Published by Authority of the HON. W. D. EULER, M.P.
Minister of Trade and Commerce.

1-28-12-38
Price -
10 cents.

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

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PRELIMINARY ESTIMATE OF CANADA'S MINERAL PRODUCTION, 1938.

(FOR RELEASE BY THE PRESS - MONDAY, JANUARY 2nd, 1939)

Canada's mineral production was valued at $440,634,000 in 1938 compared with the record of $457,359,092 achieved in 1937, according to a report just issued by the Mining, Metallurgical and Chemical Branch of the Dominion Bureau of Statistics at Ottawa.

Despite the four per cent decrease in the aggregate value, which resulted almost entirely from the decline in base metal prices, a falling-off in sales of some of the more important non-metallic minerals and a curtailed structural materials output, many outstanding developments in the mining industry of the Dominion were reported during the year just past. Gold output reached a new peak and the productive field widened. Crude petroleum output more than doubled. The discovery of an extensive and new copper ore body at the Waite-Amulet mine in Quebec added to the economic importance of the property. A railway was completed to serve the mining belt in the north-westerly section of the same province. Copper, lead and zinc were produced in greater quantities than ever before. Canada's mining industry is now definitely established on a very firm basis and its success reacts favourably on the whole economic life of the country.

VALUES OF MINERAL PRODUCTION OF CANADA, BY CLASSES

Year	Metallics	Coal, natural gas, peat and crude petroleum	Other non-metallics	Clay products and other structural materials	TOTAL
	$	$	$	$	$
1929	154,454,056	76,787,397	21,073,959	58,534,834	310,850,246
1932	112,041,763	49,047,342	7,740,837	22,398,283	191,228,225
1934	194,110,968	54,262,099	10,501,762	19,286,761	278,161,590
1935	221,800,349	54,824,200	12,504,008	23,215,400	312,344,457
1936	259,425,194	52,983,320	16,740,117	25,770,741	361,919,372
1937	334,165,243	65,828,379	22,495,271	34,869,699	457,359,092
1938 (estimated)	322,022,000	68,059,000	19,406,000	31,147,000	440,634,000

Metals as a group were valued at $322,022,000, a decrease of 4 per cent from the 1937 total of $334,165,243. Fuels, including coal, natural gas and crude petroleum, totalled $68,059,000, an increase of 3 per cent. Non-metallic minerals, other than fuels, aggregated $19,406,000 compared with $22,495,271, and the structural materials reached $31,147,000 as against $34,869,699 during the preceding twelve months.

...IAL ESTIMATE OF THE MINERAL PRODUCTION OF CANADA, 1938, WITH COMPARATIVE FIGURES FOR 1937.

		1937		1938	
		Quantity	Value	Quantity	Value
			$		$
METALLICS					
Gold	fine oz.	4,096,213	84,676,235	4,679,685	96,738,000
Estimated exchange on gold produced	$	...	58,650,258	...	67,823,000
Silver	fine oz.	22,377,751	10,312,644	21,906,709	9,527,000
Nickel	pound	224,905,046	59,507,176	209,305,951	53,666,000
Copper	pound	530,028,615	68,917,219	585,521,538	57,676,000
Lead	pound	411,999,484	21,055,175	417,309,800	13,987,000
Zinc	pound	370,437,589	18,155,949	374,815,462	11,538,000
Platinum metals	fine oz.	250,206	9,032,596	232,711	8,652,000
Cobalt	pound	567,064	848,145	549,982	834,000
Other metals	$	...	2,113,346	...	(x)1,381,000
TOTAL	$	...	334,165,243	...	322,022,000
NON-METALLICS					
Fuels					
Coal	ton	15,835,954	48,752,048	14,379,000	44,626,000
Natural Gas	M cu.ft.	32,380,991	11,674,802	33,351,000	11,915,000
Petroleum, crude	brl.	2,943,750	5,299,353	6,670,000	11,514,000
Peat	ton	478	2,676	700	4,000
TOTAL	$	...	65,828,879	...	68,059,000
Industrial Minerals					
Asbestos	ton	410,026	14,505,791	371,602	12,262,000
Feldspar	ton	21,346	178,222	14,526	123,000
Gypsum	ton	1,047,187	1,540,485	975,358	1,442,000
Magnesitic-dolomite	$	...	677,207	...	446,000
Quartz (a)	ton	1,377,448	1,129,011	1,467,917	1,004,000
Salt	ton	458,957	1,799,465	464,994	1,874,000
Sodium sulphate	ton	79,884	618,028	63,404	565,000
Sulphur	ton	130,913	1,154,992	111,799	1,062,000
Talc and soapstone	$	...	163,814	...	133,000
Other non-metallics(b)	$	...	723,258	...	495,000
TOTAL	$	...	22,495,271	...	19,406,000
CLAY PRODUCTS AND OTHER STRUCTURAL MATERIALS					
Clay Products (brick, tile, sewer pipe, etc.)	$	...	4,516,859	...	4,210,000
Cement	brl.	6,168,971	9,095,867	5,474,755	8,241,000
Lime	ton	549,353	3,824,917	474,401	3,182,000
Stone, sand and gravel	$	...	17,432,056	...	15,514,000
TOTAL	$	...	34,869,699	...	31,147,000
GRAND TOTAL	$	...	457,359,092	...	440,634,000

(x) Includes value of arsenic, bismuth, cadmium, quicksilver, selenium, tellurium and titanium ore.

(a) Includes low grade silica sand used for fluxing purposes.

(b) Includes mica, nepheline-syenite, etc.

M E T A L S

GOLD - Expansion in gold mining continued. From Nova Scotia on the east to British Columbia on the west and in the Territories to the north, new developments were periodically reported. Enlargement and improvement programmes were conducted at many old and well-established mines; the press reported the ceremony of the pouring of the first gold brick at several new mills; the mining news contained accounts of new properties being explored and mills under construction in fields that had been exploited in earlier years and were now being re-developed under the stimulus of $35.00 gold. In remote areas several new mines were developed, largely by means of that relatively new transportation medium, the aeroplane. To cover in detail the many new developments in gold mining is beyond the scope of this report. However, figures speak for themselves. In January, 1938, gold production was in the neighbourhood of 331,000 fine ounces and during the latter months of the year it had grown to over 410,000 fine ounces with a high in July of 421,000 fine ounces. Not only is gold produced by the so-called gold mines but substantial quantities are recovered from base metal ores. Indeed, the Noranda copper property in Quebec is Canada's third largest gold producer.

Canadian gold output from all sources reached a grand total of 4,679,685 fine ounces worth $164,561,000 in 1938, a gain of 14 per cent over 1937 when production totalled 4,096,213 fine ounces worth $143,326,493. The value of Canada's gold production in 1938 was 51 per cent of the total value of Canadian primary metals production and 37 per cent of the total value of the entire Canadian mineral industry.

PRODUCTION OF GOLD IN CANADA for the CALENDAR YEAR 1937 and ESTIMATED PRODUCTION for 1938.

	1937		1938	
	Fine ounces	Value $	Fine ounces	Value $
Nova Scotia	19,918	696,931	25,700	903,740
Quebec	711,480	24,894,685	895,615	31,494,301
Ontario -				
Porcupine	1,120,525	39,207,170	1,248,690	43,910,184
Kirkland Lake	992,446	34,970,615	1,028,424	36,134,530
Other	467,124	16,344,669	584,834	20,565,687
Total Ontario	2,587,095	90,522,454	2,861,948	100,640,401
Manitoba	157,949	5,526,636	189,652	6,669,113
Saskatchewan	65,886	2,305,351	48,500	1,705,503
Alberta	46	1,610	24	844
British Columbia	505,857	17,699,936	586,931	20,635,912
Yukon and Northwest Territories	47,982	1,678,930	71,415	2,511,309
CANADA	4,096,213	143,326,493	4,679,685	164,561,123

In 1937 the estimated average price of a troy ounce of fine gold, in Canadian funds, was $34.99 and in 1938 the corresponding price was $35.165.

COPPER - Canadian copper production established a new high output record during the year just past. Output stood at 585,521,538 pounds as against 530,028,615 pounds in 1937, an increase of 10 per cent but, owing to lower average prices, the value at $57,876,000 was 16 per cent under the previous year. Ontario is Canada's premier copper producing province, the source here being the nickel-copper ores of the Sudbury district. Noranda is the outstanding producer in Quebec, other important mines in the same district being the Aldermac, Waite-Amulet, and Normetal. At Eustis, Quebec, Canada's oldest copper mine was continuously operated by the Consolidated Copper and Sulphur Company, Ltd.

As a result of careful geological study and a programme of diamond drilling, a copper deposit of major importance was reported as being discovered at the Waite-Amulet Mines Ltd.. This ore occurs at a depth of about 1,000 feet below the surface and present indications suggest an ore body of major economic importance, though some time must elapse before it can be developed ready for production. Copper concentrates at present coming from the Waite-Amulet and Normetal are being smelted at Noranda and those from the Aldermac and Consolidated Copper and Sulphur Company, Ltd., are exported. A plant is now being erected at the Aldermac to produce elemental sulphur from pyritic concentrates with a pure iron oxide as a by-product.

Smelter production by the Hudson Bay Mining and Smelting Company, Ltd., from ... of the Flin Flon and Sherritt Gordon mines was considerably above that of 1937. ...duction from the Britannia mine on Howe Sound in British Columbia was about the same ... in the previous year and the output of the Granby at Copper Mountain was greater than ...n 1937 as a result of continuous operations being maintained throughout the entire twelve months.

NICKEL - Nickel production was about 7 per cent less than in 1937 at 209,305,951 pounds valued at $53,666,000. These figures include the electrolytic nickel and nickel in nickel oxide made at Port Colborne, Ontario, together with the nickel in matte exported by the International Nickel Company and by the Falconbridge Nickel Mines Ltd.. Uses for this metal are constantly widening as a result of intensive research work.

LEAD - Over 98 per cent of Canada's lead production comes from British Columbia, the principal source in that province being the great Sullivan silver-lead-zinc mine at Kimberley. Output totalled 417,399,800 pounds, an increase of one per cent over 1937 but, owing to the drop in average price from 5.11 cents in 1937 to 3.35 cents in 1938 (London prices transposed to Canadian funds), the total value of the production was 34 per cent lower at $13,987,000. Lead production from the Mayo Camp in the Yukon was less than last year.

ZINC - Zinc output, including the refined zinc made at Trail and at Flin Flon, Manitoba, and zinc in concentrates exported by the Consolidated Mining & Smelting Company of Canada, Limited, in British Columbia, and the Normetal mine in northwestern Quebec totalled 374,615,462 pounds as against 370,337,589 pounds in 1937, an increase of one per cent. As in the case of lead, zinc prices were considerably lower in 1938 and the total value of production at $11,538,000 was 36 per cent less than last year.

SILVER - Silver is associated with practically every metallic ore mined in Canada. Production totalled 21,906,709 fine ounces which, when valued at an average price for the year of 43.491 cents per fine ounce (New York prices in Canadian funds), was worth $9,527,000, a drop of 5 per cent in quantity and 8 per cent in value. British Columbia's production constituted 50 per cent of the total, principally from the Consolidated Mining and Smelting Company. Ontario's production was over four million ounces, more than half of which was recovered from nickel-copper ores, the remainder coming from the silver-cobalt and gold ores of the province.

PLATINUM METALS - Canada is the world's largest producer of platinum metals. This is a result of the tremendous increase in recent years in the production of nickel-copper ores with which these precious metals are associated. Output of the metals of the platinum group in 1938 totalled 282,711 fine ounces valued at $8,652,000 as against 259,206 fine ounces valued at $9,932,598 in 1937,an increase of 9 per cent in quantity but a drop of 13 per cent in value.

MISCELLANEOUS - Cobalt output, including cobalt metal and cobalt in oxides made at Deloro, Ontario, and cobalt in ores exported, totalled 549,982 pounds, an increase of 8 per cent over last year. The uses of "stellite" - a cobalt-chromium-tungsten alloy - as a lathe tool and in other places where resistance to wear is of prime importance, are constantly growing.

Selenium and tellurium are produced by the Ontario Refining Company, Ltd., at Copper Cliff, Ontario, and the Canadian Copper Refiners, Montreal East, Quebec; the metals are recovered in the treatment of blister copper from Flin Flon, Copper Cliff, and Noranda. Selenium output was slightly under that for 1937 while tellurium showed a gain over last year. Cadmium output, which is produced as a by-product in the refining of zinc at Trail and Flin Flon, was less than in the previous year.

At Great Bear Lake, in the Northwest Territories, activities were carried on unabated during the year and the tremendous handicaps which accompany mining activities in that distant area are gradually being overcome. Radium ores are shipped to the company's refinery at Port Hope, Ontario. Arrangements were completed during the year with the Eldorado Mines Ltd. for the re-organization and the re-financing of Bear Exploration and Radium. An intensive investigation of the property will be undertaken with the officers of the Eldorado mine in charge. The value of Canada's radium production is not published.

Of particular interest is the production in 1938 of mercury from a cinnabar property in the Bridge River district of British Columbia. Spain, Italy and the United States are the chief sources of the world's quicksilver.

No iron ore has been produced in Canada since 1923 and last year the Algoma Steel Corporation began the active development of the New Helen mine in the Michipicoten area. The original schedule, which called for having the plant in operation during the fall of 1938, was interrupted in April this year but activities at the property have been resumed and the present plans indicate that the mine and proposed sintering plant will be in production by July, 1939.

F U E L S

COAL - Coal production in Canada during 1938 declined 9 per cent to 14,379,363 tons from the 1937 total of 15,835,954 tons. Nova Scotia's output was 13 per cent lower; New Brunswick's, 10 per cent; Saskatchewan's, 4 per cent; Alberta's, 4 per cent, and British Columbia's, 11 per cent.

During the eleven months ending November, 1938, Canada imported 12,613,784 tons compared with 15,247,915 tons a year ago. Anthracite importations from the United States during the eleven months increased slightly to 1,818,975 tons; from Great Britain, 4 per cent to 1,160,749 tons; from Germany, 47 per cent, to 592,680 tons, and from Belgium, over three hundred per cent to 34,182 tons. During the period under review, Canada received 36,249 tons of anthracite from the Netherlands and 30,302 tons from French Indo-China; none was received from these sources in 1937. In 1937 a trial shipment of 78 tons of anthracite was received from Morocco; this year, 19,645 tons were received from this source. Imports of bituminous coal during the period consisted of 9,006,242 tons from the United States, 65,133 tons from Great Britain, 34,258 tons from Germany, and 417 tons from Japan.

OUTPUT OF COAL IN CANADA, BY PROVINCES, during 1937 and 1938.

	1937		1938	
	Short tons	Value	Short tons	Value
		$		$
Nova Scotia	7,856,954	25,640,819	6,274,473	22,780,423
New Brunswick	564,714	1,180,611	326,358	1,090,446
Manitoba	3,172	7,709	2,621	6,554
Saskatchewan	1,049,348	1,494,337	1,005,577	1,582,269
Alberta -				
Bituminous	2,413,784	6,975,163	2,282,920	6,571,421
Sub-bituminous	506,260	1,314,196	488,161	1,274,370
Lignite	2,642,795	6,274,547	2,569,226	6,312,146
Total Alberta	5,562,839	14,563,911	5,340,307	14,157,937
British Columbia	1,598,843	5,863,849	1,430,027	5,208,593
Yukon	84	812	...	...
CANADA	15,835,954	48,752,048	14,379,363	44,626,222

IMPORTS OF ANTHRACITE COAL INTO CANADA, BY MONTHS, FROM THE UNITED STATES, GREAT BRITAIN, GERMANY and RUSSIA (x) (Short tons)

	UNITED STATES		GREAT BRITAIN		GERMANY		RUSSIA	
	1937	1938	1937	1938	1937	1938	1937	1938
January ..	136,296	179,952	15,002	7,527	6,480	5,721	...	...
February .	134,301	161,173	23,012	11,438	6,046	...	...	...
March	150,554	164,100	13,640	21,171	2,148	4,140	...	...
April	228,252	110,502	41,436	35,316	73	...	...	...
May	221,042	181,754	124,198	166,802	10,535	60,296	14,186	...
June	165,816	267,821	154,949	144,464	44,319	44,486	13,680	...
July	142,930	161,541	172,618	157,094	32,042	73,956	48,189	14,952
August ...	90,112	118,584	138,760	142,369	41,622	48,931	48,584	...
September.	127,153	143,456	133,358	184,299	41,090	56,716	14,002	...
October ..	187,528	177,352	168,528	126,414	29,874	46,745	22,308	...
November .	232,517	152,740	128,733	163,855	51,987	51,740	...	...
December .	178,118		80,621		7,480		...	
TOTAL - Calendar Year	1,994,819		1,134,855		273,696		160,889	
TOTAL - ELEVEN MONTHS ending NOVEMBER .		1,813,975		1,160,749		592,680		14,952

(x) In addition, Canada imported 3,131 tons from Belgium and 78 tons from Morocco in 1937 and 36,249 tons from the Netherlands, 34,182 tons from Belgium, 30,302 tons from French Indo-China, and 19,645 tons from Morocco in 1938.

IMPORTS OF BITUMINOUS COAL INTO CANADA, BY MONTHS, FROM THE UNITED STATES, GREAT BRITAIN, GERMANY AND OTHER COUNTRIES.

(Short tons)

	UNITED STATES		GREAT BRITAIN		GERMANY		OTHER COUNTRIES	
	1937	1938	1937	1938	1937	1938	1937	1938
January ..	409,858	354,187	6,927	5,563	...	...	...	417
February .	519,208	261,221	2,125	6,920	1,743	...	...	...
March	453,338	301,082	2,417	6,855	927	...	...	...
April	636,838	394,060	6,440	5,327	3,023	...	...	...
May	1,331,358	923,008	52	7,239	1,109	...	8	...
June	1,537,632	1,145,741	6,514	2,889	22,067	8,114	...	...
July	1,485,683	1,046,084	9,424	8,312	2,920	8,112	235	...
August ...	1,454,179	1,116,122	3,554	12,318	131	2,022	30	...
September.	1,304,113	1,137,860	2,402	2,310	...	8,115	...	...
October ..	1,417,884	1,077,331	3,013	3,375	8,041	...	40	...
November .	1,434,385	1,269,546	6,537	3,920	7,831	7,895	...	...
December .	554,462		6,688		6,369		...	
TOTAL - CALENDAR YEAR	12,338,938		56,073		54,061		313	
TOTAL - ELEVEN MONTHS ending NOVEMBER .		9,006,242		65,133		34,258		417

NATURAL GAS - An advance of 3 per cent was recorded in the production of natural gas in Canada during 1938 compared with the preceding year; the totals were 33,351,000 thousand cubic feet and 32,380,991 thousand cubic feet, respectively.

CRUDE PETROLEUM - The production of crude petroleum and natural gasoline in Canada in 1938 set up a new high record at 6,870,000 barrels worth $11,514,000; the previous high mark of 2,943,750 barrels valued at $5,399,353 was reached in 1937. The Turner Valley field in Alberta continued to be the focal point of interest in the petroleum industry in Canada. During 1938, to the end of November, 38 new wells were drilled into production and, at the end of this period, drilling operations were in progress on 15 other wells. As the market for petroleum products from Turner Valley oil is at present confined to the three Prairie Provinces, the output is on a pro ration basis, the allowable production being governed by the demand. Production in this field reached its peak in September when 863,229 barrels were produced; in the following month the output was lower at 663,578 barrels. With the seasonal decline in demand the November and December outputs were considerably reduced. On December 5th the Alberta Oil and Gas Resources Commission set the daily allowable output for all Turner Valley wells, exceeding a depth of 3,500 feet, at 12,500 barrels.

NON-METALLIC MINERALS, OTHER THAN FUELS

Production of non-metallic minerals, other than fuels, aggregated $19,406,000 in value as against $22,495,271 in 1937. Asbestos production at $12,262,000 was down 15 per cent in value and gypsum, which Canada exports in large quantities, was off 7 per cent in quantity and 6 per cent in value. Salt production totalled 464,994 pounds worth $1,874,000, a slight increase in quantity and value over last year. There was a reduction in sales of sodium sulphate and magnesitic-dolomite. Sulphur, including the elemental sulphur made at Trail, sulphur in sulphuric acid made at Trail and at Copper Cliff, and sulphur in pyrites shipped, totalled 111,799 tons worth $1,062,000. Sales of talc and soapstone were less than in 1937. Feldspar production showed a falling-off but the demand for nepheline-syenite increased. The production of nepheline-syenite in Canada is comparatively recent. This mineral is used to a considerable extent in the manufacture of glass.

An interesting development in the non-metallic field was the discovery, by one of the officers of the Federal Bureau of Mines, at Rutherglen, Ontario, and at Bryson, Quebec, of brucite-bearing limestone. Brucite, a hydrated magnesium oxide contains a higher percentage of magnesium than magnesite and can be utilized for the manufacture of refractory material for lining metallurgical furnaces. It has value also as a potential source of magnesium metal.

STRUCTURAL MATERIALS

Sales of structural materials declined 11 per cent in 1938 to $31,147,000 compared with $34,869,699 in the previous year. Clay products was off 7 per cent in value to $4,210,000; cement sales totalled 5,474,755 barrels worth $8,241,000 as against 6,168,971 barrels valued at $9,095,867 in 1937. Sales of lime at $15,514,000 were 11 per cent less. Using the sales of clay products, cement and lime as a base and comparing these figures with those of last year in relation to stone and sand and gravel, it was estimated that sales of stone and sand and gravel in 1938 will be approximately $15,514,000

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