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METALS OF THE PLATINUM GROUP, 1933.

Finally revised statistics on the output of the metals of the platinum group, as reported by the Mining, Metallurgical and Chemical Branch of the Dominion Bureau of Statistics at Ottawa, show that 55,795 fine ounces of new platinum, palladium and other platinum group metals valued at \$1,502,633 were recovered from Canadian ores in 1933 as compared with a corresponding output of 64,956 fine ounces at \$2,001,283 in 1932.

Imports of platinum, including manufactures thereof, and palladium, iridium, osmium, ruthenium and rhodium were valued at \$73,974 in 1933 as against \$38,408 in 1932 and \$54,428 in 1931. Exports of platinum contained in concentrates or other forms during 1933 totalled 29,228 ounces valued at \$1,168,565 as compared with 14,570 ounces worth \$1,155,705 in the previous year. Exports of platinum, old and scrap, amounted to 189 ounces valued at \$5,439 in 1933 as against 50 ounces at \$2,374 in 1932.

The output of the platinum metals in Canada comes almost entirely from the copper-nickel ores of the Sudbury district in Ontario. The recovery and refining of these metals are accomplished in European metallurgical plants. Relatively small amounts of platinum are recovered annually from stream gravels in British Columbia.

The British Columbia Department of Mines in its 1933 annual report states that "according to reliable reports and due to the increased value of gold, further testing of the Tulameen and Similkameen gravels will be done during 1934 .. several small groups and individuals made a living on Granite Creek, the Tulameen and Similkameen rivers, where the percentage of iridium in the platinum found assisted considerably. A total of about 232 ounces of gold and 40 ounces of platinum was reported to have been received by the banks and local stores. Undoubtedly much more was sold elsewhere."

The 1933 annual report of the International Nickel Company of Canada, Ltd. contains the following information relating to the platinum metals: "The world consumption of new platinum during 1933 is estimated to have been about 175,000 ounces, as compared with an estimated consumption of 75,000 ounces in 1932 and a normal consumption of perhaps 200,000 to 225,000 ounces. The New York price of platinum rose from \$24 per ounce early in 1933 to about \$58 per ounce at the close of the year. Increased activity in the platinum market has followed the substitution of platinum for white and colored golds in the jewelry field, due partly to the restrictions which have in some countries attended the industrial use of gold. The greater demand for platinum in certain industrial and chemical fields was due primarily to the more favourable competitive price position of platinum as compared with gold and other metals. Probably for the first time the amount of platinum used in the industrial arts substantially exceeded that used for jewelry. Important in this respect has been the well maintained demand for platinum and platinum alloys

for spinnerets in the rayon industry and for gauze catalysts in the ammonium-oxidation synthesis of artificial nitrates. Palladium has likewise fared well during the year, its price rising from about \$17 per ounce in New York at the outset of the year, to about \$23 toward the close. The consumption of palladium as well as of platinum for dental golds and white dental alloys has continued to increase and both metals have secured a fairly broad and stable market in this field. Of interest has been the introduction and use of palladium leaf or foil for certain style features and decorative effects in connection with ladies' shoes, hats and gloves, as well as on picture framing and outdoor signs and decorations, where gold was formerly employed. Possessing for electrical purposes qualities similar to those of platinum, the metal is also finding extensive use for contact points in communication equipment where reliability in performance is essential. The newer outlets for the platinum metals are thus gaining in importance and contributing to the maintenance of a stable and diversified market for these metals."

Falconbridge Nickel Mines, Ltd. reported that at the end of the year construction work was going on at its Norwegian refinery in preparation for separating the precious metals.

Regarding Russian platinum production "The Mining Journal", London, in its annual review of platinum and the associated metals, says: "Conventionally Russia is credited with an output of a round figure of 100,000 ounces. Whether this was reached or exceeded in 1933 there is no means of knowing nor is the outside world interested so much in production as in sales, which are centralized in its Berlin office, the Edelmetallevertriebs. There have been occasional reports of stocks being tied up as collateral for loans made by German banks and it is just possible that the actual supplies free for disposal have been curtailed. In more normal times Russian sales seem to have run about 70,000 ounces."

The Department of Mines of the Union of South Africa in its 1933 annual report states that the Rustenburg Platinum Mines Ltd. restarted mining operations during 1933 and a double shift was being worked, a new reduction plant is in course of erection for the purpose of treating the sulphide ores.

Sales of platinum metals in the Union of South Africa totalled 27,758.5 ounces valued at £168,105 in 1933 as compared with 7,086.2 ounces at £43,352 in 1932.

For the total of 27,758.5 ounces of platinum metals realized (shipped), the following average analysis obtained:-

<u>Metal</u>	<u>Expressed as weight of metal</u> Fine ounces
Platinum	24,098.640
Palladium	3,330.886
Iridium	2.706
Osmium and Osmiridium	3.905
Rhodium	0.065
Ruthenium	113.602
Gold	208.699
TOTAL	<u>27,758.503</u>

In addition to the foregoing, 7,618.288 ounces of osmiridium valued at \$40,500 were shipped; this metal was recovered by gold mines and smelting works on the Witwatersrand and Heidelberg.

An advance summary of 1933 production of platinum and allied metals in the United States as issued by the United States Bureau of Mines, Washington, states: "Mine returns for 1933 indicate a production of 793 troy ounces of crude platinum in Alaska, 417 ounces in California, and 56 ounces in Oregon, a total of 1,266 ounces. Reports from refiners of crude platinum, gold bullion and copper indicate that 51,539 ounces of platinum metals were recovered in the United States from these sources in 1933, an increase of 193 per cent as compared with 1932. Of the 51,539 ounces recovered, 49,432 ounces originated in foreign countries; the total recovery comprised 48,581 ounces platinum, 942 ounces palladium, 1,434 ounces iridium, 492 ounces osmiridium, others, 90 ounces. Improved activity in the industries using platinum and restrictions on the use of gold for industrial purposes are reflected in the sales of platinum metals in 1933, which amounted to 107,821 ounces, an increase of 29 per cent over 1932."

Platinum consumed in the Canadian jewellery and silverware industry amounted in value to \$32,140 in 1931, \$26,928 in 1932 and \$32,183 in 1933.

Production of Platinum Group Metals in Canada, 1932 and 1933.

	P L A T I N U M		PALLADIUM, RHODIUM, IRIDIUM, ETC.	
	Fine ounces	\$	Fine ounces	\$
<u>1932</u>				
Ontario	27,284	1,097,021	37,613	901,890
British Columbia..	59	2,372	...	...
TOTAL	27,343	1,099,393	37,613	901,890
<u>1933</u>				
Ontario	24,746	856,190	31,009	645,043
British Columbia..	40	1,400	...	...
TOTAL	24,786	857,590	31,009	645,043

Production of Platinum and Palladium in Canada, 1924 - 1933.

Year	P L A T I N U M				PALLADIUM	
	L O D E		P L A C E R		Fine oz.	\$
	Fine oz.	\$	Fine oz.	\$		
1924	9,161	1,090,858	5	569	8,923	811,993
1925	8,692	1,027,477	6	715	7,856	608,727
1926	9,471	919,349	50	4,258	9,790	626,166
1927	11,217	716,653	11	960	11,247	541,319
1928	10,483	706,090	49	2,819	11,909	511,998
1929	12,491	845,057	28	1,699	12,408	471,614
1930	34,007	1,542,490	17	771	29,959	689,217
1931	44,725	1,595,117	50	1,783	39,313	786,260
1932	27,284	1,097,021	59	2,372	29,727	548,582
1933	24,746	856,190	40	1,400	31,009(x)	645,043

(x) Includes other platinum metals except platinum.

Imports into Canada and Exports of Platinum, 1932 and 1933.

	1932		1933	
	Fine oz.	\$	Fine oz.	\$
IMPORTS				
Platinum retorts, pans, etc.....	...	50	...	11,809
Platinum wire, and in bars, strips, etc.	...	29,740	...	49,136
Platinum crucibles .....	...	8,638	...	13,029
TOTAL .....	...	38,408	...	73,974
EXPORTS				
Contained in concentrates, etc.	14,570	1,155,705	29,228	1,168,565
Platinum, old and scrap	50	2,374	189	5,439
TOTAL	14,620	1,158,079	29,417	1,174,004

WORLD PRODUCTION OF PLATINUM METALS

(Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries")

(Troy ounces)

Producing Country	1930	1931	1932
BRITISH EMPIRE			
Sierre Leone -			
Crude	542	594	527
Union of South Africa -			
Crude (content)	49,375	41,220	7,768
Concentrates (content)	5,967	5,943	1,480
Osmiridium	5,732	6,306	6,523
Canada -			
Platinum from placers (content)	17	50	59
Recovered from Ontario nickel-copper matte:			
Platinum	34,007	44,725	27,284
Palladium	29,959	39,313)	37,613
Other metals	4,133	7,605)	
New South Wales -			
Platinum from placers	155	283	336
Tasmania -			
Osmiridium	953	1,280	785
New Zealand -			
Platinum from placers	3	1	...
Papua (years ended June 30) -			
Platinum from placers .....	...	...	2
Osmiridium from placers	11	20	1
FOREIGN COUNTRIES			
U.S.S.R. (Russia) -			
Crude platinum (estimated)	100,000	100,000	100,000
Abyssinia -			
Platinum (unrefined)	3,805	6,000(b)	8,217

WORLD PRODUCTION OF PLATINUM METALS (concluded)
(Troy ounces)

Producing Countries	1930	1931	1932
<u>FOREIGN COUNTRIES (concluded)</u>			
United States (c) -			
Platinum from placers	527	885	1,074
New platinum metals recovered by refineries from domestic produce -			
Platinum	5,348	5,595	1,912
Palladium	3,656	2,597	1,148
Iridium	128	78	78
Osmiridium	57	35	46
Others	119	88	8
Colombia -			
Platinum from placers	40,803	35,793	40,477
Japan -			
Platinum from placers	128	275	266

(b) Estimated.

(c) Secondary metals were recovered as follows (troy ounces) -

	<u>1930</u>	<u>1931</u>	<u>1932</u>
Platinum	33,787	33,857	21,635
Palladium	7,426	6,351	5,783
Iridium	4,354	1,823	3,726
Others	1,749	1,743	1,444

DIRECTORY

Canadian Mining and Smelting Companies Producing New Platinum Metals, 1933.

<u>Name</u>	<u>Head Office</u>	<u>Location of Refinery</u>
International Nickel Co. of Canada, Ltd.	Copper Cliff, Ont.	Acton, England.
Falconbridge Nickel Mines Ltd.	100 Adelaide St. W., Toronto, Ont.	Kristiansand, Norway.

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