CANADA - DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
MINING, METALLURGICAL AND CHEMICAL BRANCH

PRELIMINARY REPORT

ON THE

MINERAL PRODUCTION OF CANADA

DURING THE CALENDAR YEAR

1928

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LIST OF PUBLICATIONS

PREPARED IN THE

MINING, METALLURGICAL AND CHEMICAL BRANCH
DOMINION BUREAU OF STATISTICS

MINERAL PRODUCTION (Mining and Metallurgy)

General Reports

Preliminary Reports (semi-annual) on the Mineral Production of Canada.

Annual Report on the Mineral Production of Canada. (In one volume).

A comprehensive record of the mining industry embodying historical and world data, detailed information on mineral production, imports and exports for Canada and general statistics relative to the mining industry on capital investment, employment, fuel consumption and power equipment arranged in 11 chapters each dealing with a particular branch of the industry. Statistics on production of trade in mineral products appear in detail in the appropriate chapters. A list of operating companies with their office and plant addresses is included. Fully indexed. Chapter titles are: Canada—The Provinces—The Gold Mining Industry—The Silver Mining Industry—The Nickel-Copper Industry—Miscellaneous Metal Mining Industries—The Non-Ferrous Smelting and Refining Industry—The Coal Mining, Coke, Natural Gas, Peat and Petroleum Industries—Non-Metal Mining Industries (Other than Fuels)—The Clay Products and Other Structural Materials Industries—Directory of Reporting Firms—Notes on the Methods of Computing Values—Index.

Coal—

Monthly and Quarterly Reports on Coal and Coke Statistics for Canada.

A condensed report on production, imports and exports of coal and coke is issued monthly, publication being made about the fifteenth of the next following month.

A more general review is published quarterly, showing statistics for each month, for the quarter, and for the year to date on the output by coal-mining districts and by provinces, imports and exports by ports and by kinds of coal, employment in coal-mining, and tonnage lost. There is also a section on coke showing production, imports, exports, distribution and consumption by months and by provincial groups.

Annual Report on Coal Statistics for Canada.

Text and tables showing for Canada, and for each of the coal-producing provinces, historical and current data on output, tonnage, lost, disposition of coal from the mines, domestic and foreign shipments, exports and imports by ports, consumption of coal, prices, employment, salaries and wages paid, power equipment, capital investment, etc.

Annual Bulletins—

(*a*) MINERAL PRODUCTION—

Metals.—Arsenic—Cobalt—Copper—Gold—Lead—Nickel—Metals of the Platinum Group—Silver—Zinc—Miscellaneous Metals including Aluminium, Antimony, Chromite, Iron ore, Manganese, Mercury, Molybdenum, Tin, Tungsten.

Non-Metals.—Abrasives—Asbestos—Coal—Feldspar—Gypsum—Iron Oxides—Mica — Natural Gas — Petroleum — Quartz — Salt — Talc and Soapstone — Miscellaneous Non-Metallic Minerals including Actinolite, Barytes, Fluorspar, Graphite, Magnesite, Magnesium Sulphate, Mineral Waters, Natro-Alunite, Peat, Phosphate, Pyrites, Sodium Carbonate, Sodium Sulphate.

Structural Materials.—Cement—Clay and Clay Products—Lime—Sand and Gravel—Stone and Slate.

(*b*) MINERAL INDUSTRY.—Each bulletin of this group shows in synopsis, material to be published subsequently as one chapter of the annual report on the *Mineral Production of Canada*. These bulletins are published in mimeograph form from time to time during the year as the necessary material becomes available.

By Industries.—Gold Mining Industry including Alluvial Gold Mining, Auriferous Quartz Mining and Copper-Gold-Silver Mining—Silver-Cobalt and Silver-Lead-Zinc Mining Industry—Nickel-Copper Industry—Miscellaneous Metal Mining Industries—The Non-Ferrous Smelting and Refining Industry—The Coal Mining, Coke, Natural Gas, Peat and Petroleum Industries—Non-Metal Mining Industries (Other than Fuels)—The Clay Products and Other Structural Materials Industries.

By Provinces.—Nova Scotia — New Brunswick — Quebec— Ontario — Manitoba — Saskatchewan—Alberta—British Columbia—Yukon.

SEE INSIDE BACK COVER FOR PUBLICATIONS ON MANUFACTURES BASED CHIEFLY ON MINERALS.

PREFACE

In each of the past three years, reports on the mineral production of Canada have disclosed new output records. Greater development has taken place in the production of both metals and non-metals than in almost any previous period. Revival of building operations consequent upon the rise in manufacturing activity, and the growth in the construction of private dwellings and new commercial establishments has given impetus to the industries producing structural materials such as bricks, lime and cement. Thus, throughout the mining industry there has been, for several years, notable evidence of strength and stability. While years ago, mining in Canada was regarded as a doubtful enterprise, the recent fulfilment of what were once regarded as extravagant claims, has done much to establish the industry in its proper place, relative to the other primary industries.

The cordial thanks of the Bureau are tendered to the Dominion Department of Mines and to the several Provincial Departments of Mines, which have assisted materially in the preparation of the report. In reference to the co-ordination of mining statistics between the Provincial Departments and this Bureau, it has been found possible to arrange for the co-operative collection of monthly statistics of coal production with all the provinces in which such records are obtained, namely, Nova Scotia, New Brunswick, Saskatchewan, Alberta and British Columbia. In the field of general mining statistics, co-operative arrangements with the Departments of Mines in Quebec, Ontario and British Columbia have been continued, thus preventing overlapping and duplication of work. All data collected by the Bureau on mining statistics are made available to the Dominion Department of Mines.

The thanks of the Bureau are also tendered to the mine and smelter operators, for assistance given and information made available. The railway and other transportation companies, as well as smelter operators outside of Canada, have also furnished data, the receipt of which is gratefully acknowledged.

The report has been prepared under the direction of Mr. S. J. Cook, B.A., A.I.C., F.C.I.C., chief of the Mining, Metallurgical and Chemical Branch of the Bureau. The data were assembled by W. H. Losee, B.Sc., assisted by Mr. B. R. Hayden, of the mineral division staff.

R. H. COATS,
Dominion Statistician.

DOMINION BUREAU OF STATISTICS, OTTAWA,
February 6, 1929.

Quantities and Values of Mineral Products from Canadian Sources, 1927 and 1928

		1927		1928		Per cent Increase (+) or Decrease (−)	
		Quantity	Value	Quantity	Value	Quantity	Value
Metallics			$		$		$
Arsenic	lb.	6,227,968	211,979	5,415,226	192,712	− 13·1	− 9·1
Bismuth	lb.	2,072	1,003	14,002	5,067	+ 575·6	+ 405·2
Cadmium	lb.	–	–	491,894	341,374	–	–
Cobalt	lb.	880,590	1,764,534	954,860	1,671,900	+ 8·4	− 5·2
Copper	lb.	140,147,440	17,195,487	201,940,172	28,488,118	+ 44·1	+ 65·7
Gold	fine oz.	1,852,785	38,300,464	1,891,050	39,091,472	+ 2·1	+ 2·1
Iron ore sold for export	tons	2,029	8,980	2,244	6,732	+ 10·6	− 25·0
Lead	lb.	311,423,161	16,477,139	334,830,237	15,474,003	+ 7·5	− 6·1
Nickel	lb.	66,798,717	15,262,171	96,755,578	22,318,907	+ 44·8	+ 46·2
Palladium, Rhodium, etc	fine oz.	11,545	554,190	13,087	605,563	+ 13·4	+ 9·3
Platinum	fine oz.	11,228	717,613	10,452	704,360	− 6·9	− 1·8
Silver	fine oz.	22,736,698	12,816,677	21,922,795	12,753,806	− 3·6	− 0·5
Zinc	lb.	165,495,525	10,250,793	186,611,850	10,250,589	+ 12·8	–
Total		–	**113,561,030**	–	**131,901,603**	–	+ **16·2**
Non-Metallics							
Fuels							
Coal	tons	17,426,861	61,867,463	17,554,293	62,681,136	+ 0·7	+ 1·3
Natural gas	M. cu. ft.	21,376,791	8,043,010	22,431,272	8,249,309	+ 4·9	+ 2·6
Peat	tons	–	–	1,497	5,845	–	–
Petroleum, crude	brls.	476,591	1,516,043	630,405	2,058,935	+ 32·3	+ 35·8
Total		–	**71,426,516**	–	**72,995,225**	–	+ **2·2**
Other Non-Metallics							
Actinolite	tons	86	1,075	70	875	− 18·6	− 18·6
Asbestos	tons	274,778	10,621,013	273,033	11,238,360	− 0·6	+ 5·8
Barytes	tons	56	1,268	127	2,847	+ 126·8	+ 124·5
Bituminous sands	tons	2,706	10,824	94	374	–	–
Diatomite	tons	266	6,650	433	10,825	+ 62·8	+ 62·8
Feldspar	tons	29,849	259,151	32,265	287,398	+ 8·1	+ 10·9
Garnets	tons	2	150	–	–	–	–
Graphite	tons	1,829	111,656	1,096	57,041	− 40·1	− 48·9
Grindstones	tons	2,251	125,017	2,233	123,391	− 0·8	− 1·3
Gypsum	tons	1,063,117	3,251,015	1,205,846	3,622,007	+ 13·4	+ 11·4
Iron oxides	tons	6,125	103,536	5,395	110,338	− 11·9	+ 6·6
Magnesite	tons	7,337	230,309	13,195	346,990	+ 79·8	+ 50·7
Mica	tons	2,738	174,377	3,580	82,179	+ 30·8	− 52·9
Mineral water	imp. gal.	303,530	14,624	269,360	33,433	− 11·3	+ 128·6
Natro-alunite	tons	7	248	–	–	–	–
Phosphate	tons	151	1,717	436	5,611	+ 188·7	+ 226·8
Pyrites (See note on page 32)	tons	50,863	198,388	65,759	206,380	+ 29·3	+ 34·3
Quartz	tons	233,984	496,361	277,226	520,812	+ 18·5	+ 4·9
Salt	tons	268,672	1,614,667	299,445	1,495,971	+ 11·5	− 7·3
Silica brick	M	1,791	79,527	3,224	155,502	+ 80·0	+ 95·5
Sodium carbonate	tons	805	9,995	560	6,160	− 30·4	− 38·4
Sodium sulphate	tons	5,659	11,319	6,015	69,155	+ 19·2	–
Soapstone	tons	–	57,174	–	40,171	–	− 29·7
Talc	tons	15,110	178,931	14,924	179,186	− 1·2	+ 0·1
Vocalnic dust	tons	105	735	485	9,795	–	–
Total		–	**17,559,730**	–	**18,661,801**	–	+ **6·3**
Clay Products and other Structural Materials							
Clay Products							
Brick—Soft mud process, Face	M	15,764	325,966	28,579	575,349	+ 81·2	+ 76·5
Soft mud process, Common	M	66,357	1,091,274	92,794	1,721,281	+ 39·8	+ 57·7
Stiff mud process (wire cut), Face	M	95,480	2,024,064	87,790	1,943,279	− 8·1	− 4·0
Stiff mud process (wire cut), Common	M	150,222	2,239,180	149,219	2,249,500	− 0·7	+ 0·5
Dry press, Face	M	39,753	833,570	33,575	720,735	− 15·5	− 13·5
Dry press, Common	M	14,617	187,062	21,866	307,190	+ 49·8	+ 64·2
Fancy or ornamental brick	M	620	29,372	598	28,753	− 3·4	− 2·1
Sewer brick	M	10,997	210,643	2,559	48,622	− 76·7	− 76·9
Paving brick	M	50	2,106	300	3,241	+ 500·0	+ 53·8
Firebrick	M	5,388	246,266	4,963	232,888	− 7·9	− 5·4
Fireclay and other clay	tons	5,070	35,961	5,150	34,142	+ 1·6	− 5·1
Kaolin	tons	24	120	5	25	− 79·2	− 79·2
Fireclay blocks and shapes	$	–	100,659	–	104,972	–	+ 4·3
Hollow blocks	tons	151,307	1,431,141	200,931	1,878,033	+ 32·8	+ 31·2
Roofing tile	No.	2,000	140	72,930	6,455	–	–
Floor tiles (quarries)	sq. ft.	135,285	32,559	162,520	45,205	+ 20·1	+ 38·8
Drain tile	M	22,259	598,098	21,442	628,175	− 3·7	+ 5·0
Sewer pipe, copings, flue linings, etc	tons	77,262	1,475,875	94,008	1,797,764	+ 21·7	+ 21·8
Pottery, glazed or unglazed	$	–	307,057	–	356,093	–	+ 16·0
Bentonite	tons	–	–	20	100	–	–
Other clay products	$	–	2,076	–	988	–	− 52·4
Total		–	**11,173,189**	–	**12,682,786**	–	+ **13·5**
Other Structural Materials							
Cement	brls.	10,065,865	14,391,937	10,954,184	16,583,703	+ 8·8	+ 15·2
Lime	tons	444,753	3,923,388	511,038	4,472,780	+ 14·9	+ 14·0
Sand and gravel	tons	22,952,819	6,055,601	22,753,452	6,223,145	− 0·9	+ 2·8
Stone	tons	7,306,436	9,265,304	8,048,995	9,919,827	+ 10·1	+ 7·1
Total		–	**33,638,230**	–	**37,199,455**	–	+ **10·6**
Grand Total		–	**247,356,695**	–	**273,446,864**	–	+ **10·5**

DOMINION BUREAU OF STATISTICS

R. H. COATS, B.A., F.S.S., (Hon.), F.R.S.C., Dominion Statistician

S. J. COOK, B.A., A.I.C., F.C.I.C., Chief of the Mining, Metallurgical and Chemical Branch

PRELIMINARY REPORT

ON THE

MINERAL PRODUCTION OF CANADA

DURING THE CALENDAR YEAR, 1928

A Record Year.—New mineral production records, set up in 1926 and 1927 were splendidly surpassed in 1928 when the aggregate value of the output from Canada's mines for the year reached the magnificant sum of $273,446,864, marking a gain of nearly 10·5 per cent, or $26,090,169 over the total for the preceding year. In few previous years has Canada's mining industry shown such phenomenal growth. Advances were general in all fields; metals, non-metals, fuels, and structural materials.

New output records were established for: cadmium, copper, gold, lead, nickel, metals of the platinum group, and zinc among the metals; cement, coal, gypsum, lime, salt, and stone in the non-metals and structural materials field; and in point of total annual output values, records were also attained for natural gas, petroleum, and sand and gravel.

Metals made magnificent advances, despite prevailing lower prices for lead and zinc. Improvement in prices of silver and copper helped to augment the total values. A gain of $18,343,573 was noted in the total for the metals group.

Fuels, comprising coal, natural gas and crude petroleum, rose about 1·6 million dollars in value to $72,995,225.

Other non-metals, including a long list of which some of the chief items were asbestos, feldspar, gypsum, magnesite, pyrites, quartz, salt, talc and soapstone, were valued at $18,664,801 or 1·1 million dollars above the total for the preceding year.

Building materials, comprising cement, lime, brick, stone, sand and gravel, reflected the activity in construction during the year and at $49,882,235 attained a total production value far in excess of the figures for any previous year.

Canada's mining industry represents a capital investment of more than 700 million dollars; this includes only the money actually spent on the properties, for lands and plants, equipment of mines and smelters, and the working cash assets of the operating companies. Nearly 85,000 men are employed in the operating mines and their associated enterprises, exclusive of prospecting and outside development workers, of whom no record is kept. The great variety of Canada's minerals is a constant urge to active prospectors, and while no official records show their numbers, every mining area has its quota of those trained, keen men who have done so much to open up Canada's northland treasures. Latterly, aeroplane services have been utilized to make the prospectors' work more efficient and to concentrate the necessary study so that the maximum possible results may be obtained.

The following table shows the value of production for metals, fuels and non-metals, clay products and other structural materials, in each of the past seven years.

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Values of Mineral Production of Canada by Classes, 1922-1928

Year	Metallics	Non-Metallics		Total
		Fuels and other non-metallics	Structural materials and clay products	
	$	$	$	$
1922	61,785,707	82,976,794	39,534,741	184,297,242
1923	84,391,218	91,936,732	37,751,381	214,079,331
1924	102,406,528	71,796,009	35,380,869	209,583,406
1925	117,082,298	71,851,801	37,649,234	226,583,333
1926	115,237,581	85,240,144	39,959,398	240,437,123
1927	113,561,030	88,986,246	44,809,419	247,356,695
1928	131,901,603	91,660,026	49,882,235	273,446,864

Principal Minerals.—While Canada produces about 70 different mineral products of economic value, 18 of these make up 98 per cent of the total annual output value. More than fifty other products, each interesting in itself, and many having potential commercial value, are produced in relatively small amounts, so that they are not, presently, of great economic importance. Partly this is due to lack of markets for certain commodities; partly it may be due to competition from other sources where production costs are less, and the commodity cheaper. Further reference to these minerals will be found in the tabular matter of this report. In order of production values the leading products are: coal, gold, copper, nickel, cement, lead, silver, clay products, asbestos, zinc, stone, natural gas, sand and gravel, lime, gypsum, petroleum, cobalt, and salt.

Coal.—Coal produced from Canadian mines was the largest item in the mineral record. Never before was so great a tonnage reported. Gains were made mostly by western Canada mines, but Nova Scotia and New Brunswick production was close to the figures for 1927. Saskatchewan mined about the same tonnage as in the preceding year but Alberta's output rose to a record tonnage. British Columbia's output was also greater than in 1927. Efforts have been made by the Dominion Government and by the provincial governments of Alberta and Ontario to create a commerce in coal between these two areas, the one a producer, the other a great user, of coal. So far this scheme has been only partially successful, but hope is held that the difficulties of transportation costs may yet be overcome. Canada possesses about 16 per cent of the world's resources in coal but the great distances separating the producing and consuming areas have rendered economical development and marketing somewhat difficult.

Gold.—Gold mining in Canada dates back to the late fifties, but in Ontario, where the present greatest producers are found, gold mining is a comparatively recent enterprise, if the excellent pioneer work done in earlier camps be passed over. Porcupine and Kirkland lake are familiar names; the great mines of these areas are equally well known. Some gold is also obtained in the treatment of nickel-copper ores from the Sudbury district. In British Columbia gold is obtained chiefly from the Premier mine, a silver-gold property, but quantities are also won in the treatment of copper ores from the Granby Company's mines at Hidden Creek near Anyox and Copper Mountain near Princeton; the Britannia mine at Britannia Beach is another source. Other mines, notably the lead-zinc properties in various parts of the province yield some gold also, and there is still a considerable production of alluvial gold, although the output from this source is now relatively small in comparison with the quantities panned when placer mining was at its height in the Cariboo and Atlin districts. The Yukon still yields gold; some from alluvial workings, some from silver-lead lode mining. Manitoba produced a quantity of gold in 1928 from a mine in the eastern section of the province. Nova Scotia too reported small shipments. In the Rouyn area of western Quebec, the Noranda mine and smelter were worked steadily throughout the year; the gold from this source was contained in the blister copper produced on the property.

In 1928 Ontario produced 83·46 per cent of the gold obtained from Canadian sources; British Columbia contributed upwards of 10·43 per cent; Quebec yielded 3·17 per cent; the Yukon, nearly 1·82 per cent; and the remainder was made up by Nova Scotia and Manitoba.

Copper.—Canada is the world's fourth most important producer of copper, with every prospect of becoming the third greatest source of the red metal within the next eight or ten years, being then surpassed only by the United States and Chile. At present, Africa also produces more copper than Canada. Producing 201,940,172 pounds or 100,970 tons of copper, in 1928, Canada showed an advance in this field of more than one-third over the tonnage produced in 1927. To-day one-half of Canada's copper is derived from the mines of British Columbia; Ontario contributes a little better than one-third of the total; and Quebec yields about half as much as Ontario.

Rising prices reflected the general improvement in the copper situation throughout the year. Quoted in New York in January, 1928, at 13·854 cents a pound, electrolytic copper did not vary in price much until April when the average rose to 13·986 cents; quotations rose through fourteen cents in the period May to September, passed into the 15-cent range, attaining 15·778 cents in November and closing the year at an average for December of 15·844 cents. The average for the year was 14·570 cents a pound.

Nickel.—Canada's nickel output in 1928 established a new record surpassing even the great tonnages produced during the war years.

Nickel is an Ontario monopoly, or nearly so. Developments in the Sudbury area where the International Nickel Company of Canada and the Mond Nickel Company have their mines and smelters, were watched with the greatest interest through the year. When the merger of these great companies was effected, the ownership and control of the famous Frood ore-body passed into the hands of a single powerful organization splendidly equipped to operate the property in a highly efficient manner and to market the products to the best possible advantage. Copper, nickel and precious metals in the Frood ore should make the economic development of this property highly successful.

Cement.—Cement production reached a new high record at 10,954,184 barrels valued at $16,583,703. Quebec and Ontario are the principal producers, but more than a million dollars' worth is produced annually in each of the three western provinces, Manitoba, Alberta and British Columbia.

Lead.—Lead is derived from mines in the Yukon, British Columbia, Ontario and Quebec, but 95 per cent of the Dominion output is obtained from British Columbia. In this province, the Sullivan, the world's largest silver-lead-zinc mine, sends a steady stream of concentrates to the great smelter at Trail, where pig lead is produced and other valuable products recovered. Mention of by-products recalls the fact that in 1928 skilled metallurgists at Trail devised a commercial method of saving cadmium contained in some of the ores treated at Trail; production of cadmium was reported for the first time from this source in 1928.

Other sources of lead are the Treadwell Yukon mine near Mayo, Y.T., the Kingdon mine at Galetta, Ontario, and the Tétreault property at Notre Dame des Anges in Quebec.

Prices of lead, which averaged 5·256 cents per pound on the London market in 1927, declined to an average of 4·576 cents a pound in 1928. Despite this drop in price, the Canadian output increased to a new high record for all time.

Silver.—Silver production dropped a little below the total for 1927. British Columbia produced nearly half of the Dominion output; Ontario came second and the Yukon, third, these two areas together contributing nearly as much as British Columbia; Quebec was the only other important source but other provinces produced small amounts.

Silver prices, quoted in January at 57·135 cents per fine ounce, strengthened gradually to 60·298 cents in May, thereafter losing a little to 57·335 cents in December; the yearly average of New York quotations was 58·176 cents per fine ounce.

Clay Products.—Clay products, including brick of all kinds, sewer pipe and pottery, represent a much more important section of the mining industry in Canada than is often supposed. In 1928 the output value of these products was about $12,682,780.

Asbestos.—Slightly lower tonnages but greater total values marked the figures for asbestos mined in Canada in 1928. In the eastern townships of Quebec, around Thetford, Quebec produces more than 85 per cent of the world's supply of asbestos. Crude asbestos is now being worked up in Canada into articles of commerce, instead of being wholly exported as in earlier years.

Zinc.—In British Columbia increasing tonnages of electrolytic zinc pour out of the great refinery at Trail; every pound is a token marking the achievement of the research workers at Trail whose ingenuity and perseverance led to the development and commercial application of the process there in use for the recovery of zinc from the refractory ore of the Sullivan mine. At Notre Dame des Anges in Quebec, the Tétreault property yields zinc. These are the only two presently producing sources, but probably very soon other fields will begin to contribute to the Dominion's output. In this connection the Errington copper-zinc mine in the Sudbury section is of most interest to Ontario while Sherritt Gordon and the Flin Flon in Manitoba, Amulet and Abana in the Rouyn area in Quebec and the Stirling in Nova Scotia are other interesting potential sources of zinc.

Stone.—Stone, including granite, marble, limestone and sandstone, is produced in large quantities and in excellent quality. Manitoba and Quebec are especially noted in this respect. Crushed stone is gradually replacing sand and gravel as railway ballast.

Natural Gas.—Alberta now produces nearly twice as much natural gas as Ontario, but the total value of the gas from Ontario wells is greater than the sum obtained from the sale of Alberta gas. The western province as yet produces on a prodigal scale; Ontario has come to the conservation stage. New Brunswick reports a small output also.

Sand and Gravel.—Sand and gravel, ranking next, is mainly used for railway ballast and building purposes, particularly in concrete work.

Lime.—Every province, except Saskatchewan and Prince Edward Island, produces lime. Both quicklime and hydrated lime are produced; in 1928 production of these two grades was in the ratio of about 5 to 1. All previous records were surpassed.

Gypsum.—Gypsum reached a new high record also. Nova Scotia is the principal source, most of the gypsum mined in this province being exported to the United States. New Brunswick and Ontario each mine about 10 per cent as much as Nova Scotia, while Manitoba and British Columbia contribute somewhat less.

Petroleum.—Petroleum is a product of Alberta, Ontario and New Brunswick, most of the gain in output being in the western province. New wells and greater outputs from older wells in Alberta were features of the year's record.

Cobalt.—Canada's cobalt output was maintained in 1928 at about the same level as in the preceding year. Entry of cobalt from the Belgian Congo into the world's markets has had quite a pronounced effect on Canada's contribution to the world supply.

Salt.—To complete the list, reference must be made to salt. Great industries have grown up in Ontario that have their basis in the salt wells of the southwestern section. Little variation is noted year by year in the salt output, but great advances have been made in the creation of new industrial outlets for this product.

Notes on Mining Areas

Nova Scotia.—While coal and gypsum dominate the mining industry in Nova Scotia, other mineral products are accorded very considerable attention.

Metal mining continues to intrigue public interest. The investigational work done on the Coxheath property had a romantic interest and high news value. The Stirling mine also has been a centre of interest and active work. In recent years quite notable attempts have been made in the Atlantic province to restore metal mining to something of its old-time significance, but as yet the progress made has not been remarkable. There was little change in the tonnage of coal produced in Nova Scotia, except that in December shipments were rather lower than usual. Gypsum production increased. New outlets are being found for gypsum in the manufacture of insulating materials for building purposes. During the year an attempt was made to exclude Canadian gypsum from United States markets by the imposition of a prohibitive rate of duty, but argument before the United States Tariff Board by interests in that country desirous of importing Canadian gypsum was so far successful that only a very reasonable *ad valorem* rate was made to apply and shipments have been going forward steadily. Quartz and salt are other important non-metals obtained in Nova Scotia, and in the field of structural materials, the province is a large producer of clay products, stone, lime, sand and gravel.

New Brunswick.—Although there are many minerals of economic importance in the province of New Brunswick, present activities are restricted mainly to the mining of bituminous coal, the quarrying of gypsum and stone, and the production of petroleum, natural gas, lime and clay products. In 1928 production tended towards higher levels than in the preceding year but there was little appreciable change in the grand totals for the industry.

Quebec.—Quebec, with its Noranda mine and smelter operating continuously and with high efficiency throughout the year, quite properly won a place of importance in the metal mining field. Improvement in the price of copper, and the growing appreciation of the position Canada is likely to attain as a copper producer, have served to emphasize the progress in the mineral development of the western section of Quebec, nearby the transcontinental line of the Canadian National Railway, and adjoining the richly mineralized area of northern Ontario. In addition to copper, Quebec has gold, silver, lead and zinc in the properties that are either now producing or approaching the production stage. The spectacular development of the Rouyn area has been one of the most outstanding features of Canada's mining industry in recent years.

Asbestos, of which Quebec produces by far the greater part of the world's supply, was mined in greater quantity during 1928 than in 1927. Numerous other non-metals were produced. Feldspar, graphite, magnesite, mica, iron oxides, pyrites, quartz and soapstone may be cited, while activity in building operations was reflected in large outputs of stone, sand and gravel, cement, lime and clay products.

Ontario.—But it was in Ontario, with its gold, silver, nickel, copper, cobalt and precious metals that the most interesting developments occurred. In the gold fields, there was first the series of misfortunes besetting the Hollinger, which not only dissipated much of the public confidence in that property but had also an adverse effect on all the gold producers for a time.

In the Porcupine area, Hollinger, McIntyre and Dome continued to rank as the three premier producers in this camp and in the order named. Others contributing to Porcupine's output of gold were Vipond, Ankerite, Coniaurum, and Paymaster (now known as United Mineral Lands, Ltd. and closed down late in the year), March Gold and Scottish Ontario.

Kirkland lake area, where the ores generally are richer than in Porcupine, continued to advance, and production from this camp was stepped up on a splendid scale during the year. Teck Hughes won special attention, becoming the camp leader in point of production during the year. Lake Shore, the other big mine in Kirkland lake, ran steadily and successfully throughout the period. Wright-Hargreaves, which has behaved so well over a period of years suffered during 1928, and at the close of the year had not recovered its previous good standing.

Considering the gold producers of Porcupine and Kirkland lake together, it may be noted that while Hollinger still leads, as Canada's greatest producer of gold, Teck Hughes of the Kirkland lake area won second place in 1928, forcing McIntyre into third position for the first time. Lake Shore, a close fourth, was followed by Dome. These are Ontario's five most important gold mines.

Perhaps even greater interest attended the remarkable progress made in the Sudbury area, where the International Nickel Company of Canada and the Mond Nickel Company, joint owners of the famous Frood orebody carried forward an ambitious program of development and expansion. Sinking of shafts on the Frood by each company served to focus attention on the project and as reports were issued depicting the satisfactory results of the work done, keen appreciation of the possibilities for tremendous enhancement of values excited the public mind and the developments at the property itself were almost overshadowed by the stock market situation in respect to the nickel companies' securities.

Ontario's yield of silver was about one-third of the total for the Dominion. Most of this silver was mined in the Cobalt area, but a little was derived from other sources, notably the nickel mines, and the gold producers. Smelting of silver-cobalt ore at Deloro, Ontario, was carried on throughout the year, the products in addition to silver bullion being cobalt and its compounds, nickel products, arsenic and bismuth-bearing bullion.

Ontario, fairly enough, boasts of having a great variety of minerals. Reference to the tables confirms this view, and discloses also that satisfactory growth occurred in practically every item noted in the non-metals and structural materials list.

Manitoba.—While Manitoba's metal output was quite limited in 1928, many persons watched with interest the development work carried on in the northern section where the Flin Flon or Hudson Bay Mining Company's property, the Sherritt-Gordon and the Mandy are located. Construction of a railroad to serve the Flin Flon property and the promise of further railway facilities to promote the development work at the Sherritt-Gordon, 42 miles farther on, have done much to create confidence in the possibilities of northern Manitoba as a metal mining area. Another year or two should see much further progress, as the mines approach or enter the production stage. The importance of advancing prices for copper has an added significance in this regard.

Central Manitoba Mines, Limited, operating steadily throughout the year, in the eastern section of the province, shipped gold bullion regularly during the period. Reports indicated that work was also going forward on other properties in the vicinity.

Manitoba has long enjoyed fame as a producer of fine building stone. Improvement was noted in the progress of this industry. Other structural materials such as cement, lime, sand and gravel, etc., contributed very appreciably to the year's output. Gypsum was produced in greater tonnage than in the preceding year.

Saskatchewan.—Saskatchewan is not noted for its metal mines as yet; perhaps the properties now being developed close to the boundary line on the Manitoba side will be found to extend westerly into Saskatchewan, and then there will be another story to tell. Coal and building materials were the principal mineral products of importance in this province, although there was also to be observed a growing interest in the recovery of natural salts, such as sodium sulphate.

Alberta.—Alberta so far has little to show in the way of metal mining.

Coal production made good headway. Natural gas production also reached a new record. Crude petroleum reached a new record output. Bituminous sand deposits were carefully developed during the year, and much progress was made. Cement and other building materials were all produced in quite large quantities, and the total production indicated a very real growth in the mining industry of the province.

British Columbia.—In British Columbia, metal mining is of very great importance, the principal metals being arsenic, copper, gold, silver, lead and zinc, and in 1928 for the first time, an output of cadmium. Here are located the world's largest non-ferrous metallurgical works, the immense and magnificently efficient smelting works at Trail producing fine gold and silver, electrolytic copper and zinc, and pig lead, as leading products. It was here also that the recovery of cadmium was made. This new product is just another tribute to the brilliant work done by the management and research staffs maintained by this company.

The Sullivan silver-lead-zinc mine and the Premier, producing gold and silver, were worked actively throughout the year.

Britannia, Hidden Creek and Copper Mountain yield quantities of copper, some of which is smelted within the province, and some exported. In 1928, British Columbia produced about one-half of Canada's total output of silver and copper, 95 per cent of the lead and 88 per cent of the zinc.

A provincial government report states that more prospectors were in the field last year than in 1927, but there is need for many more prospectors, particularly in some districts. The known mineralized areas of British Columbia are very great and apart from the more or less known areas of the Province, largely in northern British Columbia, many of the older mining camps will probably repay more extensive scientific prospecting than they have yet received. During the year electrical prospecting methods were tried on several British Columbia properties, but so far no results of the work carried out have been announced.

Here, too, coal mining is an important and growing industry. Progress in the construction industries stimulated producers of cement, lime, clay products and stone. There was also a notable production of gypsum, and of pyrites, quartz, sodium carbonate and various other non-metal products.

Yukon.—The Yukon, formerly known only for its alluvial gold has also been a contributor of silver and lead in recent years. The Treadwell Yukon Company operating in the Mayo district, ships silver-lead concentrates to the United States for smelting. Production of alluvial gold from the Yukon in 1928 amounted to 34,116 fine ounces.

* * * * * * *

Canada's mineral industry, third in importance among the primary industries of the Dominion, being surpassed in output value only by the great basic industries of agriculture and forestry, brings to the nation a prestige far beyond the monetary measure of the mineral output. First in nickel, first in asbestos, second in cobalt, third in gold, third in silver, fourth in lead and copper, and sixth in zinc, among the world's producers, Canada presently enjoys an enviable position in the mining world with every prospect favourable to continued expansion.

Mineral Productian of Canada by Provinces, 1926-1928

Province	1926		1927		1928	
	Value of production	Per cent of total	Value of production	Per cent of total	Value of production	Per cent of total
	$		$		$	
Nova Scotia	28,873,792	12·00	30,111,221	12·17	29,757,010	10·88
New Brunswick	1,811,104	0·76	2,148,535	0·87	2,257,633	0·83
Quebec	25,956,193	10·80	28,870,403	11·67	37,182,864	13·60
Ontario	84,702,296	35·23	89,982,962	36·38	99,628,506	36·43
Manitoba	3,073,528	1·29	2,888,812	1·17	4,119,656	1·51
Saskatchewan	1,193,394	0·50	1,455,225	0·59	1,536,967	0·56
Alberta	26,977,027	11·21	29,309,223	11·85	32,367,781	11·84
British Columbia	65,622,976	27·29	60,801,170	24·58	63,913,159	23·37
Yukon	2,226,813	0·92	1,789,044	0·72	2,083,270	0·98
Total	**240,437,123**	**100·00**	**247,356,695**	**100·00**	**273,446,864**	**100·00**

Metal Prices, 1924-1928

Metal	Market	Unit	1924	1925	1926	1927	1928
			$	$	$	$	$
Antimony (ordinaries)	New York	Pound	0·10836	0·17494	0·15088	0·12393	0·10305
Arsenic, white	New York	Pound	0·09636	0·0466	0·0350	0·0383	0·04
Cobalt	New York	Pound	2·75	2·50	2·50	2·50	2·63
Cobalt oxide	New York	Pound	2·10	2·20	2·10	2·10	2·10
Copper	New York	Pound	0·13024	0·14042	0·13795	0·12920	0·11570
	Montreal	Pound	0·15155	0·1615	0·1577	0·1478	0·16402
	New York	Pound	0·08097	0·09020	0·08417	0·06755	0·06305
Lead	Montreal	Pound	0·08104	0·0912	0·08154	0·0673	0·0606
	Toronto	Pound	0·08118	0·0919	0·08274	0·0683	0·06206
	London	Pound	.....	0·07914	0·06751	0·05256	0·04576
Nickel	New York	Pound	0·28	0·34	0·36	0·36	0·36
Platinum	New York	Ounce	118·817	119·093	113·269	84·636	78·58
Silver	New York	Ounce	0·66781	0·69065	0·62107	0·56370	0·58176
*Tin	New York	Pound	0·49674	0·56790	0·63615	0·64353	0·50427
	St. Louis	Pound	0·06344	0·07622	0·07337	0·06242	0·06027
Zinc	Montreal	Pound	0·07837	0·0906	0·08825	0·07710	0·07144
	London	Pound	0·0670	0·07956	0·07410	0·06194	0·05493

* Years, 1924, 1925 and 1926 prices for 99% grade.
* Years 1927 and 1928 prices for Straits.

Metal Prices by Months, 1927 and 1928

Month	Copper (Electrolytic)				Pig Lead					
	New York (In cents per pound)		London (In £ sterling per long ton)		Montreal (In cents per pound)		New York (In cents per pound)		*London (In £ sterling per long ton)	
	1927	1928	1927	1928	1927	1928	1927	1928	1927	1928
January	12·990	13·854	62·375	66·575	7·52	6·400	7·577	6·500	27·485	21·773
February	12·682	13·823	61·119	66·381	7·48	6·110	7·420	6·329	27·344	20·283
March	13·079	13·845	62·641	66·443	7·62	5·966	7·577	6·000	27·845	19·938
April	12·808	13·986	61·526	66·500	7·22	5·907	7·126	6·100	26·546	20·306
May	12·621	14·203	60·881	67·216	6·82	5·848	6·816	6·123	25·054	20·483
June	12·370	14·527	59·881	68·738	6·65	5·919	6·414	6·300	24·438	20·985
July	12·532	14·527	60·089	68·670	6·45	5·832	6·344	6·220	23·491	20·602
August	12·971	14·526	62·227	68·750	6·40	5·989	6·681	6·248	23·119	21·634
September	12·940	14·724	61·830	69·800	6·67	6·112	6·297	6·450	24·446	22·050
October	12·958	15·202	62·256	71·935	5·87	6·148	6·250	6·500	20·479	22·082
November	13·319	15·778	63·761	74·750	6·06	6·216	6·259	0·389	20·889	21·230
December	13·774	15·844	66·181	75·000	6·43	6·277	6·504	6·495	22·163	21·342
Average	**12·920**	**14·570**	**62·064**	**69·230**	**6·73**	**6·069**	**6·755**	**6·305**	**24·192**	**21·060**

* Computed at par ($4·8666), the average London price of lead in 1927 was 5·256 cents per pound; and in 1928 was 4·576 cents per pound.

Month	Silver				Zinc					
	New York (In cents per oz.; 999 fine)		London (In pence per oz.; 925 fine)		Montreal (In cents per pound)		St. Louis (In cents per pound)		*London (In £ sterling per long ton)	
	1927	1928	1927	1928	1927	1928	1927	1928	1927	1928
January	55·795	57·135	25·863	26·313	8·18	7·100	6·661	5·643	30·979	26·125
February	57·898	57·016	26·854	26·205	8·17	7·000	6·673	5·551	29·931	25·518
March	55·306	57·245	25·655	26·329	8·16	7·082	6·692	5·624	30·649	25·082
April	56·399	57·395	26·136	26·409	7·80	7·211	6·338	5·759	29·579	25·493
May	56·280	60·298	26·072	27·654	7·53	7·398	6·075	6·026	29·034	26·102
June	56·769	60·019	26·203	27·459	7·68	7·357	6·213	6·158	28·598	25·684
July	56·360	59·215	25·983	27·262	7·66	7·239	6·229	6·201	28·280	24·946
August	54·718	58·880	25·224	27·096	7·80	7·156	6·342	6·249	28·210	24·540
September	55·445	57·536	25·565	26·440	7·67	6·973	6·212	6·250	27·347	24·497
October	56·035	58·087	25·776	26·727	7·46	6·911	5·996	6·250	26·899	24·030
November	57·474	57·953	26·526	26·704	7·20	6·993	5·745	6·263	26·281	24·801
December	57·957	57·335	26·701	26·362	7·18	7·305	5·722	6·349	26,363	26·609
Average	**56·370**	**58·176**	**26·047**	**26·747**	**7·71**	**7·144**	**6·242**	**6·027**	**28·513**	**25·284**

* Computed at par ($4·8666) the average London price of zinc in 1927 was 6·194 cents per pound and in 1928 was 5·493 cents per pound.

Mineral Production in Canada, by Provinces, 1928

	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon
	$	$	$	$	$	$	$	$	$
Metallics									
Antimony lb.	–	–	–	–	–	–	–	–	–
$	–	–	–	–	–	–	–	–	–
Arsenic lb.	–	–	–	4,097,226	–	–	–	1,318,000	
$	–	–	–	178,149	–	–	–	14,563	–
Bismuth lb.	–	–	–	14,002	–	–	–	–	–
$	–	–	–	5,067	–	–	–	–	–
Cadmium lb.	–	–	–	–	–	–	–	491,894	–
$	–	–	–	–	–	–	–	341,374	–
Cobalt lb.	–	–	–	954,860	–	–	–	–	–
$	–	–	–	1,671,900	–	–	–	–	–
Copper lb.	–	–	33,959,481	66,440,240	–	–	–	101,540,451	–
$	–	–	4,947,896	8,745,778	–	–	–	14,794,444	–
Gold fine oz.	1,290	–	60,036	1,578,305	19,813	–	68	197,199	34,369
$	26,667	–	1,240,434	32,626,459	409,571	–	1,406	4,076,465	710,470
Iron ore sold for export tons	–	–	2,244	–	–	–	–	–	–
$	–	–	6,732	–	–	–	–	–	–
Lead lb.	–	–	6,218,336	6,786,471	–	–	–	314,789,762	7,035,608
$	–	–	284,561	462,710	–	–	–	14,404,780	321,952
Manganese tons	–	–	–	–	–	–	–	–	–
$	–	–	–	–	–	–	–	–	–
Nickel lb.	–	–	–	96,755,578	–	–	–	–	–
$	–	–	–	22,318,907	–	–	–	–	–
Palladium, Rhodium, etc fine oz.	–	–	–	13,087	–	–	–	–	–
$	–	–	–	605,563	–	–	–	–	–
Platinum fine oz.	–	–	–	10,452	–	–	–	–	–
$	–	–	–	704,360	–	–	–	–	–
Silver fine oz.	77	–	910,364	7,234,414	1,763	–	7	10,943,502	2,832,668
$	45	–	529,613	4,208,693	1,026	–	4	6,366,492	1,647,933
Zinc lb.	–	–	23,080,960	–	–	–	–	163,530,890	–
$	–	–	1,267,837	–	–	–	–	8,982,752	–
Total	**28,712**	**–**	**8,277,073**	**71,527,586**	**410,597**	**–**	**1,410**	**48,989,870**	**2,680,255**
Non-Metallics									
Fuels									
Coal tons	6,741,630	207,738	–	–	–	464,428	7,335,480	2,804,594	414
$	26,379,572	869,104	–	–	–	817,204	23,517,988	11,094,353	2,915
Natural gas M cu. ft.	–	660,981	–	7,432,976	200	–	14,337,115	–	–
$	–	322,725	–	4,535,312	60	–	3,391,212	–	–
Peat tons	–	–	–	1,497	–	–	–	–	–
$	–	–	–	5,845	–	–	–	–	–
Petroleum, crude brl.	–	8,043	–	134,094	–	–	488,268	–	–
$	–	21,391	–	249,737	–	–	1,787,807	–	–
Total	**26,379,572**	**1,213,220**	**–**	**4,790,894**	**60**	**817,204**	**28,697,007**	**11,094,353**	**2,915**
Other Non-Metallics									
Actinolite tons	–	–	–	70	–	–	–	–	–
$	–	–	–	875	–	–	–	–	–
Asbestos tons	–	–	273,033	–	–	–	–	–	–
$	–	–	11,238,360	–	–	–	–	–	–
Barytes tons	127	–	–	–	–	–	–	–	–
$	2,847	–	–	–	–	–	–	–	–
Bituminous sands tons	–	–	–	–	–	–	94	–	–
$	–	–	–	–	–	–	374	–	–
Diatomite tons	231	–	–	–	–	–	–	202	–
$	5,775	–	–	–	–	–	–	5,050	–
Feldspar tons	–	–	13,401	18,864	–	–	–	–	–
$	–	–	108,145	179,253	–	–	–	–	–
Graphite tons	–	–	49	1,017	–	–	–	–	–
$	–	–	4,668	52,373	–	–	–	–	–
Grindstones tons	–	1,858	–	–	–	–	–	375	–
$	–	96,391	–	–	–	–	–	27,000	–
Gypsum tons	971,736	74,783	–	85,811	51,285	–	–	22,231	–
$	1,764,262	500,502	–	553,271	609,030	–	–	194,933	–
Iron oxides tons	–	–	5,280	–	–	–	–	115	–
$	–	–	109,383	–	–	–	–	955	–
Magnesite tons	–	–	13,195	–	–	–	–	–	–
$	–	–	346,990	–	–	–	–	–	–
Mica tons	–	–	1,277	2,303	–	–	–	–	–
$	–	–	56,180	25,999	–	–	–	–	–
Mineral water imp. gals.	–	–	15,730	253,830	–	–	–	–	–
$	–	–	5,743	27,090	–	–	–	–	–
Natro-alunite tons	–	–	–	–	–	–	–	–	–
$	–	–	–	–	–	–	–	–	–
Phosphate tons	–	–	91	–	–	–	–	345	–
$	–	–	1,126	–	–	–	–	4,485	–
Pyrites tons	–	–	1,312	464	–	–	–	63,983	–
$	–	–	4,330	6,118	–	–	–	255,932	–
Quartz tons	7,424	–	64,927	194,503	1	–	–	10,371	–
$	28,022	–	144,205	368,608	360	–	–	39,617	–
Salt tons	19,604	–	–	279,841	–	–	–	–	–
$	118,342	–	–	1,377,629	–	–	–	–	–

Mineral Production in Canada, by Provinces, 1928—Concluded

—	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon
	$	$	$	$	$	$	$	$	$
NON-METALLICS—Con.									
Sodium carbonate...tons	–	–	–	–	–	–	–	560	–
$	–	–	–	–	–	–	–	6,160	–
Sodium sulphate....tons	–	–	–	–	–	6,015	–	–	–
$	–	–	–	–	–	69,155	–	–	–
Talc and soapstone..tons	–	–	–	14,924	–	–	–	–	–
$	–	–	40,171	179,186	–	–	–	–	–
Volcanic dust.....tons	–	–	–	–	–	485	–	–	–
$	–	–	–	–	–	9,795	–	–	–
Silica brick.....M	1,627	–	–	1,597	–	–	–	–	–
$	69,179	–	–	86,323	–	–	–	–	–
Total.....	**1,988,427**	**596,893**	**12,659,381**	**2,737,325**	**609,399**	**78,950**	**374**	**534,132**	–
CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS									
Clay Products									
Brick-Soft mud process-									
Face.....M	19	50	70	27,778	–	–	662	–	–
$	2,220	1,000	1,115	548,851	–	–	22,163	–	–
Common...M	849	1,951	10,576	48,703	13,285	100	7,716	9,614	–
$	13,542	30,678	114,307	771,470	210,075	1,700	430,572	148,937	–
Stiff mud process (wire cut)									
Face.....M	1,270	–	29,914	52,992	1,157	1,374	845	238	–
$	30,063	–	686,752	1,130,600	28,150	44,208	17,927	5,549	–
Common...M	3,935	–	107,914	23,667	35	9,981	3,479	208	–
$	48,134	–	1,634,465	384,478	600	114,106	33,352	4,365	–
Dry press—									
Face.....M	–	–	2,402	25,399	–	432	3,552	1,700	–
$	–	–	66,842	510,797	–	12,428	66,670	64,000	–
Common...M	–	–	52	3,378	–	–	18,466	–	–
$	–	–	511	42,252	–	–	264,427	–	–
Fancy or ornamental brick..M	–	–	67	532	–	–	–	–	–
$	–	–	3,049	25,714	–	–	–	–	–
Sewer brick...M	–	–	–	2,559	–	–	–	–	–
$	–	–	–	48,622	–	–	–	–	–
Paving brick..M	–	–	300	–	–	–	–	–	–
$	–	–	3,241	–	–	–	–	–	–
Firebrick.....M	138	–	–	–	–	713	110	4,000	–
$	10,799	–	–	–	–	40,582	4,507	177,000	–
Fireclay and other clay.....tons	2,615	67	–	–	–	1,327	–	1,141	–
$	9,705	1,848	–	–	–	9,183	–	13,406	–
Kaolin.....tons	–	–	5	–	–	–	–	–	–
$	–	–	25	–	–	–	–	–	–
Fireclay blocks and shapes.....$	1,050	1,621	–	–	–	73,301	–	29,000	–
Hollow blocks.....tons	11,254	–	32,607	116,603	2,109	10,120	18,432	9,815	–
$	131,881	–	352,449	1,0.0,707	25,710	81,202	166,142	99,942	–
Roofing tile .....No.	–	–	–	72,930	–	–	–	–	–
$	–	–	–	6,435	–	–	–	–	–
Floor tiles (quarries).....sq. ft.	–	–	500	162,020	–	–	–	–	–
$	–	–	50	45,155	–	–	–	–	–
Drain tile.....M	89	–	531	19,080	149	15	386	1,192	–
$	3,714	–	18,833	544,266	9,211	600	12,761	38,790	–
Sewer pipe, copings, flue linings, etc....tons	13,112	–	6,815	60,778	–	–	9,178	4,125	–
$	211,833	–	163,521	1,048,000	–	–	247,410	127,000	–
Pottery, glazed or unglazed.....$	–	37,015	–	98,119	–	–	220,929	–	
Bentonite.....tons	–	–	–	–	–	–	–	20	–
$	–	–	–	–	–	–	–	100	–
Other clay products $	–	–	–	400	–	588	–	–	–
Total.....$	**462,971**	**72,192**	**3,075,160**	**6,225,866**	**273,746**	**377,896**	**1,486,860**	**708,089**	–
Other Structural Materials									
Cement.....brls	–	–	4,913,820	3,911,795	693,450	–	834,067	601,052	–
$	–	–	6,305,396	5,520,897	1,685,085	–	1,732,582	1,539,745	–
Lime.....tons	42,133	11,237	116,042	280,529	27,462	–	6,680	26,955	–
$	168,532	130,484	892,742	2,493,667	312,010	–	69,588	405,757	–
Sand and gravel.....tons	816,021	396,568	8,009,778	7,494,589	1,370,589	1,517,871	1,490,644	1,657,392	–
$	524,524	121,419	1,924,296	2,344,933	237,259	262,915	359,228	448,571	–
Stone.....tons	108,452	38,063	2,917,375	4,468,338	222,024	–	4,222	290,521	–
$	206,272	123,445	4,648,896	3,927,338	591,502	–	29,732	401,642	–
Total.....$	**899,328**	**375,348**	**13,771,330**	**14,286,825**	**2,825,854**	**262,915**	**2,182,130**	**2,595,715**	
Grand Total $	**29,757,010**	**2,257,652**	**37,182,864**	**99,628,506**	**4,119,656**	**1,536,965**	**32,367,781**	**63,913,159**	**2,683,270**

NOTES AND TABLES ON PRODUCTION, IMPORTS AND EXPORTS OF MINERAL PRODUCTS

(Arranged in alphabetical order.)

Abrasives

Diatomite.—Shipments of diatomite from Canadian deposits during 1928 amounted to 433 tons valued at $10,825 as compared with 266 tons at $6,650 shipped in 1927.

Grinding Pebbles.—There was no production of grinding pebbles in Canada during 1928.

Grindstones, Pulpstones and Scythestones.— New Brunswick and British Columbia quarries shipped 2,233 tons of grindstones, pulpstones and scythestones valued at $123,391 in 1928. During 1927 the production from these quarries amounted to 2,251 tons worth $125,017.

Volcanic Dust.—Operations in this industry are confined to deposits near Waldeck, Saskatchewan, where there has been an annual production during each of the past five years. Shipments in 1928 totalled 485 tons worth $9,795 as against 105 tons with a valuation of $735 in 1927.

Imports into Canada and Exports of Abrasives, 1927 and 1928

—	1927		1928	
	Quantity	Value	Quantity	Value
		$		$
IMPORTS—				
Abrasives—				
Artificial abrasives in bulk, crushed or ground, when imported for use in the manufacture of abrasive wheels and polishing composition	-	216,174	-	244,771
Carborundum wheels or stones not further manufactured than moulded and burned	-	131,428	-	221,386
Diamond dust or bort, and black diamond for borers	-	1,396,122	-	2,281,249
Emery in bulk, crushed or ground	-	46,649	-	53,289
Emery wheels and carborundum wheels, n.o.p.	-	56,916	-	109,185
Emery or carborundum, manufactures of, including carborundum stones, n.o.p.	-	76,987	-	83,942
Grindstones, not mounted, and not less than 36 inches in diameter	-	815,257	-	612,792
Grindstones, n.o.p.	-	96,451	-	40,598
Pumice and pumice stone, lava and calcareous tufa, not further manufactured than ground	-	35,211	-	48,062
Sand paper, glass, flint and emery paper or emery cloth	-	348,652	-	423,357
Iron, sand or globules for polishing and sawing	-	12,052	-	18,110
Burrstones in blocks, rough or unmanufactured, not bound up or prepared for binding into millstones..... No.	3	450	119	925
Diatomaceous earth or infusorial earth (kieselguhr, ground or unground)	-	-	5,354	9,504
Total	-	**3,232,348**	-	**4,147,260**
EXPORTS—				
Grindstones, manufactured	-	50,866	-	28,747
Stone for the manufacture of grindstones..... tons	-	-	-	-
Abrasives—				
Natural, n.o.p..... cwt.	5,516	6,426	5,871	7,071
Artificial, crude, including carborundum..... cwt.	1,000,321	2,645,347	1,235,302	3,295,460
Artificial, made up into wheels, stones, etc.	-	38,463	-	63,745
Total	-	**2,741,162**	-	**3,395,023**

Actinolite

The Canadian production of actinolite is obtained from deposits in Elzevir and Kaladar townships, Hastings and Addington counties, Ontario. In 1928 shipments to the United States reached a total of 70 tons worth $875 as compared with a production of 86 tons at $1,075 in the preceding year.

Antimony

Antimony ores occur in the provinces of Nova Scotia, New Brunswick, British Columbia and the Yukon Territory. Antimony is sometimes recovered in small quantities from the silver-lead-bismuth bullion made by smelters treating silver-cobalt ores. There was no production in 1928.

Imports into Canada of antimony in 1928 amounted to 1,529,823 pounds valued at $140,958 as against 1,284,483 pounds valued at $143,446 in 1927. There were 23,024 pounds of antimony salts valued at $5,326 imported during the same period as compared with 52,709 pounds worth $10,766 during the previous year.

Arsenic

Production in Canada, Imports and Exports of Arsenic, 1927 and 1928

		1927		1928	
		Quantity	Value	Quantity	Value
			$		$
PRODUCTION—					
From arsenical concentrates and residues exported	lb.	1,333,421	15,644	1,399,808	16,199
White arsenic	lb.	4,894,547	196,335	4,015,418	176,513
Total	lb.	**6,227,968**	**211,979**	**5,415,226**	**192,712**
IMPORTS—					
White arsenic	lb.	286,377	11,833	333,113	13,976
Sulphide of arsenic	lb.	16,245	1,593	94,380	5,566
Arseniate of soda	lb.	25,148	4,024	360	83
EXPORTS—					
Arsenic, n.o.p.	lb.	3,856,600	124,823	3,194,900	122,106

Asbestos

Output and Shipments of Canadian Asbestos, 1927 and 1928

Classification	1927				1928			
	Total output	Sold or Shipped			Total output	Sold or Shipped		
		Quantity	Total sales value at mill	Average value per ton		Quantity	Total sales value at mill	Average value per ton
	Tons	Tons	$	$ cts.	Tons	Tons	$	$ cts.
Crude No. 1	527	1,107	468,980	423 65	706	893	477,640	534 87
Crude No. 2	2,835	3,014	752,277	249 59	2,785	2,757	818,174	296 76
Other crudes	370	667	151,231	226 73	195	204	52,353	256 63
Spinning stocks	12,273	14,348	1,855,425	129 32	14,051	13,570	2,017,884	148 70
Shingle stocks	45,784	44,573	2,889,124	64 81	42,011	34,961	2,580,160	73 80
Mill board and paper stocks	59,490	60,396	2,284,021	37 82	71,453	78,755	3,051,742	38 75
Fillers, floats and other short fibres	148,430	150,673	2,219,955	14 73	142,746	141,893	2,240,407	15 79
Total	**289,709**	**274,778**	**10,621,013**	**38 65**	**273,947**	**273,033**	**11,238,360**	**41 16**
Sand and gravel	20,280	20,280	12,407	0 61	23,441	22,787	13,463	0 59

Imports into Canada and Exports of Asbestos, 1927 and 1928

	1927		1928	
	Tons	$	Tons	$
IMPORTS—				
Asbestos in any form other than crude, and all manufactures of, n.o.p.	–	562,794	–	727,843
Asbestos packing	114	109,088	101	108,044
Total	–	**671,882**	–	**835,887**
EXPORTS—				
Asbestos	133,225	8,697,376	129,192	8,802,558
Asbestos, sand and waste	130,065	2,037,935	135,729	2,177,729
Asbestos manufactures, including asbestos roofing	–	66,334	–	65,895
Total	–	**10,801,645**	–	**11,046,182**

Barytes

Shipments of barytes during 1928 amounted to 127 tons valued at $2,847 as against 56 tons at $1,268 shipped in 1927. The deposit at Lake Ainslie, Inverness county, Nova Scotia, as in previous years, was the source of the total output.

Barytes imports were recorded at 2,878 tons evaluated at $58,710 in 1928; in the previous year 2,841 tons worth $58,504 were imported.

Bismuth

Metallic bismuth was made in 1928 by the Deloro Smelting and Refining Company, Limited. This company also exported a silver-lead-bismuth bullion for further treatment in United States smelters. During 1928 production in Canada of metallic bismuth and bismuth contained in exports amounted to 14,002 pounds valued at $5,067.

Bituminous Sands

Bituminous sands production from the Fort McMurray district, Alberta, during 1928 amounted to 94 tons with a valuation of $374 as compared with a total of 2,706 tons at $10,824 extracted in 1927.

Importations of asphalt, solid, into Canada in 1928 were recorded at 47,991 tons appraised at $822,425; asphalt, not solid, to the value of $46,890 and asphaltum oil worth $95,562 were also imported.

Cadmium

Cadmium, produced at Trail, British Columbia, during 1928, was a newcomer among Canada's mineral products. The production of this mineral during the year amounted to 491,894 pounds valued at $341,374.

Cement

Production in Canada, Imports and Exports of Cement, 1927 and 1928

	1927		1928	
	Barrels	Value	Barrels	Value
		$		$
Output	9,927,163	-	11,076,659	-
Sold or Used, by Provinces—				
Quebec	4,636,751	5,383,058	4,913,820	6,305,396
Ontario	3,751,786	5,144,326	3,911,795	5,520,897
Manitoba	551,698	1,378,121	693,450	1,685,083
Alberta	601,699	1,303,880	834,067	1,732,582
British Columbia	523,931	1,182,552	601,052	1,339,745
Total	**10,065,865**	**14,391,937**	**10,954,184**	**16,583,703**
Stocks, December 31	1,470,611	-	1,590,326	-
Imports—				
Portland	19,334	87,541	34,047	146,104
Manufactures	-	17,879	-	31,594
Exports	249,694	308,144	267,325	340,624
Apparent Consumption	9,835,525	-	10,720,906	-

Chromite

Chromite is known to occur in the provinces of Quebec and British Columbia. During the war considerable amounts of chromite were mined in Quebec. Some shipments were reported in 1923 but there has been no production since.

Clay and Clay Products

Production of Clay Products in Canada, by Provinces, 1927 and 1928

Province	1927	1928
	$	$
Prince Edward Island	–	–
Nova Scotia	416,417	462,971
New Brunswick	87,185	72,192
Quebec	2,734,738	3,075,160
Ontario	5,853,035	6,225,866
Manitoba	201,464	273,746
Saskatchewan	311,204	377,896
Alberta	889,358	1,486,860
British Columbia	679,788	708,089
Canada	**11,173,189**	**12,682,780**

Production in Canada, Imports and Exports of Clay and Clay Products, 1927 and 1928

Kind		1927 Quantity	1927 Total selling value	1928 Quantity	1928 Total selling value
PRODUCTION (SALES)—			$		$
Brick: Soft mud process — Face	M	16,196	325,966	28,579	575,349
Brick: Soft mud process — Common	M	70,554	1,091,274	92,794	1,721,281
Stiff mud process (wire cut) — Face	M	95,480	2,024,054	87,790	1,943,279
Stiff mud process (wire cut) — Common	M	150,222	2,239,180	149,219	2,249,500
Dry press — Face	M	39,753	833,570	33,575	720,735
Dry press — Common	M	14,617	187,062	21,806	307,190
Fancy or ornamental brick (including special shapes, embossed and enamelled brick)	M	619	29,372	599	28,763
Sewer brick	M	10,997	210,643	2,559	48,622
Paving brick	M	50	2,106	300	3,241
Firebrick from domestic clay	M	5,388	216,266	4,961	232,888
Fireclay and other clay	tons	5,070	35,961	5,150	34,142
Fireclay blocks and shapes		–	100,659	–	104,972
Kaolin		24	120	5	25
Structural tile: Hollow blocks (including fireproofing and load-bearing tile)	tons	151,307	1,431,141	200,931	1,878,033
Roofing tile	No.	2,000	140	72,930	6,435
Floor tile (quarries)	Sq. ft.	135,285	32,550	162,520	45,205
Drain tile	M	22,259	598,008	21,442	628,175
Sewer pipe (including copings, flue linings, etc.)	tons	77,262	1,475,875	94,008	1,797,764
Pottery, glazed or unglazed		–	307,057	–	356,093
Bentonite		–	–	20	100
Other products		–	2,076	–	988
Total		–	**11,173,189**	–	**12,682,780**
IMPORTS—					
Building brick	M	6,672	142,438	14,513	246,723
Building blocks		–	42,365	–	58,016
Clays—					
China	Cwt.	420,822	235,824	462,357	262,207
Fire	Cwt.	984,526	219,500	1,219,155	266,320
Pipe		–	2,258	–	794
Zirconium silicate		–	2,548	–	2,450
Other clays		–	90,183	–	93,663
Drain tile, unglazed		–	2,059	–	556
Drain and sewer pipe		–	77,274	–	103,506
Insulators, electric, porcelain		–	437,328	–	510,008
Earthenware and chinaware		–	5,549,327	–	5,418,017
Brick, fire, other, valued at not less than $100 per M, rectangular shaped; the dimensions of each not to exceed 125 cubic inches for use exclusively in the construction or repair of a furnace, kiln, etc.		–	20,634	–	38,327
Brick, fire, n.o.p., for use exclusively in the construction or repair of a furnace, kiln or other equipment of a manufacturing establishment		–	1,152,277	–	1,217,003
Firebrick, n.o.p.		–	121,343	–	117,539
Firebrick, chrome		–	52,565	–	56,375
Magnesite brick		–	118,457	–	140,944
Silica brick		–	329,214	–	259,192
Paving brick	M	2,051	54,561	3,431	88,943
Other clay manufactures		–	988,061	–	1,143,164
Total		–	**9,638,216**	–	**10,023,747**
EXPORTS—					
Building brick	M	1,450	23,059	3,034	46,037
Clay—					
Unmanufactured	Cwt.	15,454	2,940	19,903	20,577
Manufactures		–	86,746	–	76,529
Earthenware		–	14,771	–	17,235
Porcelain insulators		–	155,196	–	124,140
Total		–	**282,712**	–	**284,518**

Coal

Output and Value of Coal in Canada by Kinds and by Provinces, 1927 and 1928

(Short tons)

Province	1927		1928	
	Quantity	Value	Quantity	Value
		$		$
Nova Scotia (Bituminous)	7,071,876	27,194,671	6,741,630	26,379,572
New Brunswick (Bituminous)	203,950	885,038	207,738	869,104
Saskatchewan (Lignite)	470,216	868,807	404,428	817,204
Alberta—				
Bituminous	2,984,513	10,369,280	3,215,494	11,190,180
Sub-bituminous	596,155	1,784,973	740,496	2,076,212
Lignite	3,353,494	9,827,805	3,379,499	10,251,596
Total	6,934,162	21,982,058	7,335,489	23,517,988
British Columbia (Bituminous)	2,746,243	10,934,777	2,804,594	11,094,353
Yukon (Bituminous)	414	2,052	414	2,915
Canada—				
Bituminous	**13,006,996**	**49,385,818**	**12,969,870**	**47,536,124**
Sub-bituminous	**596,155**	**1,784,973**	**740,496**	**2,076,212**
Lignite	**3,823,710**	**10,696,872**	**3,843,927**	**11,068,800**
Total	**17,426,861**	**61,867,463**	**17,554,293**	**62,681,136**

Shipments of Coal from Canadian Mines by Grades and Destinations, 1927 and 1928

(Short tons)

Destination	1927				1928			
	Run of mine	Screened	Slack	Total	Run of mine	Screened	Slack	Total
Prince Edward Island	3,411	73,069	8,788	85,268	5,757	72,826	1,271	79,851
Nova Scotia	297,117	534,515	797,888	1,629,520	343,622	609,018	675,511	1,628,151
New Brunswick	214,043	266,730	132,199	612,972	223,372	168,937	121,464	513,773
Quebec	50,291	1,194,541	1,062,350	2,307,185	97,820	1,212,477	1,159,218	2,469,215
Ontario	1,160	10,620	12,845	24,625	1,160	35,808	10,608	47,576
Manitoba	173,483	442,528	232,293	848,305	151,952	428,167	243,110	825,229
Saskatchewan	213,029	1,042,130	394,106	1,649,265	223,774	1,096,656	408,959	1,729,389
Alberta	273,319	610,615	605,228	1,489,162	257,405	561,391	592,991	1,411,787
British Columbia	45,222	625,861	330,150	1,001,233	92,470	636,044	389,368	1,117,882
Yukon	–	211	–	211	–	289	–	289
Total domestic shipments	1,271,078	4,800,820	3,575,848	9,647,746	1,400,332	4,821,813	3,602,500	9,824,145
Railroads	3,985,339	541,983	331,756	4,859,078	4,294,184	499,767	393,676	5,187,627
Ships' bunker	300,304	210,089	4,716	515,109	314,971	225,414	13,523	553,908
Total railroads and ships' bunkers	4,285,643	752,072	336,472	5,374,187	4,609,155	725,173	407,199	5,741,529
United States	12,821	128,613	65,788	207,222	13,991	122,282	58,906	195,179
Newfoundland	47,288	223,226	8,947	279,461	5,314	254,095	7,434	266,643
West Indies	–	–	–	–	–	–	–	–
Europe	–	–	–	–	–	–	–	–
United Kingdom and Irish Free State	145,682	–	–	145,682				
Other places	1,358	6,801	–	8,159	486	7,600	–	8,086
Lost at sea	–	–	–	–	–	–	–	–
Total external shipments	207,149	358,640	74,735	640,524	19,591	383,977	66,340	469,908
Total	**5,763,870**	**5,911,532**	**3,987,055**	**15,662,457**	**6,029,078**	**5,938,465**	**4,076,039**	**16,035,582**

Output, Exports, Interprovincial Shipments, Imports and Coal made Available for Consumption in Canada, by Provinces, 1928

(Short tons)

Province	Canadian Coal				Imported from U.S.A.	Imported from Great Britain	Imported from Germany except as noted	Coal available for consumption
	Output	Received from other provinces	Shipped to other provinces	Exported				
PRINCE EDWARD ISLAND—								
Anthracite	–	–	–	–	3,765	–	–	3,765
Bituminous	–	79,954	–	76	4,076	–	–	83,954
Total	–	79,954	–	76	7,841	–	–	87,719
NOVA SCOTIA—								
Anthracite	–	–	–	–	29,815	29,314	–	59,129
Bituminous	6,741,630	–	2,952,857	344,379	27,473	4,381	–	3,476,148
Total	6,741,630	–	2,952,857	344,379	57,288	33,695	–	3,535,377
NEW BRUNSWICK—								
Anthracite	–	–	–	–	39,615	34,061	–	73,676
Bituminous	207,738	400,426	101	25,740	49,484	1,083	–	632,890
Total	207,738	400,426	101	25,740	89,099	35,144	–	706,566
QUEBEC—								
Anthracite	–	–	–	–	902,155	441,465	(a) 7,635	1,351,255
Bituminous	–	2,469,215	–	440	1,303,607	137,549	(b) 2	3,909,933
Total	–	2,469,215	–	440	2,205,762	579,014	7,637	5,261,188
CENTRAL ONTARIO—								
Anthracite	–	–	–	–	2,159,657	19,407	–	2,179,064
Bituminous	–	* 2,328	–	4	10,643,002	–	–	10,645,326
Sub-bituminous	–	* 13,061	–	–	–	–	–	13,061
Lignite	–	* 32,187	–	32	–	–	–	32,155
Total	–	47,576	–	36	12,802,659	19,407	–	12,869,606
MANITOBA AND HEAD OF LAKES—								
Anthracite	–	–	–	–	67,624	–	–	67,624
Bituminous	–	47,340	–	479	1,772,948	–	–	1,819,809
Sub-bituminous	–	96,250	–	–	–	–	–	96,250
Lignite	–	682,639	–	3,609	–	–	–	679,030
Total	–	826,229	–	4,088	1,840,572	–	–	2,662,713
SASKATCHEWAN—								
Anthracite	–	–	–	–	579	–	–	579
Bituminous	–	139,454	–	52	2,536	–	–	141,938
Sub-bituminous	–	85,915	–	–	–	–	–	85,915
Lignite	464,428	1,341,162	221,370	7,754	60	–	–	1,576,526
Total	464,428	1,566,531	221,370	7,806	3,175	–	–	1,804,958
ALBERTA—								
Bituminous	3,215,494	56,097	223,135	241	1,360	–	–	3,049,575
Sub-bituminous	740,496	–	234,003	–	–	–	–	506,493
Lignite	3,379,499	–	1,969,071	602	–	–	–	1,408,926
Total	7,335,489	56,097	2,427,109	843	1,360	–	–	4,964,994
BRITISH COLUMBIA—								
Anthracite	–	–	–	–	21	2,220	–	2,241
Bituminous	2,804,594	93,348	112,069	458,093	17,510	1,132	–	2,346,422
Sub-bituminous	–	38,777	–	–	–	–	–	38,777
Lignite	–	135,353	–	22,440	10,754	–	–	123,667
Total	2,804,594	267,478	112,069	480,533	28,285	3,352	–	2,511,107
YUKON—								
Bituminous	414	–	–	–	40	–	–	454
Total	414	–	–	–	40	–	–	454
CANADA—								
Anthracite	–	–	–	–	**3,203,231**	**526,467**	(a) **7,635**	**3,737,333**
Bituminous	**12,969,870**	**3,288,162**	**3,288,162**	**829,504**	**13,822,036**	**144,145**	(b) **2**	**26,106,549**
Sub-bituminous	**740,496**	**234,003**	**234,003**	–	–	–	–	**740,496**
Lignite	**3,843,927**	**2,191,341**	**2,191,341**	**34,437**	**10,814**	–	–	**3,820,304**
Total	**17,554,293**	**5,713,506**	**5,713,506**	**863,941**	**17,036,081**	**670,612**	**7,637**	**34,404,682**

(a) 6,204 tons from Russia, 1,102 tons from Netherlands, 328 tons from British South Africa, 1 ton from Belgium.
(b) Imported from Newfoundland.
* Includes all coal shipped to any point in Ontario from Western Mines.

Imports of Anthracite, Bituminous and Lignite Coal into Canada, by Months, 1927 and 1928

(Short tons)

Month	1927				1928			
	United States	Great Britain	Other Countries	Total	United States	Great Britain	Other Countries	Total
ANTHRACITE—								
January	234,631	7,696	–	242,327	234,703	6,083	–	240,786
February	216,149	18,730	–	234,879	228,409	5,550	–	233,959
March	182,542	10,928	–	193,470	248,411	5,011	–	253,422
April	174,615	7,521	–	182,136	129,208	2,474	1	131,683
May	279,285	96,545	–	375,830	250,105	60,703	–	310,808
June	402,312	138,279	–	540,591	284,113	32,207	–	316,320
July	271,640	88,429	3,224	363,293	190,799	67,376	–	258,175
August	297,311	111,402	–	408,743	236,048	88,408	–	324,456
September	332,810	33,953	1,931	368,697	315,577	78,813	328	394,718
October	286,225	100,673	–	386,898	387,890	85,550	1,102	474,542
November	314,873	134,046	4,818	453,737	369,141	49,071	–	418,212
December	272,988	40,030	–	313,018	328,827	45,221	6,204	380,252
Total	**3,285,411**	**788,235**	**9,973**	**4,063,619**	**3,293,231**	**526,467**	**7,635**	**3,737,333**
BITUMINOUS—								
January	1,217,201	–	–	1,217,201	766,732	–	–	766,732
February	1,071,517	–	–	1,071,517	729,727	–	–	729,727
March	1,414,818	–	–	1,414,818	882,068	1,309	–	883,377
April	937,631	25	–	937,656	473,889	937	–	474,826
May	1,318,849	24,489	–	1,343,338	976,987	26,786	–	1,003,773
June	1,799,437	20,682	127	1,820,246	1,262,430	21,152	–	1,283,582
July	1,366,636	25,178	196	1,392,010	1,235,792	–	–	1,235,792
August	1,467,913	24,203	–	1,492,116	1,668,021	16,575	–	1,684,596
September	1,175,357	15,972	–	1,191,329	1,511,302	18,981	–	1,530,283
October	1,259,756	13,317	–	1,273,073	1,592,197	24,225	–	1,616,422
November	1,109,541	15,564	–	1,125,105	1,437,088	32,995	–	1,470,083
December	899,352	879	–	900,231	1,285,203	1,185	2	1,286,390
Total	**15,038,008**	**140,309**	**323**	**15,178,640**	**13,822,636**	**144,145**	**2**	**13,966,183**
LIGNITE—								
January	1,131	–	–	1,131	1,804	–	–	1,804
February	1,192	–	–	1,192	1,138	–	–	1,138
March	1,122	–	–	1,122	1,219	–	–	1,219
April	294	–	–	294	500	–	–	500
May	257	–	–	257	318	–	–	318
June	674	–	–	674	81	–	–	81
July	266	–	–	266	94	–	–	94
August	283	–	–	283	473	–	–	473
September	1,066	–	–	1,066	702	–	–	702
October	972	–	–	972	1,250	–	–	1,250
November	1,484	–	–	1,484	1,125	–	–	1,125
December	2,088	–	–	2,088	1,960	–	–	1,960
Total	**10,829**	–	–	**10,829**	**10,814**	–	–	**10,814**

Coal Made Available for Consumption in Canada, 1927 and 1928

(Short tons)

Month	1927				1928			
	Output	Imports	Exports	Coal made available for consumption	Output	Imports	Exports	Coal made available for consumption
January	1,570,480	1,460,659	223,772	2,807,367	1,697,566	1,009,382	88,910	2,618,038
February	1,381,131	1,307,588	88,893	2,602,826	1,406,331	964,824	60,812	2,310,343
March	1,407,753	1,609,410	110,905	2,906,258	1,404,401	1,138,018	75,162	2,467,257
April	1,315,255	1,120,086	25,220	2,410,121	1,146,311	607,009	32,820	1,720,500
May	1,306,173	1,719,425	84,755	2,940,843	1,264,300	1,314,899	53,147	2,525,852
June	1,444,251	2,361,511	65,138	3,740,624	1,350,856	1,599,983	64,989	2,885,850
July	1,230,652	1,755,569	82,206	2,904,015	1,340,957	1,494,061	60,372	2,774,646
August	1,318,069	1,901,142	62,093	3,157,118	1,552,035	2,009,525	72,513	3,489,047
September	1,341,765	1,561,092	70,580	2,832,277	1,411,744	1,925,793	93,479	3,244,058
October	1,480,007	1,660,943	79,339	3,061,611	1,740,693	2,092,214	90,472	3,742,435
November	1,756,556	1,580,326	101,119	3,235,763	1,720,197	1,890,020	79,545	3,530,672
December	1,871,769	1,215,337	119,310	2,967,796	1,519,102	1,668,602	91,720	3,095,984
Total	**17,426,861**	**19,253,088**	**1,113,330**	**35,566,619**	**17,554,293**	**17,714,330**	**863,941**	**34,404,682**

Cobalt

Production in Canada and Exports of Cobalt, 1927 and 1928

—	1927		1928	
	Pounds	$	Pounds	$
PRODUCTION—				
Cobalt, computed as cobalt in metal, oxides and salts sold, and in ores and residues exported	880,590	1,764,534	954,860	1,671,900
EXPORTS—				
Cobalt alloys, cobalt metallics, cobalt oxides, cobalt salts and cobalt ores	–	1,678,468	–	1,734,461

Coke

Production in Canada, Imports, Exports and Apparent Consumption of Coke, by Provinces, 1927 and 1928

—		Nova Scotia, New Brunswick and Quebec	Ontario	Manitoba, Saskatchewan, Alberta and British Columbia	Canada
Production	1927	561,918	1,260,355	204,165	**2,026,438**
	1928	695,384	1,434,358	178,385	**2,308,127**
Imports	1927	105,068	649,165	18,002	**772,235**
	1928	128,964	912,794	17,123	**1,058,881**
Exports	1927	2,234	46,578	25,297	**74,109**
	1928	1,006	7,447	16,605	**25,058**
Apparent consumption	1927	664,752	1,862,942	196,870	**2,721,564**
	1928	823,342	2,339,705	178,903	**3,341,950**

Coke Production in Canada by Months, 1928

Month	Bituminous coal used for coke making			Coke made	Disposition of coke by makers			
					For use by maker		Sold	Total
	Canadian	Imported	Total		In coke plant	In own smelter		
January	79,476	177,360	256,836	182,032	21,021	84,364	89,906	195,291
February	71,791	160,896	232,687	169,245	19,041	90,670	69,691	179,402
March	77,553	173,956	251,509	182,394	20,030	88,634	78,900	187,564
April	73,741	169,690	243,431	171,213	21,040	95,637	54,057	170,734
May	73,620	191,942	265,562	192,645	24,669	122,691	31,531	178,891
June	68,809	202,285	271,094	194,662	17,104	118,624	33,112	168,840
July	67,569	211,794	279,363	200,016	18,546	109,809	40,436	168,791
August	68,380	200,609	268,989	191,284	18,748	99,710	52,256	170,714
September	72,075	197,693	269,768	194,059	20,989	88,963	67,590	177,543
October	85,227	208,651	293,878	210,120	20,797	98,798	79,735	199,330
November	81,791	202,014	283,805	204,568	20,121	99,048	82,367	201,532
December	83,895	211,841	295,736	212,889	21,980	100,931	91,589	214,284
Total	**903,927**	**2,308,731**	**3,212,658**	**2,308,127**	**241,086**	**1,197,879**	**771,170**	**2,212,916**

Copper

Production in Canada, Imports and Exports of Copper, 1927 and 1928

	1927		1928	
	Pounds	Value	Pounds	Value
		$		$
PRODUCTION—				
By Provinces—				
Quebec	3,119,848	403,084	33,959,481	4,947,896
Ontario	45,341,295	4,946,533	66,440,240	8,745,778
British Columbia	91,686,297	11,845,870	101,510,451	14,794,444
Total	**140,147,440**	**17,195,487**	**201,910,172**	**28,488,118**
By Sources—				
In blister copper produced	70,431,203	9,106,557	124,868,911	18,329,372
In copper sulphate produced	141,706	18,309	192,850	28,098
In ores exported	46,210,393	5,967,849	50,435,507	7,354,143
In nickel-copper matte exported	23,364,138	2,102,772	26,442,904	2,776,505
Total	**140,147,440**	**17,195,487**	**201,910,172**	**28,488,118**
IMPORTS—				
Copper in bars or rods, when imported by manufacturers of trolley, telegraph and telephone wires and electric cables for use only in the manufacture of such articles in their own factories	26,384,000	3,719,260	36,063,400	5,537,148
Copper in bars or rods, in coil or otherwise, in lengths of not less than 6 feet, unmanufactured	732,100	128,144	539,300	102,740
Copper in blocks, pigs or ingots	3,795,607	510,771	127,937,700	1,176,941
Copper, old and scrap	5,817,100	737,029	5,606,300	785,141
Copper, ore and concentrates	500	530	100	52
Copper in strips, sheets or plates not polished or coated	1,836,700	385,477	2,586,700	521,559
Copper tubing in lengths of not less than 6 feet, and not polished, bent or otherwise manufactured	2,124,343	506,745	2,549,901	602,730
Copper wire, plain, tinned or plated	434,372	108,662	827,059	217,735
Copper wire cloth, or woven wire of copper	–	19,580	–	14,128
Copper wire, single or several, covered with cotton, linen, silk, rubber or other material, including cable so covered	–	509,312	–	677,923
Copper, all other, manufactures of, n.o.p.	–	644,534	–	1,074,156
Copper, precipitate of, crude	–	–	3,825	102
Anodes of nickel, zinc, copper, silver or gold	–	10,050	–	15,853
Copper, sub-acetate of, or verdigris, dry	3,389	688	410	94
Copper, sulphate of (blue vitriol)	4,110,695	198,553	3,741,971	190,515
Copper, sulphate of, dehydrated, for agricultural or spraying purposes	586,426	29,696	1,627,074	84,130
Copper rollers adapted for use in calico printing	–	5,526	–	21,003
Total	–	**7,514,557**	–	**11,021,950**
EXPORTS—				
Copper, fine, contained in ore, matte, regulus, etc.	72,841,200	7,371,542	76,427,900	7,023,884
Copper, blister	54,258,800	6,607,270	104,704,700	15,375,344
Copper, old and scrap	5,912,500	602,494	8,061,700	869,839
Copper, pig	11,200	1,734	–	–
Copper in bars, rods, strips, sheets, plates and tubing	248,100	63,165	158,200	40,988
Copper wire and cable	–	199,817	–	259,430
Copper manufactures, n.o.p.	–	46,757	–	25,930
Total	–	**14,952,779**	–	**23,595,415**

Feldspar

Production in Canada, Imports and Exports of Feldspar, 1927 and 1928

	1927		1928	
	Tons	Value	Tons	Value
		$		$
PRODUCTION	29,849	259,151	32,265	287,398
IMPORTS	3,040	50,875	3,171	53,818
EXPORTS	28,648	225,955	28,101	230,945

Fluorspar

There has been no production of fluorspar in Canada since 1925. Imports of fluorspar in 1928 totalled 14,362 tons worth $153,046 as compared with 4,561 tons valued at $58,701 imported in the preceding year. Hydrofluosilicic acid amounting to 6 tons appraised at $1,646 was also imported in 1928.

Gold

Production of Gold in Canada by Provinces and by Sources, 1927 and 1928

	1927		1928	
	Fine ounces	Value	Fine ounces	Value
		$		$
NOVA SCOTIA—				
In gold bullion and in concentrates exported	3,151	65,137	1,290	26,667
QUEBEC—				
In blister copper and in ores exported	8,331	172,217	60,006	1,240,434
ONTARIO—				
Porcupine Area—				
In gold bullion	1,153,034	23,835,327	978,172	20,220,609
In slags exported	1,086	22,450	1,244	25,716
Kirkland Lake Area—				
In gold bullion	466,113	9,635,411	591,797	12,233,529
In slags and concentrates exported	1,895	39,173	–	–
Sudbury Area—				
In matte and blister copper exported	4,866	100,589	3,850	79,587
Miscellaneous	50	1 158	3,242	67,018
Total	1,627,050	33,634,108	1,578,305	32,626,459
MANITOBA—				
In gold bullion	182	3,762	19,813	409,571
ALBERTA	42	868	68	1,406
BRITISH COLUMBIA—				
In alluvial gold	7,353	152,000	6,739	139,307
In gold bullion	16,620	343,566	17,114	353,778
In blister copper	30,141	623,070	31,057	642,005
In base bullion and in ores exported	128,980	2,666,253	142,289	2,941,375
Total	183,094	3,784,889	197,199	4,076,465
YUKON—				
In alluvial gold	30,778	636,238	34,117	705,261
In ores exported	157	3,245	252	5,209
Total	30,935	639,483	34,369	710,470
Canada	**1,852,785**	**38,300,464**	**1,891,050**	**39,091,472**

Receipts at the Royal Mint, Ottawa, Canada, 1927 and 1928

Source	1927			1928		
	Gross weight	Precious metal content		Gross weight	Precious metal content	
		Fine gold	Fine silver		Fine gold	Fine silver
	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.
Nova Scotia	2,395·40	2,201·468	125·13	1,585·81	1,289·858	77·33
New Brunswick	–	–	–	–	–	–
Quebec	–	–	–	509·70	463·518	40·74
Ontario	1,721,110·57	1,338,191·977	229,657·45	1,537,294·54	1,217,622·045	199,470·15
Manitoba	310·35	182·336	12·20	44,350·96	15,037·180	1,272·48
Saskatchewan	–	–	–	–	–	–
Alberta	48·15	41·633	4·42	–	–	–
British Columbia including Dominion of Canada Assay Office, Vancouver	111,205·58	92,327·297	14,876·40	92,054·73	76,154·265	11,985·50
Yukon	–	–	–	–	–	–
Jewellery and scrap, various sources	34,138·20	14,873·012	4,930·92	33,673·19	14,528·920	4,729·74
Foreign	498·75	362·247	107·05	25·29	16·921	6·99
Total	**1,869,705·00**	**1,448,179·970**	**249,713·57**	**1,709,494·13**	**1,325,112·707**	**217,582·93**

Gold Bullion Received at Dominion of Canada, Assay Office, Vancouver, B.C., 1928

	Calendar year 1928			
	No. of deposits	Weight before melting and assaying	Weight after melting and assaying	Net value of deposits
		Troy ounces	Troy ounces	$
Bar, nugget and dust, amalgam, etc.—				
British Columbia	390	56,661·06	48,724·77	918,718·06
Yukon Territory	390	42,993·43	42,440·34	693,765·40
Alaska	3	123·39	119·16	2,272·75
Washington	3	50·42	48·46	599·84
Alberta	4	76·85	75·08	1,394·58
Dental and jewellery scrap	691	7,712·12	6,985·17	57,176·02
Total	**1,481**	**107,617·27**	**98,392·98**	**1,673,926·65**

Imports into Canada and Exports of Gold, 1927 and 1928

	1927	1928
	$	$
IMPORTS—		
Coin and bullion—		
Coins, British, Canadian and foreign gold coins	30,510,818	27,654,313
Gold bullion, in bars, blocks, ingots, drops, sheets or plates, unmanufactured	745,820	925,612
Total	**31,256,638**	**28,579,925**
Gold, other—		
Bullion or gold fringe	31,076	47,537
Manufactures of gold and silver—		
Leaf	98,452	127,085
Sweepings	240	168
Electroplated ware	1,013,799	1,282,513
Medals of gold, silver or copper, and other metallic articles, actually bestowed as trophies or prizes, and received and accepted as honorary distinctions, and cups or other metallic prizes won in bona fide competitions	18,365	17,143
Total	**1,161,932**	**1,474,446**
EXPORTS—		
Coin and bullion—		
Gold coin—		
Canadian	1,005	–
Foreign	42,003,384	56,121,042
Gold bullion—		
Canadian	5,019,346	21,067,802
Foreign	–	27,846,696
Total—Canadian	5,020,351	21,067,802
Foreign	42,003,384	83,967,738
Grand total	**47,023,735**	**105,035,540**
Gold-bearing quartz, dust, nuggets and bullion obtained direct from mining operations	7,881,512	10,457,877

Graphite

Production, Imports and Exports of Graphite, 1927 and 1928

	1927		1928	
	Tons	Value	Tons	Value
		$		$
PRODUCTION	1,829	111,656	1,696	87,041
IMPORTS—				
Crucibles, plumbago	–	60,783	–	55,488
Plumbago not ground or otherwise manufactured	–	1,457	–	4,023
Plumbago ground and manufactures of, n.o.p	–	60,897	–	68,515
Total	–	**123,137**	–	**128,026**
EXPORTS—				
Graphite or plumbago, crude or refined	1,699	102,476	1,053	45,384

Gypsum

Production in Canada, Imports and Exports of Gypsum, 1927 and 1928

—	1927		1928	
	Tons	Value	Tons	Value
		$		$
PRODUCTION—				
Crude—				
Lump or mine run	225,264	371,488	24,589	52,215
Crushed	665,499	1,223,070	995,297	1,709,423
Fine ground	7,065	42,633	9,549	54,407
Calcined	165,289	1,613,824	176,411	1,805,962
Total	**1,063,117**	**3,251,015**	**1,205,846**	**3,622,007**
IMPORTS—				
Gypsum, crude (sulphate of lime)	1,092	42,741	1,097	40,312
Plaster of Paris or gypsum ground, not calcined	111	2,996	256	7,379
Plaster of Paris, calcined and prepared wall plaster	7,016	101,823	10,563	142,550
Total	**8,219**	**147,560**	**11,916**	**190,241**
EXPORTS—				
Gypsum or plaster, crude	588,808	959,858	824,536	1,240,987
Plaster of Paris, ground, and prepared wall plaster	6,556	113,049	8,232	140,946
Total	**595,364**	**1,072,907**	**832,768**	**1,381,933**

Iron Ore, Pig Iron, Steel Ingots and Castings

Exports shipments of titanic iron ore from Baie St. Paul, Quebec, during 1928, amounted to 2,244 tons worth $6,732 as against 2,029 tons valued at $8,980 in 1927. No other production of iron ore was reported.

Shipments from Wabana mines in Newfoundland while not included in the mineral production of Canada are of interest because of the tonnage shipped to Nova Scotia. During 1928 shipments from Wabana mines totalled 1,733,642 tons valued at $4,178,077. Of this amount 690,316 tons valued at $1,663,662 were shipped to Canada; 41,493 tons worth $99,998 were exported to the United States; 30,846 tons valued at $74,339 were shipped to Great Britain; and 970,987 tons worth $2,340,079 were exported to Germany.

Production of Pig Iron and Ferro-Alloys in Canada, 1927 and 1928

(Tons of 2,240 lb.)

Item	1927			1928		
	For own use	For sale	Total	For own use	For sale	Total
PIG IRON—						
Basic	512,771	10,930	523,701	711,191	13,370	724,561
Foundry	7,030	138,757	145,787	7,838	225,298	233,136
Malleable	–	40,209	40,209	–	79,838	79,838
Total	**519,801**	**189,896**	**709,697**	**719,029**	**318,506**	**1,037,535**
FERRO-ALLOYS	–	56,514	56,514	–	45,233	45,233

Production of Steel Ingots and Castings in Canada, 1927 and 1928

(Tons of 2,240 lb.)

—	1927			1928		
	For own use	For sale	Total	For own use	For sale	Total
STEEL INGOTS—						
Open-hearth—Basic	861,349	–	861,349	1,179,332	–	1,179,332
Other	6,445	134	6,579	17,082	367	17,449
Total steel ingots	867,794	134	867,928	1,196,414	367	1,196,781
STEEL CASTINGS—						
Open hearth—Basic	1,998	16,521	18,519	2,346	18,360	20,706
Bessemer	79	2,072	2,151	103	1,938	2,041
Electric	225	18,815	19,040	377	20,309	20,686
Total direct steel castings	2,302	37,408	39,710	2,826	40,607	43,433
Total	**870,096**	**37,542**	**907,638**	**1,199,240**	**40,974**	**1,240,214**

Iron Oxides

Iron oxides production from Canadian deposits amounted to 5,395 tons worth $110,338 in 1928 as compared with 6,125 tons at $103,536 shipped in 1927. Deposits in Quebec and British Columbia were operated during the year.

Kaolin

During 1927 the production of kaolin from the St. Remi d'Amherst deposit amounted to 24 tons valued at $120; in 1928 an experimental shipment of 5 tons was made.

Lead

Production in Canada, Imports and Exports of Lead, 1927 and 1928

	1927		1928	
	Pounds	Value	Pounds	Value
		$		$
PRODUCTION—				
Quebec	6,496,577	341,461	6,218,336	284,561
Ontario	7,990,709	528,729	6,786,471	462,710
British Columbia	292,770,544	15,388,020	314,789,762	14,404,780
Yukon	4,165,331	218,929	7,035,668	321,952
Total	**311,423,161**	**16,477,139**	**334,830,237**	**15,474,003**
IMPORTS—				
Old and scrap, pig and block	405,127	33,165	531,301	31,141
Bars and sheets	112,039	8,806	161,970	10,742
Litharge	3,015,000	245,630	3,977,300	279,136
Acetate and nitrate of lead	337,044	28,218	261,768	21,382
Other manufactures	–	344,053	–	342,349
Pipe lead	109,296	8,456	184,754	13,648
Shots and bullets	14,129	1,514	11,158	1,408
Tea lead	59,808	5,936	34,650	3,022
Lead pigments—				
Dry white lead	338,399	24,879	289,001	21,761
White lead, ground in oil	360,301	28,252	492,497	30,211
Dry red lead and orange mineral	1,844,288	125,358	1,469,943	10,733
Total	–	**854,367**	–	**864,533**
EXPORTS—				
Lead, contained in ore	13,032,600	844,637	11,962,900	893,709
Pig lead	239,409,100	11,981,388	255,421,700	10,172,075
Total	**252,441,700**	**12,826,025**	**270,384,600**	**11,065,784**

Lime

Production in Canada, Imports and Exports of Lime, 1927 and 1928

	1927		1928					
	Total		Quicklime		Hydrated Lime		Total	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	Bushels	$	Bushels	$	Bushels	$	Bushels	$
PRODUCTION—								
Nova Scotia	873,200	100,254	42,133	168,532	–	–	42,133	168,532
New Brunswick	343,111	148,321	11,237	130,484	–	–	11,237	130,484
Quebec	3,075,819	806,667	104,771	797,968	11,271	94,774	116,042	892,742
Ontario	6,946,630	2,198,237	231,447	1,896,322	49,082	597,345	280,529	2,493,667
Manitoba	648,975	246,279	19,131	165,437	8,331	146,573	27,462	312,010
Alberta	130,596	46,947	6,680	69,588	–	–	6,680	69,588
British Columbia	688,890	376,683	16,754	280,248	10,201	125,509	26,955	405,757
Total	**12,707,221**	**3,923,388**	**432,153**	**3,508,579**	**78,885**	**964,201**	**511,038**	**4,472,780**
IMPORTS	165,243	70,075	–	–	–	–	154,780	64,811
EXPORTS	601,974	367,939	–	–	–	–	547,646	357,085

Magnesite

Production in Canada, Imports and Exports of Magnesite, 1927 and 1928

	1927		1928	
	Tons	Value	Tons	Value
		$		$
PRODUCTION—				
Calcined	7,337	230,309	13,195	346,990
Clinkered				
Total	**7,337**	**230,309**	**13,195**	**346,990**
IMPORTS—				
Magnesia pipe covering	–	157,982	–	187,381
Magnesite	166	5,805	220	9,543
Magnesite firebrick	–	118,457	–	140,944
EXPORTS—				
Magnesite, calcined	1,953	47,487	1,837	44,101

Magnesium Sulphate

No activities have been reported in this industry since 1923. In that year 121 tons of refined magnesium sulphate were shipped from a deposit near Ashcroft, B.C. The importations of magnesium sulphate or epsom salts during 1928 reached a total of 2,508 tons valued at $47,717; in the previous year 2,404 tons appraised at $39,195 were brought into Canada.

Manganese

No production of manganese from Canadian sources has been reported since 1924 when 584 tons of ore valued at $4,088 were produced in the province of New Brunswick. Deposits of manganese are known to occur in Lunenburg county, Nova Scotia, and near the town of Kaslo in British Columbia.

The chief manganese producing countries of the world are India, Brazil, Caucasus and the West Coast of Africa. The principal managanese-using countries are Great Britain, the United States, Germany, France and Belgium, where the largest steel producers are located.

Imports of manganese oxide amounted to 212,886,100 pounds, valued at $1,058,821, as against 139,780,200 pounds worth $1,451,370 in 1927.

Mercury

Attempts have been made from time to time to develop a cinnabar property near Kamloops, B.C., and it was reported that a small amount of mercury was taken out during 1926. In 1928 no production was reported.

Metals of the Platinum Group

Production of Platinum Group Metals, Canada, 1927 and 1928

		1927		1928	
		Platinum	Palladium, Rhodium, etc.	Platinum	Palladium, Rhodium, etc.
Produced by Canadian, United States and British refineries from Canadian mattes and residues	Fine oz.	11,217	11,545	10,452	13,087
	Value $	716,653	554,190	704,360	605,563
British Columbia placers	Fine oz.	11	–	–	–
	Value $	960	–	–	–
Total	**Fine oz.**	**11,228**	**11,545**	**10,452**	**13,087**
	Value $	**717,613**	**554,190**	**704,360**	**605,563**

Imports into Canada and Exports of Platinum, 1927 and 1928

	1927		1928	
	Quantity	Value	Quantity	Value
	Oz.	$	Oz.	$
IMPORTS—				
Platinum retorts	–	26,901	–	2,881
Platinum wire, and in bars, strips, etc.	–	94,538	–	136,777
Platinum crucibles	–	8,581	–	10,838
Total	–	**130,020**	–	**150,496**
EXPORTS—				
Contained in concentrates	771	52,660	1,212	77,908
Platinum, old and scrap	221	15,789	421	27,463
Total	**992**	**68,449**	**1,633**	**105,371**

Mica

Production of Mica in Canada, 1927 and 1928

Grade	1927			1928		
	Quantity	Value f.o.b. shipping point	Price per pound	Quantity	Value f.o.b. shipping point	Price per pound
	Lb.	$	$	Lb.	$	$
Rough cobbed	255,925	16,943	0·07	–	–	–
Thumb trimmed	443,090	72,513	0·16	91,064	16,698	0·18
Splittings	81,919	54,018	0·66	25,367	14,974	0·59
Scrap	4,696,058	30,873	0·007	7,043,795	50,507	0·007
Total	**5,476,992**	**174,377**	**0·03**	**7,160,226**	**82,179**	**0·01**

Imports and Exports of Mica from Canada, 1927 and 1928

	1927		1928	
	Tons	Value	Tons	Value
		$		$
IMPORTS—				
Mica and manufactures of, n.o.p.	–	97,000	–	135,301
EXPORTS—				
Rough cobbed and thumb trimmed	165	54,937	32	15,951
Mica splittings	159	213,651	84	80,902
Mica, scrap and waste	4,536	57,499	4,346	78,262
Mica, plate and manufactures of (micanite)	–	759	–	646
Total	–	**326,846**	–	**175,761**

Mineral Waters

Mineral springs and wells in Canada produced 269,360 imperial gallons of mineral waters valued at $33,433 during 1928. In the preceding year the marketed output reached a total of 303,530 imperial gallons worth $14,624. The 1928 shipments were made up of 15,730 imperial gallons from Quebec and 253,630 imperial gallons from Ontario.

Importations of mineral and aerated waters into Canada in 1928 were valued at $198,554 and exports during the same period had a valuation of $31,621.

Molybdenum

Molydenite is found in many sections of Canada and during 1924, 1925 and 1926 small quantities of molybdenum concentrates were shipped from the Moss mine at Quyon, Quebec. These were the only shipments reported since 1919. In 1928 considerable development work was done on a molybdenite property in northwestern Quebec.

Natro-Alunite

Production of natro-alunite in Canada during 1927 was reported at 7 tons at $248. This output was obtained from a deposit at Kyuquot Sound, Vancouver Island, British Columbia. No production was reported in 1928.

Natural Gas

Production in Canada, and Imports of Natural Gas, 1927 and 1928

	1927		1928	
	M cu. ft.	Value	M cu. ft.	Value
		$		$
PRODUCTION—				
New Brunswick	630,755	124,637	660,981	322,725
Ontario	7,311,215	4,331,780	7,432,976	4,535,312
Manitoba	200	60	200	60
Alberta	13,434,621	3,586,533	14,337,115	3,391,212
Total	**21,376,791**	**8,043,010**	**22,431,272**	**8,249,309**
IMPORTS—				
Gas for cooking, heating or illuminating, imported by pipe line	104,001	65,759	128,004	82,681

Nickel

Production in Canada and Exports of Nickel, 1927 and 1928

	1927		1928	
	Quantity	Value	Quantity	Value
	Pounds	$	Pounds	$
PRODUCTION—				
Nickle in matte and speiss exported (a)	31,581,097	5,685,138	37,783,991	6,801,118
Refined and electrolytic nickel produced	28,409,996	7,497,436	49,344,875	12,506,371
Nickel in oxides and salts sold	6,744,624	2,079,597	9,826,712	2,921,418
Total	**66,798,717**	**15,262,171**	**96,755,578**	**22,318,907**
EXPORTS—				
Nickel, fine	29,015,800	7,896,211	51,188,700	13,320,034
Nickel contained in matte	36,458,800	5,784,623	36,370,800	5,457,222
Nickel oxide (b)	5,196,100	1,600,986	9,607,200	3,004,951
Total	–	**15,281,820**	–	**21,782,207**

(a) Nickel in matte and speiss exported valued at 18 cents per pound.
(b) Nine months 1927.

Output from Nickel-Copper Mines and Smelters, 1926-1928

—	Unit	1926	1927	1928
Ore mined	ton	1,322,050	1,305,917	1,457,910
Ore shipped	ton	1,322,050	1,305,917	1,457,910
Content of ores, etc., shipped—				
Copper	pound	55,096,719	55,128,978	67,485,937
Nickel	pound	90,110,865	87,147,139	100,420,842
Ore and concentrates treated at smelters	ton	1,309,782	1,350,214	1,476,704
Matte produced	ton	78,643	81,848	91,313
Content of matte—				
Copper	pound	48,318,735	51,937,215	59,408,538
Nickel	pound	78,076,003	79,246,144	86,786,830
Matte shipped to Canadian refineries	ton	34,042	39,942	06,463
Matte exported	ton	34,908	33,541	39,310

Peat

Operations were carried on at the Alfred Bog in Ontario during 1928 and shipments of peat for fuel during the year totalled 1,200 tons worth $5,400, in addition to which 297 tons of humus valued at $445 were shipped for soil dressing.

Petroleum

Production of Crude Petroleum in Canada, 1927 and 1928

—	1927		1928	
	Barrels	Total value	Barrels	Total value
		$		$
New Brunswick	18,244	41,748	8,043	21,391
Ontario—				
Petrolia and Enniskillen	60,171	123,235	60,547	111,745
Oil Springs	37,282	78,749	35,653	68,086
Moore Township	2,014	4,116	2,148	3,952
Sarnia Township	1,679	3,433	1,221	2,246
Plympton Township	493	1,008	371	683
Bothwell	25,184	51,437	24,255	44,621
West Dover	602	1,216	773	1,422
Raleigh Township	276	575	–	–
Tilbury East	60	120	736	1,354
Onondaga	210	736	116	406
Moza Township	7,456	15,219	7,268	13,371
Thamesville	4,139	8,420	1,006	1,851
Euphemia	40	83	–	–
Total for Ontario	139,606	288,347	134,094	249,737
Alberta	318,741	1,185,948	488,268	1,787,807
Canada	**476,591**	**1,516,043**	**630,405**	**2,058,935**

Imports into Canada and Exports of Petroleum and Its Products, 1927 and 1928

	1927		1928	
	Quantity	Value	Quantity	Value
IMPORTS—		$		$
Crude petroleum in the natural state, 0·7900 specific gravity or heavier at 60 degrees temperature, when imported by oil refiners to be refined in their own factories gals.	684,269,831	31,043,180	856,691,524	35,573,568
Crude petroleum, gas, oils other than naphtha, benzine and gasoline lighter than 0·8235 but not less than 0·775 specific gravity at 60 degrees gals.	398,046	30,043	247,624	20,269
Petroleum (not including crude petroleum imported to be refined or illuminating or lubricating oils) 0·8235 specific gravity or heavier at 60 degrees temperature gals.	81,343,133	3,524,132	62,680,093	2,452,504
Petroleum, and other oils imported by miners or mining companies or concerns, for use in the concentration of ores or metals in their own concentrating establishments gals.	206,332	56,435	236,516	66,727
Petroleum, crude, not in its natural state, 0·7900 specific gravity or heavier at 60 degrees temperature when imported by oil refiners to be refined in their own factories gals.	45,500	4,226	263,771	26,378
KEROSENE, FUEL AND ILLUMINATING OILS				
Coal oil and kerosene, distilled, purified or refined, n.o.p. gals.	4,002,839	346,848	3,950,094	359,339
Illuminating oils, composed wholly or in part of the products of petroleum, coal, shale or lignite, costing more than 30 cents per gallon gals.	8,389	4,155	3,952	2,959
Coal oil and kerosene, distilled, known as "engine distillates", 0·725 specific gravity and heavier, but not heavier than 0·770 specific gravity at 60 degrees temperature gals.	26,127	2,523	14,598	1,588
Fuel oil, ex-warehoused for ships' stores. (From April 1, 1927) gals.	37,870,909	1,543,316	32,539,383	981,622
LUBRICATING OILS				
Lubricating oils, composed wholly or in part of petroleum, and costing less than 25 cents per gallon gals.	5,132,017	858,483	6,797,536	1,144,645
Lubricating oils, n.o.p. gals.	6,741,630	2,797,435	8,690,409	3,357,818
GASOLINE AND OTHER OILS				
Gasoline under 0·725 specific gravity at 60 degrees temperature gals.	85,432,311	8,794,848	113,260,769	13,190,400
Gasoline, 0·725 specific gravity but not heavier than 0·770 specific gravity at 60 degrees temperature gals.	22,503,290	2,602,949	27,531,961	3,278,465
Gasoline, n.o.p. gals.	232,727	20,897	58,565	7,335
All other oils, n.o.p. gals.	855,293	212,678	211,832	149,548
OTHER PRODUCTS OF PETROLEUM				
Grease, axle lb.	4,920,965	277,128	5,245,699	293,682
Paraffine wax lb.	3,820,893	182,725	2,247,547	107,223
Paraffine wax candles lb.	435,602	96,183	396,717	88,798
Vaseline, and all similar preparations of petroleum for toilet, medicinal or other purposes lb.	–	198,501	–	240,966
Petroleum, products of, n.o.p. gals.	1,745,896	282,032	1,860,009	332,155
Total	–	**52,878,717**	–	**61,675,989**
EXPORTS—				
Oil, petroleum, crude gals.	18,793,254	923,948	21,531,929	1,098,586
Oil, coal and kerosene, refined gals.	1,759,838	191,533	1,297,081	127,391
Oil, gasoline and naphtha gals.	2,463,379	431,011	3,957,557	686,256
Oil, mineral, n.o.p. gals.	258,251	81,147	279,946	85,014
Wax, mineral cwt.	3,609	21,327	10,010	54,501
Total	–	**1,648,966**	–	**2,051,748**

Phosphate

Canadian production of phosphate in 1928 amounted to 436 tons with a valuation of $5,611; in the preceding year 151 tons worth $1,717 were shipped. The 1928 shipments consisted of 91 tons of crude phosphate obtained from the province of Quebec, and 345 tons extracted for experimental purposes in British Columbia. Imports of phosphate into Canada came entirely from the United States and totalled 10,388 tons evaluated at $68,266.

Pyrites

Production in Canada, Imports and Exports of Pyrites, 1927 and 1928

	1927		1928	
	Tons	Value	Tons	Value
PRODUCTION—		$		$
Quebec*	13,021	42,795	1,312	4,330
Ontario	463	6,077	464	6,118
British Columbia	37,379	140,516	63,983	255,932
Total	**50,863**	**198,388**	**65,759**	**266,380**
IMPORTS—				
Brimstone, or sulphur, crude or in roll or flour	177,686	2,918,047	182,763	2,982,935
EXPORTS—				
Sulphur contained in pyrites	13,611	105,981	31,596	249,705

*NOTE—Corrections received after going to press make Quebec production 10,611 tons valued at $42,128.

Quartz

Production in Canada and Imports of Quartz, 1927 and 1928

—	1927		1928	
	Tons	Value	Tons	Value
		$		$
PRODUCTION—				
Nova Scotia	4,834	16,721	7,424	28,022
Quebec	49,141	132,615	64,927	144,205
Ontario	159,150	266,204	194,503	308,608
Manitoba (Rose quartz)	-	-	1	360
British Columbia	20,859	80,824	10,371	39,617
Total	**233,984**	**496,364**	**277,226**	**520,812**
IMPORTS—				
Silex or crystallized quartz, ground or unground	3,188	75,230	2,865	73,755
Flint	4,311	46,551	3,545	36,204

Salt

Production of Salt in Canada, by Grades, 1927 and 1928

Grade	1927			1928		
	Manufactured	Sold	Value of salt sold (not including packages)	Manufactured	Sold	Value of salt sold (not including packages)
	Tons	Tons	$	Tons	Tons	$
Table and dairy	53,649	53,477	802,922	56,252	56,214	708,927
Common fine	46,808	47,185	297,824	52,112	51,055	258,781
Common coarse	41,754	39,617	309,667	28,057	28,570	212,715
Land salt	5,955	5,829	37,072	3,662	3,685	18,080
Other grades	6,740	6,569	51,187	26,290	24,783	162,178
Brine for chemical works (salt equivalent sold or used)	115,995	115,995	115,995	135,138	135,138	135,290
Total	**270,901**	**268,672**	**1,614,667**	**301,511**	**299,445**	**1,495,971**
Value of packages	-	-	524,437	-	-	560,822
Total	-	-	**2,139,104**	-	-	**2,056,793**

Imports into Canada and Exports of Salt, 1927 and 1928

—	1927		1928	
	Tons	Value	Tons	Value
		$		$
IMPORTS—				
Salt, for the use of the sea or gulf fisheries	62,102	328,824	74,192	417,594
Salt, in bulk, n.o.p.	72,933	321,538	68,765	254,218
Salt, n.o.p., in bags, barrels, etc.	40,882	376,648	45,589	416,149
Salt, table, made by an admixture of other ingredients, when containing not less than 90 per cent of pure salt	844	55,070	479	35,007
Total	**176,761**	**1,082,080**	**189,025**	**1,122,968**
EXPORTS	1,212	22,793	2,930	36,399

Sand-Lime Brick

Production of sand-lime brick in Canada during 1928 totalled 70,813 thousand valued at $874,261 as compared with 72,864 thousand worth $864,911 produced in 1927. The active plants were located in Quebec, Ontario and Manitoba.

Because of its association with other building materials, data regarding the production of sand-lime brick are included in this report. Statistics relating to sand-lime brick are not included in the totals for structural materials industries as both the sand and lime used have been so recorded; production of sand-lime brick is regarded as a manufacturing operation and therefore is shown in the report on the *Manufactures of Non-Metallic Minerals*, issued annually by the Bureau.

Sand and Gravel

Sand and gravel production in Canada during 1928 totalled 22,753,452 tons with a valuation of $6,223,145, as compared with 22,952,819 tons valued at $6,055,601 shipped in 1927.

Imports of sand and gravel into Canada during the year under review were recorded at 588,211 tons worth $275,322 while silica sand imported for the manufacture of glass and carborundum and for use in foundries amounted to 154,384 tons invoiced at $332,338. Corresponding data in 1927 showed, sand and gravel, 289,741 tons at $200,470 and silica sand, 148,831 tons at $346,138. Exports of sand and gravel in 1928 totalled 797,111 tons appraised at $232,422 as against a total of 637,627 tons worth $177,999 exported in 1927.

Silver

Production, Imports and Exports of Silver, 1927 and 1928

	1927		1928	
	Quantity	Value	Quantity	Value
	Fine oz.	$	Fine oz.	$
PRODUCTION—				
Nova Scotia—				
In gold bullion	125	70	77	45
Quebec—				
In gold ores; in blister copper and in copper and in silver-lead-zinc ores exported	740,864	417,625	910,364	529,613
Ontario—				
In silver bullion and nuggets	8,108,026	4,570,494	5,954,880	3,464,312
In gold bullion	266,946	150,477	242,468	141,058
In concentrates, and slags exported by gold mines	5,077	2,862	5,759	3,350
In matte, blister copper and in ores, concentrates and residues exported	927,904	523,060	1,031,307	599,973
Total	9,307,953	5,246,893	7,234,414	4,208,693
Manitoba—				
In gold bullion	12	7	1,763	1,026
Alberta—				
In gold bullion	4	3	7	4
British Columbia—				
In alluvial gold	1,654	932	1,516	882
In gold bullion	2,452	1,382	1,336	777
In blister copper	964,747	543,828	770,557	448,279
In base bullion and in ores exported	10,071,592	5,677,357	10,170,093	5,916,554
Total	11,040,445	6,223,499	10,943,502	6,366,492
Yukon—				
In alluvial gold	6,925	3,904	7,676	4,466
In ores exported	1,640,370	924,676	2,824,992	1,643,407
Total	1,647,295	928,580	2,832,668	1,647,933
Canada	**22,736,698**	**12,816,677**	**21,922,795**	**12,753,806**
IMPORTS—				
Silver in bars, etc., unmanufactured	–	896,535	–	984,547
Silver manufactures of n.o.p. and articles consisting wholly or in part of sterling or other silver	–	344,021	–	350,567
Silver coin	–	410	–	–
Total	–	**1,240,966**	–	**1,335,114**
EXPORTS—				
Silver contained in ore, concentrates, etc	5,445,117	2,894,385	6,815,691	3,824,385
Silver bullion	15,970,961	8,995,040	14,592,406	8,456,968
Total	**21,416,078**	**11,889,426**	**21,408,097**	**12,281,353**

Prices—1927—$0·56408 per fine ounce.
1928—$0·58176 per fine ounce.

Slate

In 1923, crushed green and red slate amounting to 1,836 tons valued at $17,289 was obtained from quarries in Melbourne township. No production has been reported since that date.

Sodium Carbonate

The production of sodium carbonate crystals in 1928 amounted to 560 tons worth $6,160 as compared with shipments of 805 tons at $9,995 in the preceding year.

The manufacture of soda ash from salt brine is carried on in Canada on a large scale by Brunner Mond, Limited, at Amherstburg, Ontario.

Sodium Sulphate

Shipments of natural sodium sulphate from Canadian deposits during 1928 totalled 6,015 tons valued at $69,155. In 1927 the production was 5,659 tons worth $11,319.

Imports of salt cake into Canada in 1928 were recorded at 38,835 tons evaluated at $445,244; in addition to which glauber's salt to a total of 356 tons at $5,386 and bisulphate of soda or nitre cake amounting to 36,561 tons at $311,606 were also imported into Canada.

Stone

Production in Canada, Imports and Exports of Stone, 1927 and 1928

	1927		1928	
	Tons	Value	Tons	Value
		$		$
PRODUCTION—				
Nova Scotia	72,451	120,807	108,452	206,272
New Brunswick	29,908	121,091	38,063	123,445
Quebec	2,534,531	4,268,315	2,917,375	4,648,896
Ontario	4,254,960	4,060,709	4,468,338	3,927,338
Manitoba	154,068	318,556	222,024	591,502
Alberta	3,367	7,830	4,222	20,732
British Columbia	256,553	367,996	290,521	401,642
Canada	**7,306,436**	**9,265,304**	**8,048,995**	**9,919,827**
IMPORTS—				
Building stone, other than marble or granite, sawn on not more than two sides, but not sawn on more than four sides	500	6,793	306	4,085
Building stone other than marble or granite, planed, turned, cut or further manufactured than sawn on four sides	190	14,333	259	27,781
Flagstone, granite, rough sandstone, and all building stone, not hammered, sawn or chiselled	-	183,777	-	167,568
Flagstone and building stone, other than marble or granite, sawn on not more than two sides	-	101,006	-	213,448
Granite, sawn only	-	5,250	-	7,037
Granite, manufactures of, n.o.p.	-	188,364	-	63,932
Paving blocks	-	-	-	10,919
Marble, rough, not hammered or chiselled	-	92,077	-	137,120
Marble, sawn or sand rubbed, not polished	-	151,288	-	170,074
Marble, manufactures of, n.o.p.	-	103,603	-	126,729
Refuse stone	352,467	213,609	597,134	373,453
Manufactures of stone, n.o.p.	-	50,000	-	70,826
Total	-	**1,110,100**	-	**1,373,572**
EXPORTS—				
Crushed	46,772	66,820	128,379	204,853
Granite and marble, unwrought	3,314	33,289	2,529	26,034
Freestone, limestone, and other building stone, unwrought	712	7,437	383	3,664
Dressed stone	-	33,760	-	10,665
Total	-	**141,306**	-	**250,216**

Talc and Soapstone

Production in Canada, Imports and Exports of Talc and Soapstone, 1927 and 1928

—	1927		1928	
	Tons	Value	Tons	Value
		$		$
PRODUCTION—				
Soapstone	–	57,174	–	40,171
Talc	15,110	178,931	14,924	179,186
Total	–	**236,105**	–	**219,357**
IMPORTS—				
Talc or soapstone, ground or unground	4,907	86,858	5,420	91,672
EXPORTS—				
Talc, crude	12	154	10,946	133,601
Talc, refined	10,692	125,123		

Zinc

Production in Canada, Imports and Exports of Zinc, 1927 and 1928

—	1927		1928	
	Pounds	Value	Pounds	Value
		$		$
PRODUCTION—				
Quebec	17,189,045	1,064,690	23,080,960	1,267,837
British Columbia	148,306,479	9,186,103	163,530,890	8,982,752
Total	**165,495,525**	**10,250,793**	**186,611,850**	**10,250,589**
IMPORTS—				
Zinc dust	339,055	34,110	458,923	44,906
Zinc in blocks, pigs and sheets	5,911,727	512,389	9,299,015	687,293
Zinc spelter	1,355,816	89,233	1,845,258	107,920
Zinc white 80% zn	16,665,713	1,113,573	18,128,357	1,166,491
Zinc, sulphate and chloride of (44% zn.)	2,032,015	86,149	2,530,141	98,501
Zinc, manufactures of, n.o.p.	–	277,236	–	169,071
Total	–	**2,112,690**	–	**2,274,182**
EXPORTS—				
Zinc in ore ton	–	–	11,255	1,438,619
Zinc ore ton	25,227	862,498	–	–
Zinc spelter lb.	112,420,400	6,826,808	127,188,500	6,602,867
Total	–	**7,689,306**	–	**8,041,486**

LIST OF PUBLICATIONS

PREPARED IN THE

MINING, METALLURGICAL AND CHEMICAL BRANCH DOMINION BUREAU OF STATISTICS

STATISTICS OF MANUFACTURES—based chiefly on minerals.

General reports on the sections of manufactures covered by the Mining, Metallurgical and Chemical Branch are issued as follows:—

Annual Printed Reports—

Iron and Steel and Their Products: Pig Iron and Ferro-Alloys—Steel and Rolled Products — Castings and Forging — Boilers, Tanks and Engines — Agricultural Implements — Machinery — Automobiles—Auto Accessories—Bicycles—Railway Rolling Stock — Wire and Wire Goods—Sheet Metal Products—Hardware and Tools—Miscellaneous Iron and Steel Products.

Manufactures of Non-Ferrous Metals: Aluminium Products—Brass and Copper Products—Lead, Tin and Zinc Products—Precious Metal Products—Electrical Apparatus and Supplies—Miscellaneous Non-Ferrous Metal Products—Non-Ferrous Smelting and Refining.

Manufactures of Non-Metallic Minerals: Aerated Waters—Asbestos and Allied Products—Cement—Cement Products—Coke and By-Products—Gas, Illuminating and Fuel—Glass (blown, cut, ornamental, etc.)—Lime—Petroleum Products—Products from Domestic Clays—Products from Imported Clays—Salt—Sand-Lime Brick—Stone Dressing—Miscellaneous Non-Metallic Mineral Products, including (*a*) Artificial Abrasives, (*b*) Abrasives Products, (*c*) Artificial Graphite and Electrodes, (*d*) Gypsum Products, (*e*) Mica Products.

Chemicals and Allied Products: Coal Tar and its Products—Acids, Alkalies, Salts and Compressed Gases—Explosives, Ammunition, Fireworks and Matches—Fertilizers—Medicinal and Pharmaceutical Preparations—Paints, Pigments and Varnishes—Soaps, Washing Compounds and Toilet Preparations—Inks, Dyes and Colours—Wood Distillates and Extracts—Miscellaneous Chemical Products, including (*a*) Adhesives, (*b*) Baking Powder, (*c*) Boiler Compounds, (*d*) Celluloid Products, (*e*) Flavouring Extracts, (*f*) Insecticides, (*g*) Polishes and Dressings, (*h*) Sweeping Compounds, (*i*) Chemical Products, n.e.s.

Annual Bulletins.—In addition to the foregoing printed reports, a series of bulletins is issued annually, each of which presents the principal statistics relative to production: (*a*) in a particular industry, *e.g.*, Automobiles—Petroleum Products, etc., (*b*) in each of the four main groups of industries. These are published in mimeograph form from time to time during the year as the necessary material becomes available.

Monthly—

Production of Iron and Steel in Canada.
Coal and Coke Statistics for Canada.
Automobile Statistics for Canada.

SPECIAL REPORTS.—

Report on the Consumption of Prepared Non-Metallic Minerals in Canada.

Report on the Consumption of Mine and Mill Materials in Canada.

Annual Summary Report on the Mineral Industry and the Manufacturing Industries Related Thereto.

The Fertilizer Trade in Canada, July 1, 1926–June 30, 1927.

See Inside Front Cover for Publications on the Mineral Industry.