INSPECTOR.

Year.	Total output as reported.			Value @ \$17 50 per oz.
	oz.	dwts.	grs.	
1877 (a).....	688	— 19	— 11	\$12,057
1878.....	1024	— 19	— 5	17,937
1879.....	1884	— 2	— 7	32,972
1880.....	1895	— 13	— 4	33,174
1881.....	3237	— 15	— 17½	56,661
1882.....	976	— 15	— 0	17,093
1883.....	1016	— 1	— 21½	17,787
1884.....	498	— 9	— 3	8,720
1885.....	120	— 19	— 19	2,120
1886.....	227	— 9	— 22	3,981

(a) Second half of 1877 only.

GRAPHITE.

The total production of graphite in 1886 has been 500 tons, valued at \$4,000 at the mine.

EXPORTS OF GRAPHITE.

Year.	ONTARIO (a.)		QUEBEC.		NEW BRUNSWICK.		TOTAL.	
	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.
1877	429	\$1,553	....	\$	....	\$	429	\$1,553
1878	899	3,370	....	....	....	....	899	3,370
1879	275	1,167	....	....	....	....	275	1,167
1880	....	....	....	....	....	....	....	....
1881	....	....	....	....	....	....	....	....
1882	....	....	....	....	....	....	....	....
1883	....	....	....	....	140	59	140	59
1884	....	....	....	....	....	....	....	....
1885	....	....	6	60	2043	917	2,049	977
1886	....	....	....	....	8142	3586	8,142	3,586
Total ..	1603	\$6,090	6	\$60	10,325	\$4562	11,934	\$10,702

(a) The exports from Ontario are probably the produce of the mines of Ottawa county, province of Quebec.

IMPORTS OF BLACK LEAD.

PROVINCES.	1885.	1886.
Ontario	\$9,519	\$11,322
Quebec	3,434	4,825
Nova Scotia	2,765	4,333
New Brunswick....	3,622	4,049
Prince Edward Is'd..	440	640
Manitoba	54	94
British Columbia...	540	550
Totals	\$20,377	\$25,813

GYPSUM.

The total production of crude gypsum has not been obtained. Summary. Taking the exports from Nova Scotia as representing very nearly the production, and estimating the quantity mined in Ontario to have been 6,000 tons, the total crude gypsum produced in Canada during 1886 may then be estimated at about 162,000 tons, valued in the aggregate, at the point of production, at \$178,742 ; of this, about 7,000 tons were calcined and manufactured, in New Brunswick, into about 51,000 barrels of plaster of Paris, valued on the spot at about \$1.00 a barrel; about half of this plaster of Paris was sold in Canada, and the other half exported to the United States. Unknown quantities were ground in Ontario for land plaster or calcined for plaster of Paris.

Compared with 1885, it is estimated that the increase in 1886 in the production of crude gypsum was about 45,000 or 50,000 tons; the Nova Scotia exports alone having increased 36,109 tons.

The total imports were \$2,492 worth of crude gypsum, \$560 worth of ground gypsum, and \$5,602 worth of plaster of Paris.

Nova Scotia—The quantity consumed in Nova Scotia is not reported by the Department of Mines, but the quantity exported was kindly furnished us by that bureau as follows:—

Exported From.	Tons.	Value.
Windsor.. .. .	96,087	\$96,119
Cheverie.... .	23,272	17,509
St. Anne's (C.B.).....	4,300	4,000 (a.)
Halifax.... .	94	492
	<hr style="width: 100px; margin: 0 auto;"/> 123,753	<hr style="width: 100px; margin: 0 auto;"/> \$118,110

(a)—Estimated value.

From the annual reports of the Department of Mines of this province, we gather that the exports of gypsum for the four years 1883 to 1886 were :

	Tons.
1883.....	144,668
1884.....	111,068
1885.....	87,644
1886.....	123,753

These quantities, it will be noticed, do not entirely agree with the export returns of the Customs Department of Ottawa, the table of which is given below.

In New Brunswick the production of gypsum in 1886 has been about 32,421 tons, valued on the spot at \$48,632, at an average price of \$1.50 a ton. It was nearly all produced in Albert County: 1,500 tons only having been estimated as the production from the Victoria County quarries. Besides a large export of crude gypsum to the United States, the Albert Manufacturing Co. also exports a considerable quantity of calcined gypsum, or plaster of Paris, and sup- New Brunswick.

plies, moreover, pretty nearly all the Canadian market with this last article. About 4,000 tons of the crude gypsum exported to the United States was white gypsum, suitable for terra alba, and sold in the vicinity of New York city.

Mr. Joseph T. Tomkins, general agent for the Albert Manufacturing Co., Hillsborough, N.B., reports to us as follows:—"After persistent effort and much loss of money in competition with the American tariff, all hope of a successful business in manufacturing plaster of Paris here for the American market was abandoned, and a large factory was added to our works at Newark, New Jersey, the year previous to the advent of the National Policy, which policy alone gave new life to manufacturing plaster, and our Canadian business has increased largely since 1877, the price of our plaster remaining about the same, \$1.00 per barrel."

Ontario.

Notwithstanding repeated efforts made by correspondence to obtain returns from all the Ontario producers along the Grand River in the counties of Brant and Haldimand, the return of L. H. Johnson, of the Caledonia Plaster Works, was alone forwarded. (a.)

From the annual report of the Bureau of Industries, Ontario, for 1885, and from information kindly sent by Wm. Hamilton Merritt, Esq., of Toronto, the production is estimated to have been about 6,000 tons. Most of it is ground and sold as land plaster, some is calcined for plaster of Paris, and some used as a disinfectant; very little is exported, Ontario not only using nearly all its production, but importing, besides, several thousand tons of crude gypsum and plaster of Paris.

The tables of the imports and exports of gypsum are given below, and shew how much greater the exports are than the imports:—

EXPORTS OF CRUDE GYPSUM.

YEARS.	ONTARIO.		NOVA SCOTIA.		NEW BRUNSWICK.		TOTAL.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
1874	.....	.....	67,830	\$68,164	.....	.....	67,830	\$68,164
1875	.....	.....	86,065	86,193	5,420	\$5,420	91,485	91,613
1876	120	\$180	87,720	87,590	4,925	6,616	92,765	94,386
1877	.....	.....	106,950	93,867	5,030	5,030	111,980	98,897
1878	489	675	88,631	76,695	16,335	16,435	105,455	93,805
1879	579	720	95,623	71,353	8,791	8,791	104,993	80,864
1880	875	1,240	125,685	111,833	10,375	10,987	136,935	124,060
1881	657	1,040	110,303	100,284	10,310	15,025	121,270	116,349
1882	1,249	1,946	133,426	121,070	15,597	24,581	150,272	147,597
1883	462	837	145,448	132,834	20,242	35,557	166,152	169,228
1884	688	1,254	107,653	100,446	21,800	32,751	130,141	134,451
1885	525	787	81,887	77,898	15,140	27,730	97,552	106,415
1886	350	538	118,985	114,116	23,498	40,559	142,833	155,213
Totals	5,994	\$9,217	1,356,206	\$1,242,343	157,463	\$229,482	1,519,663	\$1,481,042

(a.)—Returns collected at the last moment give a production of 6,400 tons of crude gypsum, valued raw on the spot at \$8,000.

EXPORTS OF PLASTER OF PARIS.

PROVINCES.	1884.	1885.	1886.
Ontario	\$ 99	\$	\$
Nova Scotia .....	.....	294	265
New Brunswick.....	18,569	15,404	24,670
Totals.....	\$18,668	\$15,698	\$24,935

IMPORTS OF CRUDE GYPSUM AND OF GROUND GYPSUM IN 1885 AND 1886.

PROVINCES.	Ground Gypsum.				Crude Gypsum.			
	1885.		1886.		1885.		1886.	
	Pounds.	Value.	Pounds.	Value.	Tons.	Value.	Tons.	Value.
Ontario	26,700	\$	26,872	\$129	1,954	\$2,576	1,557	\$2,492
Quebec.	12,212	51	11,210	36	....	....	....	....
Nova Scotia..	....	....	....	....	....	....	....	....
N. Brunswick.	417,800	1,049	150,800	395	....	....	....	....
Prince Ewd. Is	....	....	....	....	....	....	....	....
Manitoba ....	....	....	....	....	....	....	....	....
Brit. Columbia	325	10	....	....	....	....	....	....
Totals	457,037	\$1,173	188,882	\$560	1,954	\$2,576	1,557	\$2,492

IMPORTS OF PLASTER OF PARIS.

PROVINCES.	1885.		1886.	
	Pounds.	Value.	Pounds.	Value.
Ontario	245,340	\$1,254	247,906	\$1,338
Quebec.....	13,000	66	33,000	165
Nova Scotia.....	2,127	53	2,056	68
New Brunswick...	57,700	286	56,900	261
Prince Edward Island .....	....	....	....	....
Manitoba	22,000	90	242,700	1,297
British Columbia.....	264,350	2,567	254,895	2,473
Totals.....	604,517	\$4,316	837,457	\$5,602

IRON.

Summary.

The total production of iron ore in 1886, taking the Ontario exports as representing the production from that province, has been 69,708 tons, valued at the mines at \$126,982.

The quantities used in the blast furnaces at Drummondville have not been obtained.

The total exports were 19,164 tons the declared value of which was \$58,410. The total production in 1885, if computed in the same way, gives 69,520 tons, valued at the mines at \$115,458; the exports that year were 15,628 tons, valued at \$46 307 at the ports of shipment.

No Iron Ore is imported.

Production
by province.

The production in 1886 by provinces has been as follows:—

	Tons.		Value at Mines.
Nova Scotia.....	49,735 @	\$1.75	\$87,036
Ontario (export returns).....	16,032 @	2.00	32,064
British Columbia.....	3,941 @	2.00	7,882
Total.....	69,708		126,982

Nova Scotia.

The Nova Scotia production is all from the Acadia Iron Mines of the Steel Co. of Canada (Limited), Londonderry, and the Inspector of Mines of this province states in his report that there were also at the Londonderry Mines, in 1886, 947 tons of ankerite mined for a flux.

According to the reports of the Department of Mines, the annual production of iron ore in Nova Scotia from 1876 to 1886 has been:—

1876.....	15,274 tons of 2,240 lbs.
1877.....	16,879 "
1878.....	36,600 "
1879.....	29,889 "
1880.....	51,193 "
1881.....	39,843 "
1882.....	42,135 "
1883.....	52,410 "
1884.....	54,885 "
1885.....	48,129 "
1886.....	44,388 "

Ontario.

The exports of iron ore from Ontario in 1886 can be divided into about 11,000 tons from the Hastings district, and 5,000 tons from the Kingston district.

British
Columbia.

In British Columbia, the mine on Texada Island was the only one in operation in 1886; the ore was shipped to Irondale, Washington Territory, and smelted there with a mixture of bog-ore, by the Puget Sound Iron Co.

In the two following tables, and in the preceding table of the Nova Scotia production, very nearly all the iron ore extracted from the iron mines of Canada during the years mentioned is shewn, and these tables indicate to how small an extent the iron mines of Canada have been developed.

EXPORTS OF IRON ORE FROM THE PROVINCES OF ONTARIO AND QUEBEC FROM 1859 TO 1867 INCLUSIVE, AND FROM THE DOMINION FROM 1868 TO 1873 INCLUSIVE.

Fiscal Years.	Tons.	Value.	
1859	9,217	\$ 25,965	
1860	9,744	34,165	All to U. S.
1861	932	2,430	" "
1862	3,141	10,197	" "
1863	5,420	18,124	
1864	6,193	24,573	
1865	5,946	27,272	
1866	3,357	22,727	
1867	4,194	12,798	
1868	(a) 25,312	54,723	
1869	27,848	60,298	
1870	15,232	34,927	
1871	26,825	58,068	
1872	26,175	64,904	
1873	(b) 47,200	112,366	
Totals ..	216,736	\$563,537	

(a) The Blairton Mine was working this year.

(b) Mines of Ottawa County working this year.

EXPORTS OF IRON ORE.

Years	Ontario.		Quebec.		Nova Scotia.		N. Brunsw'k		B. Columbia.		Total.	
	Tons.	Value.	Tons	Value.	Tons	Value.	Tons	Value.	Tons.	Value.	Tons.	Value.
1873.	55,990	\$124,173	400	\$4,400	57	\$2,010	.....	.....	.....	.....	56,447	\$ 130,583
1874.	37,101	83,759	1	10	12	270	274	\$2,378	.....	.....	37,388	86,417
1875.	13,331	28,467	2	18	5	80	.....	.....	.....	.....	13,833	28,565
1876.	9,452	18,345	.....	.....	2	50	1	2	.....	.....	9,455	18,397
1877.	3,782	10,514	.....	.....	3	14	.....	.....	.....	.....	3,785	10,528
1878.	4,295	8,643	.....	.....	.....	8	.....	.....	20	\$ 200	4,815	8,846
1879.	9,465	20,963	.....	1	2	10	.....	.....	.....	.....	9,467	20,974
1880.	48,377	123,867	.....	.....	.....	.....	5	18	300	300	48,682	124,180
1881.	40,894	121,232	128	154	5	36	.....	.....	1,200	1,200	42,227	122,622
1882.	54,752	171,219	.....	.....	.....	.....	206	3,090	1,690	3,380	56,648	177,689
1883.	25,205	68,270	18	256	25	625	103	1,648	240	480	25,591	71,279
1884.	49,275	114,517	.....	.....	.....	.....	1	4	3,535	7,837	52,811	122,408
1885.	15,426	45,433	.....	.....	.....	.....	12	440	190	425	15,628	46,307
1886.	16,032	51,175	2	10	.....	.....	.....	.....	3,130	7,225	19,164	58,410
Tot'ls	383,377	\$990,577	551	\$4,849	111	\$3,098	602	\$7,584	10,305	\$21,097	394,946	\$1,027,205

Iron and Steel Industry.

A commencement was made in the collection of statistics of the consumption and production of the branches of the iron and steel industries which produce iron and steel from raw materials or through secondary operations, or in other words, an attempt has been made to collect statistics of the products of the blast furnaces, rolling mills steel works and forges.

But as full replies to the enquiries made have not been obtained, and as our list of all the iron works was incomplete, the results so far attained, if summarized, would not give a fair statistical account of the iron and steel industry in the Dominion. We shall therefore, in this report give only the exports and imports of iron and steel for the calendar years 1885 and 1886 which have been compiled from the books of the Customs Department, hoping to be able next year to add to this the statistics of the total production and of the total consumption in the country.

Exports.

Table J gives the exports of scrap iron and of the iron and steel goods manufactured in Canada; a great increase in the exports of scrap iron in 1886 will be noticed due to a scarcity of ore in the United States, and to the fact that the American manufacturer, being thoroughly protected, could afford to outbid our own manufacturer.

In table 3, the articles mentioned in the note (a.) were not included, Imports. so as to give a fairer idea of the market now available in the Dominion for the raw material and which might be supplied by iron and steel manufactured here. The tables 4, 5, 6, 7 and 8 shew the details of the imports of the different articles included under the headings: iron, steel, castings and forgings, railroad iron and steel, and hardware and manufactures, in table 3; the articles left out can be seen by comparing these lists of articles with the list of imported goods of the Trade and Navigation returns.

EXPORTS OF IRON AND STEEL GOODS THE PRODUCE OF CANADA.

TABLE 1.

ARTICLES. (a)	1884	1885	1886
Scrap Iron.....	\$ 11,378	\$ 1,192	\$ 77,546
Castings.....	8,995	7,848	13,599
Stoves.....	640	1,864	4,701
All other iron, and Hardware....	140,170	84,807	91,298
Steel and manufactures of.....	25,671	19,447	40,883
Totals.....	\$186,854	\$115,158	\$228,027

(a) No exports of Pig Iron.

IMPORTS OF PIG IRON BY PROVINCES.

TABLE 2.

PROVINCES.	Pig Iron. (Charcoal.)				Pig Iron. (All other.)			
	1885.		1886.		1885.		1886.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
Ontario.....	939	\$16,921	4,072	\$76,795	16,210	\$231,509	16,418	\$219,495
Quebec.....	103	2,489	463	10,426	21,203	241,508	22,014	222,756
Nova Scotia.....	65	1,280	33	780	1,467	17,764	827	13,147
New Brunswick.....					2,684	40,513	2,824	51,352
Prince Edward Island.....					67	767	78	814
British Columbia.....					1,021	13,662	631	8,819
Totals.....	1,107	\$20,690	568	\$88,001	42,652	\$545,723	42,792	\$516,383

SUMMARY TABLE OF THE IMPORTS OF PIG IRON, IRON AND STEEL (a).

TABLE 3.

ARTICLES.	1885.	1886.
Pig Iron, Charcoal.....	\$ 20,690	\$ 88,001
" " all other.....	545,723	516,383
Iron.....	2,700,243	3,024,410
Steel.....	636,613	850,816
Castings and Forgings.....	468,137	562,709
Railroad Iron and Steel....	2,468,419	2,289,373
Hardware and m'frs.....	411,199	396,081
Totals.....	\$7,251,024	\$7,727,773

(a.) Not including cutlery, edge-tools, machinery and engines, and other hardware and manufactures, in the price of which the principal item is not the weight of the metal.

IMPORTS OF IRON.

TABLE 4.

ARTICLES.	1885.		1886.	
	Quantity.	Value.	Quantity.	Value.
Band and hoop iron, No. 17 guage, or thinner, cwt.	28,387	\$ 55,689	32,085	\$ 52,402
" " " 17 thicker	30,718	48,774	47,605	57,463
Bars, rolled or hammered, including flats, rounds and squares.....	625,604	801,512	633,295	675,208
Boiler-plate.....	83,402	153,221	120,681	176,929
Canada plates.....	116,804	222,737	106,690	171,320
Iron, N.E.S.....	339	648	1,552	1,917
" other in slabs, blooms, loops, &c.....	252,123	232,919	360,352	293,474
Nail and spike rods.....	3,754	10,507	20,165	36,985
Rolled beams, channels, and angle and T iron, steel, or iron and steel, N.E.S.....	52,821	86,918	119,238	167,569
Rolled round wire rods, in coils, under $\frac{1}{2}$ in. diam.....	999	1,708	1,074	1,724
Sheet iron, smoothed or polished, coated or galvanised, and common or black, 17 guage and thinner.....	87,590	262,736	113,818	320,470
Ditto, ditto, thicker than 17 guage.....	49,039	74,558	34,112	45,692
Tubing, wrought iron, plain, not threaded, coupled or otherwise mfd., and over 2 in. diam.....	feet. 365,965	40,032	473,587	49,290
Tubing, wrought iron, threaded, coupled, or otherwise mfd., and over 2 in. diam.....	" 173,181	34,339	389,321	68,910
Tubing, wrought iron, plain, 2 in. diam. or under, threaded and coupled, or not.....	" 3,834,639	154,913	5,265,119	208,705
Lap-welded boiler tubing, not threaded, coupled or otherwise mfd., $\frac{1}{2}$ in. diam. and over.....	" 453,951	42,072	735,191	55,025
Wire, iron and steel, 15 guage and coarser, and N.E.S.....	cwt. 101,297	244,061	136,234	333,013
Hoop iron, not exceeding $\frac{3}{8}$ in. in width, and being 25 guage or thinner, for mfr. of tubular rivets.....	" 89	1,132	48	623
(a) Iron and steel, old and scrap.....	" 163,909	124,765	247,684	171,951
Iron or steel beams, sheets, plates, angles and knees, for iron or composite ships or vessels.....	" 788	1,051	19,468	17,242
Wire of spring steel, coppered, for mfr. of mattresses, 9 guage and smaller.....	lbs. 470,908	21,903	780,869	32,347
Wire of iron or steel, galvanised or tinned or not, 15 guage or smaller.....	" 1,322,165	84,048	1,698,500	84,171
Totals.....		\$2,700,243		\$3,024,410

(a.)—The Iron and Steel could not be separated.

IMPORTS OF STEEL.

TABLE 5.

ARTICLES.	1885.		1886.	
	Quantity.	Value.	Quantity.	Value.
Locomotive tires of steel or Bessemer..... cwt.	5,979	\$ 27,089	14,132	\$ 43,279
Steel, ingots and bars (if from shears and rolls only)..... "	114,076	290,136	175,916	367,260
Steel, sheets, under 3-16 in. thick, whole or cut to shape..... "	11,446	29,859	18,014	33,841
Steel, sheets, thicker than 3-16 in. thick, and N.E.S..... "	15,041	39,324	40,006	76,842
Steel, coils, rolled round wire rods, N.E.S... "	....	....	661	1,095
Steel, wire rods, rolled round, under $\frac{1}{2}$ in. diam., imported by wire mfrs. for use in their factories..... "	13,813	23,301	48,650	65,607
Axes.....	....	8,132	....	8,148
Saws.....	....	63,639	....	64,250
All manufactures of steel, and iron and steel, N.E.S.....	....	91,886	....	90,897
Steel for manufacture of skates..... cwt.	1,017	5,757	1,197	4,591
" " saws and straw cutters..... "	4,881	51,935	10,264	71,773
Steel, crucible sheet, 11 to 16 guage, for mower and reaper knives..... "	75	280	687	2,739
Steel, No. 20 guage and thinner, and not thinner than 30 guage, for manufacture of corset steels, shanks, &c..... "	262	983	976	4,597
Steel in sheets, not less than 11 or over 18 wire guage, for mfr. of shovels and spades..... "	1,238	4,842	2,986	10,897
Totals.....	....	\$636,613	....	\$850,816

IMPORTS OF CASTINGS AND FORGINGS.

TABLE 6.

ARTICLES.	1885.		1886.	
	Quantity.	Value.	Quantity.	Value.
Castings, every description, N.E.S., and forgings.	....	\$ 268,301	....	\$ 282,766
Cast-iron gas, water and soil pipes.....	....	58,080	....	155,209
Chains, iron or steel, over 9-16 in. diam..... cwt.	23,955	49,441	22,439	45,498
Chain cables, all other..... "	19,974	57,790	17,151	43,268
Malleable iron castings.....	....	19,752	....	19,322
Anchors..... cwt.	3,251	14,058	3,797	10,146
Iron masts for ships..... "	67	715	....	1,000
Totals.....	....	\$468,137	....	\$562,709

IMPORTS OF RAILROAD IRON AND STEEL.

TABLE 7.

ARTICLES.	1885.		1886.	
	Quantity.	Value.	Quantity.	Value.
Car wheels	cwt.	5,065		\$ 15,150
Railway bars, or iron rails for railways or tramways	"	13,764	12,703	\$ 51,569
Railway fish-plates, frogs, frog-points, chairs and finger bars	"	13,917	20,908	26,331
Steel railway bars or rails, not including tram or street rails	"	775,403	117,600	116,000
Materials for original construction, C. P. Ry. :-		1,047,900	2,172,023	1,512,995
Bolts and nuts	cwt.	8,139		5,024
Fish-plates	"	46,941		50,533
Spikes	"	7,790		21,827
Steel rails	"	857,058	516,433	554,012
Material for original construction Esquimalt and Nanaimo Railway :-				
Bolts and nuts	cwt.	663	197	478
Fish-plates	"	56,804	778	1,472
Spikes	"	1,160	949	2,516
Steel rails	"	57,510	13,440	24,000
Totals		\$2,468,419		\$2,289,373

IMPORTS OF HARDWARE AND MANUFACTURES.

TABLE 8.

ARTICLES.	1885.		1886.	
	Quantity.	Value.	Quantity.	Value.
Anvils	cwt.	1,275		\$ 5,233
Axles of iron and steel	"	228	929	\$ 5,233
Bolts and nuts, stove, and all bolts and rivets 1/2 in. diam. and less	lbs.	....	7,366	11,779
Bolts, washers and rivets .....	"	....	20,747	2,256
Horse-shoes and horse-shoe nails .....	"	....	....	34,343
Iron bridges and structural ironwork	cwt.	4,466	4,089	3,566
Nails, Hungarian and clout	lbs.	61,903	20,508	30,750
" iron wire "Pointes de Paris"	"	127,681	2,759	8,062
" and spikes, wrought and pressed, incl. railway spikes	"	423,389	5,219	262,572
" and spikes, cut	"	411,968	14,060	670,538
Nuts, N.E.S.	"	199,702	13,436	182,681
Screws, iron and steel, "wood screws"	gross.	427,992	9,547	110,379
Stoves	No.	3,312	30,268	187,524
Tacks, brads and sprigs	lbs.	....	26,740	1,745
Wire fencing, barbed, of iron and steel (from 31st March, 1886) .....	"	....	5,384	....
Wire fencing, Buckthorn, &c., (from 31st March, 1886) .....	"	....	....	63,815
Wire, covered with cotton, silk, &c. (from 23rd May, 1886) .....	"	....	....	6,632
Wire rope, strand or chain, made of iron or steel wire	cwt.	3,811	67,809	19,462
Wirework, other .....	"	....	1,965	16,564
Manufactures of iron, All other, N.O.P.F. ....	"	....	....	104,470
Wire rigging for ships or vessels	cwt.	6,079	41,277	25,896
Nails, spikes and sheathing nails composition, lbs.		33,944	26,341	6,067
Totals .....		....	36,021	4,625
		\$411,199		\$396,081

LITHOGRAPHIC STONE.

Beds of excellent lithographic stone have long been known to exist in Ontario, principally in the counties of Hastings, Peterboro and Bruce, towards the base of the Birds-eye and Black River formation. The different quarries, so far as ascertained, have only produced specimens in 1886.

IMPORTS OF LITHOGRAPHIC STONE.

PROVINCES.	1885.	1886.
Ontario	\$1,033	\$4,037
Quebec	926	1,715
New Brunswick	2	8
British Columbia	27	2
Totals.....	\$1,988	\$5,762

MANGANESE.

Summary.

The production of manganese ore in 1886, has been 1,789 tons, valued at the mines at \$41,499. It is supposed that a small quantity from New Brunswick has not been returned, and should be added to that total.

In 1885, the production of manganese ore in Nova Scotia is stated, in the report of the Inspector of Mines of that province, to have been 353½ tons, and the exports from New Brunswick that year were 1,607 tons, valued at the ports of shipment at \$29,595.

Nova Scotia and New Brunswick are the only two provinces of the Dominion where manganese mines have been in active operation.

Nova Scotia.

In 1886 274½ tons of manganese ore was mined at Teny Cape, Cheverie, East Onslow, Stewiacke and Walton in Nova Scotia; the reported value of which at the mines was \$19,248.

Table A. gives the production in that province since 1877 as per the Department of Mines Annual Reports.

PRODUCTION OF MANGANESE ORE IN NOVA SCOTIA.

TABLE A.

Years.	Tons.	Value.
1877	97	....
1878	127	\$5,565
1879	145	7,170
1880	223	7,931
1881	231	....
1882	205	....
1883	150	12,462
1884	302½	....
1885	353½	....
1886	(a) 427	....
Total..	2,261	

(a.) 250 tons from Cornwallis included in this quantity would more correctly be classed as an ochre.

New Brunswick.

In New Brunswick the production in 1886 was 1,515 tons, valued at the mines at \$22,051.

Exports and Imports.

Tables 1 and 2 give the exports since 1868, and Table 3 the imports of oxide of manganese in 1885 and 1886.

EXPORTS OF MANGANESE ORES.

TABLE 1.

FISCAL YEARS.	Nova Scotia.		New Brunswick.		Total.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
1868.....	156	\$4,700	861	\$19,019	1,017	\$23,719
1869.....	156	4,695	332	6,174	488	10,869
1870.....	1,256	4,102	146	3,580	1,402	7,682
1871.....	102	1,608	954	8,180	1,056	9,788
1872.....	131	4,005	1,075	24,495	1,206	28,500
1873.....	....	....	838	17,171	838	17,171
Totals	1,801	\$19,110	4,206	\$78,619	6007	\$97,729

EXPORTS OF MANGANESE ORES.

TABLE 2.

YEARS.	NOVA SCOTIA.		NEW BRUNSWICK.		TOTAL.	
	Tons.	Value	Tons.	Value.	Tons.	Value.
1873	....	\$.....	1,031	\$20,192	1,031	\$20,192
1874	6	12	776	16,961	782	16,973
1875		200	194	5,314	203	5,514
1876	21	723	391	7,316	412	8,039
1877 (b)	106	3,699	785	12,210	891	15,909
1878	106	4,889	520	5,971	626	10,860
1879	154	7,420	1,732	20,016	1,886	27,436
1880	79	3,090	2,100	31,707	2,179	34,797
1881	200	18,022	1,504	22,532	1,704	40,554
1882	123	11,520	771	14,227	894	25,747
1883	313	8,635	1,013	16,708	1,326	25,343
1884	134	1,054	469	9,035	603	20,089
1885	77	5,054	1,607	29,595	1,684	34,649
1886	441(a.)	854	1,377	27,484	1,818(a.)	58,338
Totals..	1,769	\$105,172	14,270	\$239,268	16,039	\$344,440

(a.) 250 tons from Cornwallis included in this quantity more properly come under the heading mineral pigment.

(b.) 2 tons, valued at \$6, were exported from Quebec that year.

IMPORTS OF OXIDE OF MANGANESE.

TABLE 3.

PROVINCES.	1885.		1886.	
	Pounds.	Value.	Pounds.	Value.
Ontario	20,158	\$ 648	16,464	\$ 824
Quebec	22,637	1,123	29,413	1,530
Nova Scotia	1,087	76	1,075	75
New Brunswick	950	27	.....	.....
Manitoba .....	.....	.....	609	26
Totals	44,832	\$1,874	47,561	\$2,455

MICA.

The quantity of cut mica, of domestic production, returned to this office as having been sold in 1886 was 20,361 lbs., valued on the market at \$29,008, the average price therefore being \$1.42 a pound. This represents the production of four different mines, three in Ontario and one in Quebec, and is believed to be all that was produced in Canada in 1886. The low average price of \$1.42, is due to the fact that the largest producer is not selling a first class quality; but the average price of that from the other mines is between \$2.50 and \$3.00. This shows that much of our mica is of very fine quality as the average price in 1885 of all the mica sold in the U. S., was computed at \$1.75 a pound. A very appropriate remark made in the report of the Mineral Resources of the United States (1885) may nevertheless be quoted: "The fact that fine, large sheets of mica have a value of several dollars per pound, reaching in exceptional cases as much as \$10 per pound for special purposes, has led to popular misapprehension in regard to the average value of this mineral;" and the average price in 1885 is given, as above stated, at \$1.75 a pound. It must also not be forgotten, in considering the value of a mica mine, that great waste is always to be expected on account of the numerous naturally bad portions in the deposits, causing inevitable loss in mining and cutting.

MINERAL PIGMENTS.

Baryte.

The total production of baryte in 1886 was 3,864 tons, valued at the mines at \$19,270. In 1885, the production was only 300 tons from the Stewiacke mine, Nova Scotia. The increase in 1886 is due to the working of a large vein on McKellar's Island, Lake Superior.

IMPORTS OF UNMANUFACTURED BARYTE.

PROVINCES.	1885.		1886.	
	Cwt.	Value.	Cwt.	Value.
Ontario.....	..	\$ 2	45	\$291
Quebec .....	..	...	127	80
Nova Scotia.....	6½	16	238	54
New Brunswick.....	..	...	6	47
Totals.....	6½	\$18	416	\$472

Litharge.

IMPORTS OF LITHARGE.

PROVINCES.	1885.		1886.	
	Cwt.	Value.	Cwt.	Value.
Ontario.....	1,540	\$ 5,270	3,843	\$13,001
Quebec	2,259	6,575	1,891	6,289
Nova Scotia	20	100	2	8
New Brunswick.....	2	11	13	85
Manitoba.....	11	40	10	41
British Columbia	12	72	6	35
Totals.....	3,844	\$12,068	5,765	\$79,459

Terra Alba.

Terra alba.—About 4,000 tons have been exported in 1886 from the gypsum quarries of Hillsboro, New Brunswick; it was worth, laid down in New York, from \$5 to \$7 per ton. When ground, it produces a quality of terra alba No. 1, worth from \$14 to \$15 per ton. The quantity shipped from Windsor, Nova Scotia, is not known.

So far as returned to this office, 400 barrels of whiting were pro-Whiting. duced in Ontario, valued at about \$600.

IMPORTS OF WHITING.

Provinces.	1885.		1886.	
	Cwt.	Value.	Cwt.	Value.
Ontario	6,532	\$ 2,467	10,272	\$ 3,577
Quebec	53,352	21,097	24,839	8,698
Nova Scotia	2 488	1,120	8,654	1,823
New Brunswick.....	2,949	1,206	2,773	1,166
Prince Edward Island.....	368	174	109	61
British Columbia.....	295	236	739	857
Totals.....	65,984	\$26,300	47,386	\$16,182

IMPORTS OF CHALK.

Provinces.	1885	1886
Ontario	\$4,882	\$3,053
Quebec	1,322	1,657
Nova Scotia.....	230	167
New Brunswick	66	191
Prince Edward Island...	23	30
Manitoba	71	208
British Columbia.....	13	28
Totals.....	\$6,607	\$5,334

MISCELLANEOUS METALS.

Lead. It is believed that there was no production or smelting of lead ore in Canada during 1886. Some preparatory work was done in opening up galena veins on Lake Temiscaming, Quebec, and in the Selkirks, British Columbia.

The exports of lead ore since 1873 are given in the following table 1, which shows how small they have always been.

Table 2 shows the imports of lead.

Zinc. Table 3 gives the imports of zinc. The Zenith Zinc Mine, on the north shore of Lake Superior, was not worked in 1886.

Tin. Tables 4 and 5 give the imports of tin. Tin has not yet been discovered in Canada.

Mercury. Cinnabar was discovered in 1886 in the Rocky Mountains, near Golden City. It has been found in several other places in British Columbia, but not yet in workable quantity. The imports of mercury are given in table 6.

EXPORTS OF LEAD ORE FROM CANADA.

TABLE 1.

YEARS.	NOVA SCOTIA.		NEW BRUNSWICK.		QUEBEC.		BRITISH COLUMBIA.		PRINCE ED. ISLAND.		TOTAL.	
	Tons	Value.	Tons	Value.	Tons	Value.	Tons	Value.	Tons	Value.	Tons	Value.
1873	3	\$263	53	\$1,730	.....	\$	.....	\$	.....	\$	56	\$1,993
1874	.....	.....	4	77	.....	.....	.....	.....	3	50	7	127
1875	.....	.....	1	10	177	7,500	.....	.....	.....	.....	178	7,510
1876	.....	50	2	16	.....	.....	.....	.....	.....	.....	9	66
1877	9	720	.....	.....	.....	.....	.....	.....	.....	.....	9	720
1878	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1879	.....	.....	.....	.....	2	230	.....	.....	.....	.....	2	230
1880	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1881	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1882	.....	.....	2	32	.....	.....	.....	.....	.....	.....	2	32
1883	.....	.....	.....	.....	.....	.....	8	5	.....	.....	8	5
1884(a)	.....	.....	.....	.....	4	36	.....	.....	.....	.....	4	36
Totals..	19	\$1,033	62	\$1,865	183	\$7,766	8	\$5	3	\$50	275	\$10,719

(a) No exports in 1885 and 1886.

IMPORTS OF LEAD.

TABLE 2.

ARTICLES.	1885.		1886.	
	Cwt.	Value.	Cwt.	Value.
Lead, Old, Scrap and Pig.....	37,320	\$91,289	68,794	\$142,667
“ Bars, Blocks and Sheets..	8,651	22,578	10,488	32,450
“ Pipe			613	2,016
“ Shot.....	3,627	11,155	2,907	9,661
“ Manufactures of.....		25,911		9,884
Totals.....		\$150,933		\$196,678

IMPORTS OF ZINC IN BLOCKS, PIGS AND SHEETS.

TABLE 3.

PROVINCES.	1885.		188	
	Cwt.	Value.	Cwt.	Value.
Ontario	7,879	\$23,331	5,307	\$19,667
Quebec	13,001	42,520	15,457	56,905
Nova Scotia.....	1,466	9,259	1,456	5,973
New Brunswick.....	1,741	6,662	1,457	7,387
Manitoba			50	199
British Columbia	162	924	209	785
Prince Edward Island....	168	653	102	371
Totals.....	24,417	\$83,349	24,038	\$91,287

IMPORTS OF TIN.

TABLE 4.

PROVINCES.	1885.				1886.			
	Blocks, Pigs and Bars.		Tin-foil.		Blocks, Pigs and Bars.		Tin-foil.	
	Cwt.	Value.	Pounds.	Value.	Cwts.	Value.	Pounds.	Value.
Ontario.....	2,179	\$38,622	27,023	\$4,244	4,017	\$73,661	30,929	\$5,480
Quebec.....	3,125	54,406	57,066	10,383	7,822	104,717	57,602	11,226
Nova Scotia.....	1,581	25,288	140	25	2,423	39,937	1,083	255
New Brunswick.....	667	13,292	142	78	587	11,333	184	45
Manitoba.....	....	....	348	141	42	939	655	230
British Columbia.....	402	8,251	232	88	1,639	36,301	50	14
Prince Edward Island....	482	9,058	....	....	451	10,047	....	...
Total.....	8,436	\$148,917	84,951	\$14,959	16,981	\$276,935	90,453	\$17,250
Total Tin-foil—cwts.....	850	14,959	....	...	905	17,250	....	....
Total Tin.....	9,286	\$163,876	....	....	17,886	\$294,185	....	....

IMPORTS OF TIN PLATES AND SHEETS.

TABLE 5.

PROVINCES.	1885.		1886.	
	Cwt.	Value.	Cwt.	Value.
Ontario.....	50,192	\$193,888	67,200	\$248,899
Quebec.....	65,979	261,189	75,302	251,240
Nova Scotia.....	31,410	101,695	29,346	96,101
New Brunswick.....	16,039	59,830	7,769	29,316
Manitoba.....	1,487	4,848	1,415	4,380
British Columbia.....	8,503	36,029	35,933	145,413
Prince Edward Island.....	9,790	30,084	9,106	27,006
Totals.....	183,400	\$687,563	226,071	\$802,355

IMPORTS OF MERCURY.

TABLE 6.

PROVINCES.	1885.		1886.	
	Pounds.	Value.	Pounds.	Value.
Ontario	7,143	\$ 3,041	8,742	\$5,020
Quebec	1,793	795	1,422	684
Nova Scotia	2,608	1,094	1,648	1,052
New Brunswick .....	.....	3	20	11
Manitoba	2	3	80	44
British Columbia	3,064	1,273	4,210	1,981
Totals.....	14,610	\$ 6,209	16,122	\$3,792

PETROLEUM.

Summary.

The total quantity of crude petroleum produced in Canada in 1886 has not been obtained, as it has been impossible to get the statistics of that which has been sold and consumed as such; but, the great bulk of the product of the wells was refined, and the statistics of these quantities of refined oil, as well as their reduction into crude equivalent, are as below.

The quantity of Canadian refined oil (refined petroleum and naphtha) which has been inspected during the year 1886, is 6,469,667 imperial gallons. This, at the yield of 38 gallons refined oil from 100 crude, corresponds to 17,025,439 gallons of crude petroleum, or 486,441 barrels of 35 gallons. The spot value of this quantity of crude oil may be stated at \$437,797, if 90c. is taken as the average market price of a barrel.

Exports. 241,716 gallons only were exported in 1886, probably all crude oil.

Imports. The imports in 1886, on the contrary, are much larger, they amounted to:—1,584,422 gallons of refined; 2,595,429 gallons of crude; and, 468,095 gallons of other products of petroleum (heavy oils).

Tables of inspection returns.

In the following tables, A., B. and C., will be found condensed all the available official returns, giving some statistics of the petroleum production since 1868; but, before July 1880, it is impossible to tell what portion of the quantity of crude manufactured in Canada was domestic oil, as there was no discrimination in favor of Canadian petroleum until the Inspection Act was amended by 43 Vic., Chap. 21, on May 7th, 1880. Therefore, only in table C. is the production of oil from the Canadian wells given, but not the whole of that production, as the crude oil, utilized as such, is not included in the figures in that table.

RETURNS OF QUANTITIES OF CRUDE OIL USED BY REFINERIES IN CANADA, AND OF REFINED PETROLEUM AND TAR PRODUCED.

TABLE A.

Fiscal Years.	Crude Oil.	Refined Oils.	Tar and Residuum.	Measure.
1868 (a)	251,882	237,765	1,216	Wine Gallons.
1869	4,722,872	2,772,224	207,658	"
1870	16,792,127	10,736,636	1,117,617	"
1871	17,916,350	11,689,761	1,469,590	"
1872	19,934,047	12,323,991	1,140,107	"
1873	25,244,438	14,602,087	1,613,555	"
1874	9,251,070	6,752,282	828,858	"
1875	8,643,409	4,811,596	286,257	"
1876	9,417,901	4,838,215	262,733	Imperial Gallons.
1877	15,964,647	7,913,754	99,680	"

(a) Part of the year only.

PETROLEUM INSPECTED AND CORRESPONDING QUANTITIES OF CRUDE OIL.

TABLE B.

Fiscal Years.	Refined Oils Inspected.	Crude Equivalent Calculated.	Ratio of Refined to Crude.
1878	Imp. gallons. 4,493,760	Imp. gallons. 8,987,520	50 : 100
1879	5,559,005	11,118,010	50 : 100
1880	5,728,636	11,457,272	50 : 100

CANADIAN PETROLEUM AND NAPHTA INSPECTED AND CORRESPONDING QUANTITIES OF CRUDE OIL.

TABLE C.

Calendar Years.	Refined Oils Inspected.	Crude Equivalent Calculated.	Ratio of Refined to Crude.
1880 (a)	Imp. gallons. 3,233,854	Imp. gallons. 6,467,708	50 : 100
1881	5,380,081	10,760,162	50 : 100
1882	5,111,893	11,359,762	45 : 100
1883	6,204,544	13,787,875	45 : 100
1884	6,730,068	16,825,170	40 : 100
1885	5,853,290	14,633,225	40 : 100
1886	6,469,667	17,025,439	38 : 100

(a) Second half of year only.

The imports of petroleum are given in the three following tables for Imports. the calendar years 1885 and 1886; the returns of refined oils have been obtained from the Inland Revenue Department by calendar years since 1881:—

PETROLEUM AND NAPHTA IMPORTED.

TABLE 1.

Years.	Imperial Gallons.
1881.....	1,111,338
1882.....	1,226,918
1883.....	1,110,580
1884.....	1,231,984
1885.....	1,211,152
1886.....	1,584,422

CRUDE OIL IMPORTED.

TABLE 2.

Years.	Imperial Gallons.
1885.....	2,599,064
1886.....	2,595,429

IMPORTS OF CRUDE AND REFINED PETROLEUM.
TABLE 3.

PROVINCES.	1855.		1856.	
	Gallons.	Value.	Gallons.	Value.
Ontario.....	1,398,242	\$151,884	1,563,864	\$179,756
Quebec.....	612,149	62,461	759,312	69,526
New Brunswick.....	766,052	64,214	804,911	82,636
Nova Scotia.....	628,291	64,657	699,480	66,690
Prince Edward Island.....	213,824	12,756	170,736	18,818
Manitoba.....	18,475	1,821	7,627	871
British Columbia.....	173,083	54,344	173,921	50,934
Totals.....	3,810,116	\$412,137	4,179,851	\$469,231

The two following tables give the exports of Canadian petroleum (refined and crude) since the beginning of operations in 1861.

EXPORTS OF CANADIAN PETROLEUM.

Fiscal Years.	Wine Gallons.	Value.
1861	49,880	\$ 8,155
1862	1,744,140	236,792
1863	445,090	86,319
1864	265,765	55,663
1865	47,311	21,155
1866	6,515	2,878
1867	31,729	7,782
1868	46,282	9,341
1869	690,553	127,319
1870	4,748,557	966,461
1871	5,753,678	1,052,879
1872	7,897,054	1,341,099
1873	9,355,325	1,819,183
Totals.	31,081,879	\$5,735,026

EXPORTS OF CANADIAN PETROLEUM.

Years	ONTARIO.		QUEBEC.		NOVA SCOTIA.		NEW BRUNSWICK.		TOTAL.	
	Gallons.	Value.	Gallons.	Value.	Galls.	Value.	Galls.	Value.	Gallons.	Value.
(b) 1873.	5,781,879	\$ 1,261,424	84,442	\$ 24,732	3,758	1,420	....	...	5,869,579	\$ 1,287,576
1874.	22,955	1,254	4,734	857	1,257	398	....	....	28,946	2,509
1875.	583	66	11,051	2,081	202	67	....	....	11,836	2,214
1876.	2,065,907	469,708	467,068	113,558	797	284	....	....	2,533,772	583,550
1877.	1,401,143	317,715	27,630	4,381	3,110	917	....	....	1,431,883	323,013
1878.	602,460	84,336	2,764	457	3,947	778	....	....	609,171	85,571
1879.	232,688	16,584	369	62	2,114	386	....	....	235,171	17,032
1880.	1,601	446	470	101	1,014	204	....	....	3,085	751
1881.	....	....	....	....	501	99	....	....	501	99
1882.	....	....	479	102	640	184	....	....	1,119	286
1883.	11,562	358	659	109	1,062	243	....	....	13,283	710
1884.	1,096,440	29,771	886	137	722	254	42	6	1,098,090	30,168
1885.	335,945	(a) 9,980	573	96	1,449	486	....	....	337,967	10,562
1886.	238,628	9,282	2,571	470	17	103	....	....	241,716	9,855
Total.	11,791,291	\$2,220,924	603,696	\$147,143	21,090	\$5,823	42	\$6	12,416,119	\$2,353,896

(a) This figure, is by some mistake, stated to be 29,980 in the books of the Customs Dept.

(b) The difference in these figures and those for 1873 on p. 58 s. arises from the fiscal year being taken in the latter.

PHOSPHATE.

Summary.

The total quantity of Phosphate (Apatite) exported and manufactured in this country during the year 1886 has been 20,495 tons, valued at the mines at \$304,245. This tonnage is arrived at by adding to the export returns of the Customs Department the small quantity used in the manufacture of superphosphate at the Brockville works.

Production by districts.

Compared with the 1885 exports, it shews a decrease in 1886 of 8,474 tons, and of \$157,740 in the value at the mines.

The quantity of Phosphate stated above was partly mined in the Quebec district, and partly in the Ontario district, as follows:—

Quebec.....	19,435 tons
Ontario.....	1,060 "

The shipments by rail from Buckingham and from Templeton, obtained through the courtesy of Mr. J. A. Hcuston, Contracting Freight Agent, C.P.R., together with the shipments by water from Templeton, kindly sent us by Messrs. McLaurin and Blackburn, give a total of 20,195 tons for the Quebec district. This indicates that a small stock of about 760 tons must have been left over in Montreal at the end of 1886, on account, probably, of the very high ocean freights then ruling.

Exports.

EXPORTS OF PHOSPHATE (APATITE) FROM 1877 TO 1886.

YEARS.	ONTARIO (a.)		QUEBEC.		TOTAL.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
1877	?	?	2,823	\$47,084	2,823	\$47,084
1878	824	\$12,278	9,919	195,831	10,743	208,109
1879	1,842	20,565	6,604	101,470	8,446	122,035
1880	1,387	14,422	11,673	175,664	13,060	190,086
1881	2,471	36,117	9,497	182,339	11,968	218,456
1882	568	6,338	16,585	332,019	17,153	338,357
1883	50	500	19,666	427,168	19,716	427,668
1884	763	8,890	20,946	415,350	21,709	424,240
1885	434	5,962	28,535	490,331	28,969	496,293
1886	644	5,816	19,796	337,191	20,440	343,007
Totals..	8,983	\$110,888	146,044	\$2,704,447	155,027	\$2,815,335

(a.) The exports from Ontario before 1878 have not been kept separately, and cannot consequently be obtained from the books of the Customs Department.

PYRITES.

The export of pyrites to the United States from Canadian mines Exports. has been in 1886, 42,906 tons, valued at the mines at \$193,077, at the average price of \$4.50 a ton.

The increase over 1885 was 8,783 tons, and \$44,023 in value.

This quantity of pyrites was mined at the Albert and Crown Mines, Capelton, county of Sherbrooke, P.Q. The copper contents and copper value of the ore have been given on page 25 s. So far as we have been able to learn, there was no other mine worked in Canada in 1886, the ore of which was utilized for making sulphuric acid.

The following table shows the growth of the export of Canadian pyrites into the United States from 1881 to 1885, notwithstanding the heavy import duty. These ores were the first to be used in the United States for making sulphuric acid, and have always been in great favor:

EXPORTS OF CANADIAN PYRITES TO THE UNITED STATES FROM 1881 TO 1885.

Fiscal Year.	Tons.	Duty.
1881.....	10,812	\$29,786
1882.....	23,980	47,754
1883.....	25,211	39,879
1884.....	26,000	about 53,870
1885.....	34,123	73,734

The following tables give the quantity and the value of sulphuric Imports. acid and of the brimstone or crude sulphur imported in 1886. A small amount of pyrites was also imported, estimated at about 2,000 tons.

IMPORTS OF SULPHURIC ACID.

PROVINCES.	1885.		1886.	
	Pounds.	Value.	Pounds.	Value.
Ontario.....	294,139	\$4,769	55,743	\$ 733
Quebec.....	4,211	69	82,754	951
Nova Scotia.....	115,636	1,862	68,373	857
New Brunswick.....	115,570	1,718	139,644	1,589
Prince Edward Island.....	.....	....	2,045	24
Manitoba.....	886	17	194	4
British Columbia.....	14,837	551	15,678	531
Totals.....	545,279	\$8,986	364,431	\$4,689

IMPORTS OF BRIMSTONE OR CRUDE SULPHUR.

Provinces.	1885.		1886.	
	Pounds.	Value.	Pounds.	Value.
Ontario	1,749,198	\$21,505	2,225,598	\$24,046
Quebec	992,475	21,749	626,005	9,797
Nova Scotia	83,144	1,699	170,571	2,641
New Brunswick.....	40,044	785	34,513	702
Manitoba .....	.....	.....	370	11
British Columbia.....	10,339	239	5,393	179
Prince Edward Island.....	1,232	39	929	20
Totals	2,876,432	\$46,016	3,063,379	\$37,396

SALT.

By ELFRIC DREW INGALL, ASSOC. R.S.M.,
Mining Geologist to the Geological Survey of Canada.

Nearly all the salt produced in the Dominion of Canada is manufactured in Ontario, adjacent to Lake Huron, the largest number of working wells being situated in the county of Huron, whilst a few are being operated outside of this area in the counties of Lambton on the south, Bruce on the north, and Perth on the west. Situation of wells.

There were 19 wells working during the year 1886, six of which are located at Goderich, where the salt was originally discovered. The remainder of the works are located at the following places:—Dublin, Seaforth, Clinton, Hensall, Exeter, Blyth, Kincardine, Brussels, Courtwright, Elarton and Wingham.

Numerous other wells have been bored and “blocks” operated besides these, but are not now working, owing to the depression in the industry.

The first discovery was made at Goderich, in 1865, in a boring made there in the search for petroleum.

In 1876, Mr. Attrill put down a diamond drill-hole near Goderich, which came upon the first salt bed at a depth of 997 feet from the surface, and in a depth of 520 feet below this, the hole penetrated six salt beds aggregating 126 feet in thickness, the thinnest bed measuring six feet and the thickest, thirty-five feet.

These borings are all comprised in a strip of country about 100 miles in length, along the eastern shore of Lake Huron, and about forty miles wide.

The salt occurs at a greater depth in passing eastwards from the lake shore, a boring at Seaforth, about thirty miles south-east from Goderich, having struck salt at a depth of 1,035 feet.

The most recently bored well is at Wingham, where a bed of salt, thirty feet thick, was struck at a depth of 1,090 feet.

The process of manufacture resorted to, consists of pumping the brine from the wells, and evaporating, by artificial heat, in large pans made of boiler plate. From these the salt is raked, from time to time, as it crystallises out from the solution, the pans being only emptied at intervals for cleaning. Process of manufacture.

These pans are from 25 to 30 feet wide and from 100 to 150 feet long, and are heated beneath by means of a system of flues. The fuel used is mostly wood, but at a few places, coal is mixed with it or used almost entirely. A few “blocks” are run in connection with flouring and saw mills, and the brine evaporated by the waste steam from the engines.

Products made. In general, four grades of salt are made.

Land—This is any dirty salt got in cleaning the pans or otherwise. It is kept on one side, and sold to the farmers for land-dressing.

Coarse—Clean, but coarsely crystallized salt, produced by the slower evaporation which takes place at the end of the pan furthest from the fire, or when the fires get low on Sunday. This is sold for packing pork and fish, or ground to make *dairy*.

Fine—This constitutes the great bulk of the product, and is of much finer grain than the last, being crystallised much smaller, from being evaporated more quickly.

Dairy—This is produced either by grinding the coarser salts, or crystallised very small by rapid evaporation.

The great bulk of the salt marketed is put up in barrels, which are supposed to hold 280 lbs. of salt. They cost from 20c. @ 25c. each, and at 7 1-7 bbls. to the ton, constitute a charge of \$1.43 @ \$1.78 per ton for packages. Some makers put up their product in sacks and small bags, which often cost more than the contained salt.

The brines vary in strength from 95° to 100° of the salometer, or in general compare very favourably in regard to strength and purity with the brines of other salt districts of the continent. Of late, however, it is stated that the wells in one part of the district have been giving a rather more impure brine, which yields a salt more largely charged with the deleterious earthy chlorides.

The following table shews the quantity and the value of the salt made and sold by the Canada Salt Association during its existence:

SALES OF SALT. (Lake Huron district.)

TABLE A.

YEAR.	Quantity.	Value.
Ending 28th March, 1883....	Tons. 40,121	\$ 233,091
“ “ “ 1884....	35,724	218,269
“ “ “ 1885....	30,711	167,171

These figures do not include local sales of land and other salt. The association of the salt manufacturers was discontinued at the end of March, 1885.

Packages employed.

Brines.

Statistics.

The following table gives the total sales of salt for the Lake Huron district, computed as explained below :—

SALES OF SALT OF ALL GRADES.—LAKE HURON DISTRICT.

TABLE B.

YEARS.	Barrels. (280 lbs.)	Tons.	Value.	Average Value per Ton.	Approximate Value of Packages. \$
Ending 28 March 1883...	315,236	44,133	\$256,400	\$5.80	Not included in figures given.
“ “ 1884...	280,685	39,296	240,096	6.10	“
“ “ 1885...	241,300	33,782	183,888	5.45	“
“ 31 Dec. 1886...	445,421	62,359	227,195	3.65	66,813

Note.—The figures in this table are obtained by adding 10 per cent. to the figures given in Table A for 1883, 1884 and 1885, to represent the estimated amount of local sales not given in these figures. The items for 1886 are made up from the returns of the manufacturers themselves made to this office.

There is some reason to believe that the figures given above for 1886, are too high, as a discrepancy appears on comparing the amount above given with the quantities known to have been shipped from this district over the railways, and entered for export at the shipping ports. This discrepancy amounts to some 12,000 tons, and may be partly accounted for under the following heads.—Local sales in the immediate vicinity of the works which, however, in the opinion of some of the leading makers, do not probably amount to more than 3000 tons. This would represent sales of land salt and a certain quantity of the finer grades. Besides this, a considerable quantity must leave Goderich and Kincardine direct by water, to supply all the fisheries of the Lakes, and also for shipment to the North-west, being transferred to the Canadian Pacific Railway, at Port Arthur. It seems doubtful, however, if these are sufficient to account for the whole discrepancy.

That there has been an increase in the sales of salt from this district in 1886, is shewn by the following figures which give the shipments over the Grand Trunk Railway for the past few years.

TABLE C.

Salt Shipped by Rail—L. Huron District—G. T. Ry.	
Years.	Tons.
1883.....	35,961
1884.....	34,850
1885.....	38,600
1886.....	41,577

The greater facility of purchase due to the great fall in price on the dissolution of the Salt Association on 28th March, 1885, has evidently led to much larger sales. This condition of things existing during the last three-quarters of 1885, makes the total of shipments for that year high, and the discrepancy between that and the succeeding year, much less than that shewn in Table B.

Tables D., E., F., G. and H., given below, shew the state of the industry, at intervals, as far back as 1871, thus giving as complete a record of the past as it is possible now to obtain.

The study of tables D. and E. will shew that the quantity of salt manufactured in the Dominion, outside of the Lake Huron district, is very small, there being in 1881 only four works elsewhere, employing eight hands, and producing only \$1,400 worth of salt. From this it will be seen that the history of the salt industry in the Lake Huron district, as herein given, is practically identical with that for the whole Dominion.

SALT WORKS.—CENSUS 1871.

TABLE D.

District.	Number of Works.	Hands Employed.				Yearly Wages.	Value of Raw Material.	Value of Articles Produced.	
		Over 16.		Under 16.					
		Men.	W.	B.	G.				
Huron, S., Ont.....	8	89	..	..	..	\$30,290	\$ 9,475	\$ 59,596	} L. Huron Dis.
“ N. “	7	74	..	..	..	27,200	8,750	53,517	
Bruce, S. “	1	12	..	..	..	3,500	1,500	6,886	
Yarmouth, N. S.....	1	5	4	..	..	1,800	4,000	16,600	
Cumberland, “	1	1	..	..	..	240	210	600	
GRAND TOTALS, 1871.									
Ontario	16	175	..	..	..	60,990	19,725	119,999	
Nova Scotia	2	6	4	..	..	2,040	4,210	16,600	
Total.....	18	181	4	..	..	\$63,030	\$23,935	\$136,599	

SALT WORKS.—CENSUS 1881.

TABLE E.

District.	No.	Hands Employed.				Yearly Wages.	Value of Raw Material.	Value of Articles Produced.	No. of Bbls.	Capital Invested.
		Over 16.		Under 16.						
		Men.	W.	B.	G.					
Cumber'd, NS	1	2	..	..	..	\$ 150	\$ 25	\$ 150	....	....
Kings, N.B..	1	2	..	..	..	180	300	600	....	....
Toronto	1	1	..	1	..	125	225	400	....	....
Perth, S ...	1	12	..	..	..	4,500	30,000	50,000	....	} Lake Huron District.
Huron, S ...	1	25	..	..	..	5,625	10,000	22,000	....
do. C ...	19	151	..	5	10	53,837	107,375	265,398	340300	
do. N ...	1	15	..	..	..	5,000	5,000	20,000	45000	
Bruce, S ...	1	16	..	2	..	6,000	15,000	33,000	80000	
Lambton, S .	1	3	..	..	..	3,000	....	4,000	6700	
Essex	1	2	..	..	..	100	100	300	....	....
GRAND TOTALS, 1881.										
Nova Scotia:	1	2	..	..	..	150	25	150	..	50
N. Brunswick	1	2	..	..	..	180	300	600	..	200
Ontario	26	225	..	8	10	78,187	167,700	395,098	..	297,850
Total.....	28	229	..	8	10	\$78,517	\$168,025	\$395,848	..	\$298,100

QUANTITY AND VALUE OF SALT OF ALL GRADES MADE IN THE YEARS 1872-1873.

TABLE F.

YEARS.	Barrels. (280 lbs.)	Tons.	Value.	Average value per ton.	Approx. value of containing packages @ 20c.
1872	361,348	50,589	\$288,909	\$5.71	67,927
1873	473,290	66,261	444,578	6.71	90,315

This table is compiled from figures given in Mr. Lionel Smith's Report on the Salt industry, Geological Survey of Canada. Report of Progress 1874-75.

Mr. Smith's Report also gives the following items, which have been arranged in tabular form below.

CAPITAL AND LABOUR EMPLOYED, 1873.

TABLE G.

Kind and No. of works.		Capital Invested.	Hands Employed	Wages paid per season.
With wells.....	16	\$555,000	298	\$70,325
Without wells.....	5	45,000	64	15,537
Table salt factories .	3	24,000	22	3,662
Totals.....	24	\$624,000	384	\$89,524

CONSUMPTION OF WOOD, 1873.

TABLE H.

No. of works.	Cords of wood.	Value.
21	50,635	\$143,096

Present state
of the industry.

The industry is at present much depressed, for although, as shewn, a larger quantity has been sold than in past years, the prices obtained have been so low as to leave a very narrow margin of profit. In 1872-3, Mr. Smith's report gives the average price of the barrel of salt as 86c. and 95c., whilst at present, 50c. is the highest price it brings; and when from this we deduct 20c. as the least cost of the barrel itself, only 30c. is left as the value of the contents, the cost for fuel, wages, commissions, &c., amounting to close on this figure.

There being no standard legally fixed for the size of the barrel, the quantity is apt to vary; the barrel being taken as the unit of sale, there is a great temptation for the manufacturers to make up for low prices by giving less weight, a temptation which does not appear to be always resisted, so that the barrel of salt sold does not always contain its supposed complement of 280 lbs.

Neither is there, as in the neighbouring salt district of Michigan, any legal obligation to give the public an article which has been properly dried by draining for a fixed period of time; and further, the absence of a proper system of inspection, necessarily leads to varia-

tions in the purity of the material put on the market. It has been stated, in this connection, that some of the salt sold contains a deleterious proportion of the deliquescent earthy chlorides, but of course nothing can be definitely asserted on this point, without making a complete series of analyses of a number of carefully collected samples.

The industry, as before stated, is certainly much depressed, but as to the precise remedy for this, the manufacturers differ.

A great many of them think that a system of government inspection would do good; others lay more stress upon the necessity for the standard content of a barrel being legally fixed. Were both of these arrangements made, it would undoubtedly be beneficial, as putting all the competing manufacturers upon a fair and equitable basis, and ensuring to the public a standard quantity and quality.

Another thing which militates against the Canadian salt industry is the competition of English salt coming in duty free, and with discriminatory freight rates in its favour. Even were this removed, there would remain the natural disadvantage of the distance of the chief market for salt in the Dominion, *i. e.*, the sea fisheries, from the centre of production, the cost of carrying the salt over such long distances, doubling, or more than doubling, its price at the point of consumption.

The discrimination mentioned in favour of the competing English salt arises from the fact that both the railways and steamship lines can afford to carry material moving west at a very much lower rate than that moving east. In fact, a large quantity of English salt comes out to Montreal as ballast, paying either none or a mere nominal freight charge.

These various causes limit the Canadian salt manufacturers market practically to Ontario, a demand too limited for the capacity of even the present works, most of which consequently only work for a few months in the year.

The large area underlain by the salt, coupled with the great facilities for starting numbers of new works, not to speak of the large reserve capacity of the present ones, would enable this district to supply all the salt demand of the Dominion for years to come.*

Tables J, K, L, M, N and O, speak for themselves. Table O shews that large quantities of salt, not produced in Canada, are exported. This is probably English salt coming out in vessels bound for Canadian ports, as ballast, &c., and shipped through to the United States. Imports and exports.

* For further particulars respecting the geology of the Lake Huron salt region, analyses of brines, &c., &c. See Reports of Progress of the Geological Survey of Canada, 1866-9, 1874-5 and 1876-7.

Tables J, K, L, N and O, are compiled from figures obtained from the Department of Customs, Ottawa.

IMPORTS OF SALT (DUTY FREE) FOR FISHERIES.

TABLE J.

PROVINCES.	1885.		1886.	
	Pounds.	Value.	Pounds.	Value.
Ontario	8,176,239	\$13,307	6,230,657	\$10,159
Quebec	84,505,625	125,709	60,465,880	79,687
Nova Scotia.....	44,994,639	67,742	103,153,827	140,458
New Brunswick.....	36,985,231	60,815	30,679,640	49,519
Prince Edward Island.	8,671,320	9,326	7,199,160	8,165
Manitoba.....	111,552	255	133,168	935
British Columbia.....	712,320	1,118	672,000	1,458
Totals	184,156,926	\$278,272	208,534,332	\$290,381

IMPORTS OF COARSE SALT PAYING DUTY.

TABLE K.

PROVINCES.	1885.		1886.	
	Cwts.	Value.	Cwts.	Value.
Ontario.....	699,535	\$1,948	855,000	\$2,177
Nova Scotia.....			600	4
British Columbia.....	12,732	47	10,336	38
Totals.....	712,267	\$1,995	865,936	\$2,219

IMPORTS OF FINE SALT, PAYING DUTY.

TABLE L.

PROVINCES.	1885.		1886.	
	Pounds.	Value.	Pounds.	Value.
Ontario	1,499,432	\$ 6,852	688,211	\$ 2,431
Quebec	6,133,505	13,810	6,564,801	24,994
Nova Scotia.....	596,382	2,154	302,688	1,093
New Brunswick.....	1,466,480	4,433	1,800,890	6,177
Prince Edward Island.....	46,680	145	29,698	76
Manitoba	2,700	26	50,300	230
British Columbia.....	861,949	3,559	1,311,040	5,606
Totals.....	10,607,128	\$30,979	10,747,628	\$40,607

EXPORTS OF SALT FROM CANADA TO THE UNITED STATES.

TABLE M.

Year ending 30th June	NOVA SCOTIA, NEW BRUNSWICK, PRINCE EDWARD ISLAND.			QUEBEC, ONTARIO, MANITOBA, NORTH-WEST TERRITORY.		
	Pounds.	Bushels.	Value.	Pounds.	Bushels.	Value.
1883	3,053,608	54,528	\$7,555	28,853,886	515,243	\$79,514
1884	6,586,508	117,616	13,694	17,878,254	319,254	60,695
1885	2,180,200	38,932	4,573	11,226,236	200,468	34,954
1886	3,678,418	65,686	7,901	25,187,862	449,783	5,286

Year ending 30th June	BRITISH COLUMBIA.			TOTAL.		
	Pounds.	Bushels.	Value.	Pounds.	Bushels.	Value.
1883	14,760	264	\$120	31,922,254	570,040	\$87,189
1884	25,180	450	155	24,489,942	437,320	74 454
1885	122,810	2,193	612	13,529,246	241,593	40,139
1886	73,387	1,310	130	28,939,667	516,779	53,317

NOTE.—Figures taken from the annual publications relating to Imports and Exports issued by the U. S. Treasury Department.

TABLE N.—EXPORTS OF SALT, THE PRODUCE OF CANADA

YEAR.	Ontario.		Quebec.		Nova Scotia.		New Brunswick.		Manitoba.		British Columbia.		Prince Edward Island.		Total.	
	Bushels.	Value.	Bushels.	Value.	Bushels.	Value.	Bushels.	Value.	Bushels.	Value.	Bushels.	Value.	Bushels.	Value.	Bushels.	Value.
1873.																
1874.			1,089	\$312			42	\$10								
1875.	541,649	\$66,512													542,800	\$66,884
1876.	905,522	88,215	3,833	889											909,355	84,154
1877.	702,494	59,992	2,150	685											704,644	60,677
1878.	403,798	36,004	3,297	1,023											407,095	37,027
1879.	587,805	48,560	2,616	731	345	\$76									590,766	49,367
1880.	464,661	45,366	1,887	605	1,088	240									467,641	46,211
1881.	396,608	43,121	6,600	1,506											343,208	44,627
1882.	181,007	18,170	751	180											181,758	18,180
1883.	199,783	19,492													199,783	19,492
1884.	167,029	15,291													167,029	15,291
1885.	246,584	18,721													246,584	18,721
1886.	224,595	16,816	210	35	240	40	90	25						18	\$5	\$5
															224,943	16,886

YEAR.	Ontario.		Quebec.		Nova Scotia.		New Brunswick.		Manitoba.		British Columbia.		Prince Edward Island.		Total.	
	Bushels.	Value.	Bushels.	Value.	Bushels.	Value.	Bushels.	Value.	Bushels.	Value.	Bushels.	Value.	Bushels.	Value.	Bushels.	Value.
1873.																
1874.			168,560	\$26,838			36,605	\$9,140								
1875.	152,475	\$38,171	40,818	1,773	190,312	\$20,259	31,961	7,634							6,495	\$1,481
1876.	169,025	38,018	7,893	2,581	68,683	20,534	17,509	4,004							17,867	4,688
1877.	85,856	17,822	1,634	582	73,978	19,189	15,092	4,452							18,110	5,650
1878.	49,676	10,824	5,500	1,673	78,807	18,062	28,259	4,452							14,874	3,535
1879.	111,852	8,962	5,500	1,673	38,100	7,684	13,620	2,237							14,874	3,535
1880.	106,106	23,019	136,002	42,878	38,147	6,670	13,792	2,958							7,570	2,038
1881.	112,940	31,236	29,005	12,231	84,508	14,895	19,103	5,698							5,768	1,831
1882.	49,423	36,236	49,892	47,362	38,955	7,900	3,447	2,947							294,980	77,841
1883.	22,112	4,639	9,531	38,115	39,518	14,875	34,660	5,437							199,183	54,631
1884.	400	200	47,131	6,245	59,610	12,700	30,880	4,895							689,181	102,340
1885.	6,547	1,963	10,622	3,412	106,022	24,900	50,584	10,619							192,561	56,165
1886.			10,022	3,729	39,461	8,523	24,567	3,751							460	84
1887.			10,022	3,729	39,461	8,523	24,567	3,751							194,209	58,174
1888.			3,448	1,928	30,612	6,383	168,380	7,985							355	73
			3,448	800	43,677	8,683	27,396	5,018							380	62
															74,951	14,568

EXPORTS OF SALT NOT THE PRODUCE OF CANADA.

SILVER.

By ELFRIC DREW INGALL, Associate R. S. M.
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The following tables, compiled from the books of the Customs Exports Department at Ottawa, give a record of the exports of silver ore from Canada for the past sixteen years:—

EXPORTS OF SILVER ORE FROM 1871 TO 1873.

Fiscal Year.	Ontario.	British Columbia.	Total.
1871	\$595,261	\$	\$595,261
1872	1,087,839	803	1,088,642
1873	1,376,060	(a) 3,320	1,379,380
Total.	\$3,059,160	\$4,123	\$3,063,283

(a) Probably from near Fort Hope.

EXPORTS OF SILVER ORE FROM 1873 TO 1886, INCLUSIVE.

Year.	Ontario.	Quebec.	New Brunswick.	Manitoba.	British Columbia.	Total.
1873	\$1,241,598	\$	\$	\$	\$2,160	\$1,243,758
1874	493,163	. . . . .	. . . . .	. . . . .	300	493,463
1875	472,092	. . . . .	. . . . .	. . . . .	900	472,992
1876	354,178	. . . . .	. . . . .	. . . . .	. . . . .	354,178
1877	33,722	8,626	500	. . . . .	. . . . .	42,848
1878	665,665	50	. . . . .	. . . . .	. . . . .	665,715
1879	154,273	. . . . .	. . . . .	. . . . .	. . . . .	154,273
1880	65,205	3,000	. . . . .	. . . . .	. . . . .	68,205
1881	15,105	. . . . .	. . . . .	. . . . .	10	15,115
1882	6,505	200	. . . . .	. . . . .	. . . . .	6,705
1883	8,620	. . . . .	. . . . .	. . . . .	. . . . .	8,620
1884	13,300	. . . . .	. . . . .	. . . . .	. . . . .	13,300
1885	28,801	. . . . .	117	258	. . . . .	29,176
1886	16,505	(a) 8,000	. . . . .	1,452	. . . . .	25,957
Total..	\$3,568,732	\$19,876	\$617	\$1,710	\$3,370	\$3,594,305

(a) Probably from Thunder Bay District.

Production of
Lake Superior
mines.

The figures given ought to be identical with the production year by year, as all such ores are exported, finding their market either in the United States or in England, so far, chiefly in the former country.

The Lake Superior district has been, and still is, the chief and almost only centre of production of the ores of this metal in Canada, and for many years, Silver Islet mine was the only producer in that district. Even during the operation of the other mines, their product was quite small compared with that of this one.

For this reason, the exports of silver ore from Ontario ought to agree with the figures in the following table:—*

SILVER ISLET MINE.

Year.	Product.
Before 1871.....	\$ 115,269
1871.....	648,132
1872.....	372,892
1873.....	347,716
1874.....	300,026
1875.....	175,083
Total.....	1,959,118

Discrepancy.

It will be observed, however, that there are considerable discrepancies.

The total production of Silver Islet mine, from 1868, when work was commenced, to the end of 1875, was as above, but from this amount we must take \$26,243, produced before the commencement of the fiscal year ending June 30th, 1871, and about \$89,000 produced in the latter half of 1875, in order to enable us to compare it with the amounts given for the fiscal years in the Trade and Navigation Returns for that period, which are as follows:—

Silver exported from Ontario during fiscal	}	\$3,910,438
years 1871-75 inclusive.....		
Production of Silver Islet during the same	}	1,843,875
period.....		
Difference.....		<u>\$2,066,563</u>

Only four other silver mines were worked to any extent in the first period of the history of silver mining in the Lake Superior region, viz., the Beck; 3 A.; Thunder Bay, and Shuniah, or Duncan Mines. Of these, the first three were worked at intervals from 1866 to 1874, whilst the latter was worked with various stoppages from 1867 to 1881. I have not, so far, been able to get any returns of the shipments year by year, from these mines, but their total product from commencement to close would, I think, be well covered by \$30,000. There is thus left a dis-

* From Paper on Silver Islet by Thomas Macfarlane, Trans. American Institute of Mining Engineers, Vol. VIII.

crepancy of over \$2,000,000 up to the end of 1875, which I have as yet been unable to account for.

Silver Islet mine was closed in the spring of 1884, but I have not, so far, been successful in obtaining figures of its yield year by year since 1875.

Previous to the operations ceasing, the Rabbit Mountain Mine had been started in 1883, and this was followed by the discovery of the others of that group of silver mines at present working in the Thunder Bay region. Shortly after this again, the Silver Mountain group of argentiferous lodes was discovered in the same district.

Some of the mines are at present being worked, and are affecting the production in a varying, but continuously increasing, degree.

On comparing the export returns for Ontario to the end of 1886, as shewn in the above tables, with the quantity known to have been produced by all the Lake Superior silver mines to date, a discrepancy again appears, as shewn below :—

Total discrepancy in the available returns.

Produced by Silver Islet, from its commencement to its close.....	}	\$3,250,000
Produced by the Shuniah group of mines, from their commencement to their close, say.....		
Produced by the Rabbit Mt. and Silver Mt. groups of mines from their commencement to the end of 18 86.....	}	69,338
		<u>\$3,349,338</u>

Against this total we have \$6,627,892 shewn in the tables, p. 73 s, as exported from Ontario during this period, leaving a difference of \$3,288,554. Part of this would be accounted for by the overlapping of the returns of six months in the change from fiscal to calendar years, but making allowance for that, it would still leave about \$3,000,000 to be accounted for, which we have at present no means of doing.*

The exports of silver ore from Quebec given in the tables, are probably often referable to small lots of ore from the Lake Superior region passing out by way of Montreal, whilst the items given for the other provinces are probably small lots of ore sent through at various times from mines in process of being tested in those districts.

Besides the silver produced in Canada, and exported in the form of silver ores proper, a large quantity of the metal is sent out in a shape which would not bring it under that head in the Customs' entries. I refer to the silver contained in the copper ores exported from the Capelton group of mines in Quebec. This has been estimated at about \$167,000 for 1886.

* An investigation of the entries in the books of the Customs Department seems to show that the greater part of the silver ore entered as exported from Ontario was produced in the Lake Superior region. If this is so, it shews that the statistics of the silver ore production of that region, as gleaned from different sources, vary greatly. It is believed that the above figure, viz. :—\$3,349,338, based on data obtained by direct enquiry in the district is very nearly correct, and that the discrepancy is to be accounted for on the supposition that the values declared to the Customs officers have been continually over-estimated.

STRUCTURAL MATERIALS.

Granite.—The production in 1886, as reported to this office, from nine different quarries, is 6,062 tons, valued in the rough state at the quarries at \$63,309. We believe that this represents very nearly the whole production of Canada. New Brunswick was the largest producing province with 2,522 tons of a spot value in the rough of \$31,509.

Marble and Serpentine.—The returns from four quarries were 501 tons valued, in the rough state but quarried to sizes, at \$9,900; this is not a complete statement of the total production.

Imports.—The value of the imports of marble and of manufactures of stone or granite, N. E. S., (as classified in the books of the Customs department,) will be found in the following tables :

VALUE OF IMPORTS OF MARBLE.

PROVINCES.	1885.		1886.	
	Blocks, &c.	Slabs Sawn.	Blocks, &c.	Slabs, Sawn.
Ontario	\$1,368	\$46,559	\$1,879	\$44,330
Quebec	1,310	15,008	414	21,073
Nova Scotia	604	6,059	736	5,637
New Brunswick	170	5,430	737	6,420
Manitoba	16	139	12	78
British Columbia	46	1,355	.....	1,147
Prince Edward Island .....	.....	2,945	.....	2,683
T	\$3,514	77,495	3,778	81,368
	Blocks, &c.	3,514	.....	3,778
Totals .....	.....	\$81,009	.....	\$85,146

VALUE OF IMPORTS OF OTHER ORNAMENTAL STONES.

Manufactures of Stones or Granite, N. E. S.	1885.		1886.	
	Value.		Value.	
Ontario	\$26,826	.....	\$28,695
Quebec	8,871	.....	8,425
Nova Scotia	1,141	.....	1,037
New Brunswick	1,174	.....	1,058
Manitoba	201	.....	373
British Columbia	905	.....	1,052
Prince Edward Island	735	.....	443
Totals	\$39,853	.....	\$41,083

Slate.—The production in 1886, was 5,345 tons, the value of which at the quarries may be said to be \$64,675. It was nearly all sold in the Canadian market, as the exports were only 34 tons; and was all quarried in the province of Quebec. So far as ascertained, there were no slate quarries worked in the other provinces.

EXPORTS OF SLATE.

YEARS.	QUEBEC.	
	Tons.	Value.
1876.....	150	\$3,369
1877.....	753	12,415
1878.....	30	692
1879.....	20	76
1880.....	....	....
1881.....	420	8,100
1882.....	34	1,545
1883.....	739	9,840
1884.....	539	6,845
1885.....	346	5,274
1886.....	34	495
Total.....	3,065	\$48,651

IMPORTS OF SLATE.

PROVINCES.	1885.	1886.
Ontario.....	\$13,920	\$16,253
Quebec.....	8,033	8,071
Nova Scotia.....	1,362	1,438
New Brunswick.....	2,505	3,130
Prince Edward Island.....	81	182
Manitoba.....	190	329
British Columbia.....	202	289
Total.....	\$26,293	\$29,692

Flagstone.—The tables of exports and imports are appended. The Dudswell flagstone quarries produced in 1886 about 70,000 sq. feet; value at the quarries \$7,875. No other returns of flagstones were received.

IMPORTS OF DRESSED FLAGSTONES.

PROVINCE.	1885.		1886.	
	Tons.	Value.	Tons.	Value.
Ontario.....	1,148	\$6,505	1,494	\$11,513

Building Stones.—The compilation of such statistics as could be reached, is given below, with the tables of exports and imports (as classified by the Customs Department).

PRODUCTION OF BUILDING STONES IN 1886.

As returned to this office, but estimated to be three to four-fifths only of the total production.

PROVINCES.	No. of Returns.	Cubic Yards.	Value.
Ontario.....	53	117,523	283,573
Quebec.....	17	28,312	185,340
Nova Scotia.....	15	9,473	84,051
New Brunswick.....	3	2,728	24,970
Prince Edward Island.....	4	1,510	2,265
British Columbia.....	2	6,231	62,310
Total.....	94	165,777	\$642,509

VALUE OF EXPORTS OF STONE AND MARBLE UNWROUGHT.

Years.	Ontario.	Quebec.	Nova Scotia.	New Brunswick.	British Columbia.	Prince E'd Island	Total.
1873	\$ 26,145	\$ 5,487	\$ 37,069	\$131,368	\$2,412	\$	\$ 202,481
1874	54,298	1,282	30,614	131,901	....	80	218,175
1875	34,108	1,741	3,184	59,060	....	10	98,103
1876	19,725	209	4,914	55,178	....	....	80,026
1877	7,969	2,836	7,372	28,639	....	....	46,816
1878	8,415	269	5,504	39,519	....	....	53,707
1879	12,496	159	11,670	26,995	....	....	51,320
1880	11,282	580	14,991	50,270	....	....	77,123
1881	10,432	932	16,407	66,287	....	....	94,058
1882	22,343	3	18,219	34,718	....	....	75,283
1883	14,111	30	14,375	23,088	....	....	51,604
1884	24,565	6	10,617	26,145	....	....	61,333
1885	14,810	.....	15,575	19,703	....	....	50,088
1886	27,922	.....	18,377	26,954	....	....	73,253
Totals	\$288,621	\$ 13,534	\$ 208,888	\$719,825	\$2,412	\$ 90	\$1,233,370

VALUE OF EXPORTS OF STONE AND MARBLE, WROUGHT.

PROVINCES.	1884.	1885.	1886.
Ontario	\$ 412	\$ 58	\$ 103
Quebec.....	1,135	105	1,206
Nova Scotia.....	50	2,162	121
New Brunswick.....	18,551	14,321	18,596
Totals.....	\$20,148	\$16,646	\$20,026

IMPORTS OF BUILDING STONES.

Dressed Freestone, and all other Building stone.	1885.		1886.	
	Tons.	Value.	Tons.	Value.
Ontario	986	\$3,949	777	\$5,108
Quebec .....	....	16	5	185
New Brunswick.....	140	588	2	10
Totals.....	1,126	\$4,553	784	\$5,303
Rough Freestone, Sandstone and Building stone.				
Ontario	4,883	\$28,409	7,499	\$39,282
Quebec	206	1,509	202	1,909
New Brunswick.....	30	393	25	453
British Columbia.....	4	61	....	....
Totals	5,123	\$30,373	7,726	\$41,644

Lime and
Cement.

Lime and Cement.—It is impossible, at present to estimate the proportion of the returned production to the total production, as the names of many producers were not on our lists.

LIME PRODUCTION IN 1886, AS RETURNED TO THIS OFFICE.
(Incomplete Return.)

PROVINCES.	No. of Returns	Bushels.	Value.
Ontario.....	49	783,450	\$140,290
Quebec.....	16	401,700	75,700
Nova Scotia.....	2	16,000	3,800
New Brunswick.....	14	316,380	58,120
Prince Edward Island.....	2	11,720	2,260
Manitoba.....	1	2,000	460
North-West Territory.....	2	700	625
British Columbia.....	1	4,000	2,500
Totals.....	87	1,535,950	\$283,755

VALUE OF EXPORTS OF LIME.

PROVINCES.	1884.	1885.	1886.
Ontario	\$3,805	\$3,660	\$4,245
Quebec	367	15	12
Nova Scotia	2,252	1,668	52
New Brunswick	2,666	9,886	25,258
Manitoba .....	....	....	106
Prince Edward Island .....	....	....	9
Totals	\$9,090	\$15,229	\$29,682

IMPORTS OF LIME.

Provinces.	1885.		1886.	
	Barrels.	Value.	Barrels.	Value.
Ontario	2,405	\$1,875	2,659	\$2,064
Quebec	3,823	3,099	3,115	2,269
Nova Scotia	673	648	464	438
New Brunswick	1	1	6	6
Manitoba	284	271	451	394
British Columbia	4,917	4,792	4,005	3,572
Totals	12,103	\$10,686	10,700	\$8,743

IMPORTS OF HYDRAULIC CEMENT.

Provinces.	1885.		1886.		Cement.
	Barrels.	Value.	Barrels.	Value.	
Ontario	4,417	\$3,797	3,553	\$3,408	
Quebec	53	104	1,414	2,119	
Nova Scotia	28	56	9	15	
New Brunswick	737	787	1,576	1,840	
Prince Edward Island	75	94	25	31	
British Columbia .....	.....	.....	564	1,896	
Totals	5,310	\$4,838	7,141	\$9,309	

IMPORTS OF CEMENT IN BULK OR IN BAGS.

PROVINCES.	1885.		1886.	
	Bushels.	Value.	Bushels.	Value.
Ontario.....	5,666	\$1,354	4,520	\$1,134
Quebec.....			918	470
New Brunswick.....	150	100		
Totals.....	5,816	\$1,454	5,438	\$1,604

VALUE OF IMPORTS OF PORTLAND CEMENT.

PROVINCES.	1885.	1886.
Ontario.....	\$ 3,296	\$ 5,049
Quebec.....	81,557	131,238
Nova Scotia.....	8,369	5,900
New Brunswick.....	3,086	2,999
Prince Edward Island.....	377	290
Manitoba.....	21	3
British Columbia.....	9,972	3,358
Totals.....	\$106,678	\$148,837

Sand and Gravel.

Sand and Gravel.—The production and home consumption of these materials could not be fairly estimated.

EXPORTS OF SAND AND GRAVEL.

Years	ONTARIO.		QUEBEC.		NOVA SCOTIA.		NEW BRUNSWICK.		MANITOBA.		TOTAL.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
1877	11,996	\$ 2,141	..	..	2	\$ 10	..	\$ ..	..	\$ ..	11,998	\$ 2,151
1878	49,644	7,668	71	288	425	425	..	..	..	..	50,140	8,381
1879	46,909	9,078	90	360	....	....	..	..	..	..	46,999	9,438
1880	53,951	11,177	..	..	....	....	..	..	..	..	53,951	11,177
1881	58,659	15,060	..	..	10	15	17	40	7	14	58,693	15,129
1882	59,751	15,611	7	7	400	600	..	..	..	..	60,158	16,218
1883	55,346	14,065	..	..	....	....	..	..	..	..	55,346	14,065
1884	72,499	14,465	..	..	1242	5513	..	..	..	..	73,741	19,978
1885	110,058	20,504	..	..	603	2374	..	..	..	..	110,661	22,878
1886	124,662	23,902	..	..	200	200	3	124	..	..	124,865	24,226
Tot'ls	643,475	\$133,671	168	\$655	2882	\$9137	20	\$164	7	\$14	646,552	\$143,641

IMPORTS OF SAND AND GRAVEL.

PROVINCES.	1885 (a)		1886	
	Tons.	Value.	Tons.	Value.
Ontario	6,369	\$15,304	11,298	\$15,002
Quebec	4,652	5,137	5,794	6,191
Nova Scotia	182	1,052	1,307	4,015
New Brunswick	507	1,007	906	1,120
Manitoba	35	80	30	83
British Columbia	114	140	27	45
Totals	11,859	\$22,728	19,362	\$26,456

(a) Ontario quantity for this year incomplete (only 2nd half of the year.)

Bricks and Tiles.—It is estimated that the figures in the two following tables represent about three-fourths of the total production. Bricks and Tiles.

Returns were also received of \$112,910 worth of miscellaneous clay products such as glazed sewer pipes, pottery, ornamental bricks, fire-bricks, bath-bricks and pressed paving stones, which were manufactured in the country in 1886.

PRODUCTION OF BRICKS DURING 1886, AS RETURNED TO THIS OFFICE.

(Incomplete return)

PROVINCES.	No. of Returns.	Thousand.	Value.
Ontario	188	103,928	\$631,892
Quebec	23	14,175	83,025
Nova Scotia	16	7,190	50,630
New Brunswick	14	5,957	30,908
Prince Edward Island	8	1,640	12,120
Manitoba	4	1,350	14,475
North-West Territory	3	800	9,400
British Columbia	5	4,305	41,150
Totals	261	139,345	\$873,600

PRODUCTION OF TILES DURING 1886, AS RETURNED TO THIS OFFICE,
(incomplete return).

PROVINCES.	No. of Returns.	Thousand.	Value.
Ontario	74	12,139	\$139,307
New Brunswick	7	177	2,310
Prince Edward Island	1	100	1,000
Totals	82	12,416	\$142,617

IMPORTS OF BUILDING BRICKS.

PROVINCES.	1885,		1886,	
	Thousand.	Value,	Thousand.	Value.
Ontario	1,508	\$6,128	213	\$1,269
Quebec	294	2,847	119	1,133
New Brunswick	6	40	13	59
Nova Scotia	3	18	2	11
Prince Edward Island .....	....	....	3	57
Manitoba	51	1,043	....	....
Totals	1,862	\$10,076	350	\$2,529

IMPORTS OF DRAIN TILE AND GLAZED SEWER PIPE.

PROVINCES.	1885.	1886.
Ontario	\$31,164	\$45,706
Quebec	13,778	8,510
Nova Scotia.....	325	....
New Brunswick.....	1,283	979
Prince Edward Island....	....	16
Manitoba.....	1,536	506
British Columbia.....	1,743	654
Totals	\$49,829	\$56,371

IMPORTS OF FIRE CLAY.

PROVINCES.	1885 (a)		1886.	
	Cwts.	Value.	Cwts.	Value.
Ontario	11,345	\$5,945	20,750	\$5,033
Quebec ..	30,286	4,338	78,863	10,273
Nova Scotia.....	1,246	1,474	2,152	704
New Brunswick.....	983	172	780	84
Manitoba	130	130	240	120
British Columbia.....	414	211	750	330
Prince Edward Island	54	29	90	27
Totals.....	44,458	\$12,299	103,625	\$16,571

(a) Ontario and Nova Scotia quantities for this year are incomplete.

IMPORTS OF OTHER CLAYS N. E. S.

PROVINCES.	1885.		1886.	
	Cwts.	Value.	Cwts.	Value.
Ontario	3,720	\$5,108	16,369	\$3,238
Quebec	18,358	2,953	12,787	1,553
New Brunswick.....	2,176	237	13,203	279
Totals.....	24,254	\$8,298	42,359	\$5,070

IMPORTS OF FIRE BRICKS, TILES, &c.

PROVINCES.	1885.	1886.
Ontario	\$18,611	\$23,887
Quebec.....	18,971	25,903
Nova Scotia.....	3,890	4,216
New Brunswick.....	4,975	6,735
Prince Edward Island ...	134	41
Manitoba.....	279	79
British Columbia.....	1,454	1,226
Totals.....	\$48,314	\$62,087

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