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XX

### FELDSPAR AND QUARTZ, 1932.

Owing to the very close physical association of these minerals in many Canadian deposits (pegmatites), it has been found very difficult for the operator to make a separate division of data pertaining to the mining of each individual mineral and for this reason the general statistics relating to capital, employment, fuel and electricity, etc., have been combined in this bulletin by the Mining, Metallurgical and Chemical Branch of the Dominion Bureau of Statistics at Ottawa.

FELDSPAR - Feldspar production in Canada during 1932 amounted to 7,047 tons valued at \$81,982 as compared with an output of 18,343 tons worth \$186,961 in 1931 and 26,796 tons at \$268,469 in 1930. The total output in 1932 came from the provinces of Quebec and Ontario; the greater part of the feldspar mined in the former province comes from Derry township, Papineau county. The mineral was also shipped in 1932 from properties operating in the township of Aylevin and at Mount Laurier. The Canadian Flint and Spar Co. Ltd. operate a modern feldspar grinding plant at Buckingham, P.Q.; this was active throughout the year.

Production in Ontario came almost entirely from Bathurst township in the Perth area. Shipments of crude feldspar from this district went to both Canadian and United States markets. Two properties in the Hybla area in Hastings county also made shipments during the year.

The grinding plant operated at Kingston, Ontario, by the Frontenac Floor and Wall Tile Co. continued production of ground feldspar in 1932; a considerable tonnage of which was utilized by the company in the production of floor and wall tile.

Feldspar produced in Canada has generally been of the high potash, relatively low soda, variety and has enjoyed during the past years a good market in the United States for the manufacture of enamels, electric porcelain and vitrified ware. About eighty per cent of the output has been exported to the United States but increased milling facilities in Canada and changes occurring in sources of supply and general industry have reduced the exports.

A report on feldspar by Hugh S. Spence of the Mines Branch, Ottawa, states: "Canadian feldspar generally tends to be fresher and more glassy and brittle than most of the commercial spar mined in some foreign countries. These properties, which are allied with high average quality as represented by uniformity of composition, high potash and alumina content, and freedom from impurities, have secured for Canadian feldspar an enviable reputation in those branches of the ceramic industry demanding a high grade product, such as white wares, floor tile, electrical porcelain, glass, etc. For many years, selected Canadian feldspar known in the trade as "No. 1 Canadian" has served as a standard of the highest grade of spar on the market. For most industrial uses, feldspar is required to be finely ground. The degree of fineness depends on the specifications set by the individual consuming industry. Much the larger part of production goes to the pottery and glass trades, with smaller amounts to the enamel ware, brick and tile industries.

H. M. Customs, Great Britain, have issued Import Duties (exemptions) (No. 7) Order, 1933, under which feldspar, raw, including crushed but not ground, is transferred to the free list under the Import Duties Act, 1932, as from July 7.

Analyses of Some Commercial Feldspars

	1	2	3	4	5	6	7
Silica .....	65.70	72.25	69.22	64.44	64.93	68.30	74.04
Alumina .....	18.88	16.05	17.91	18.10	19.45	17.25	14.60
Iron .....	0.05	0.11	0.09	0.10	0.06	0.08	0.06
Lime, magnesia .....	0.28	tr.	0.36	0.42	0.25	0.42	1.50
Soda .....	2.75	2.54	3.27	3.31	2.54	3.65	6.86
Potash .....	12.34	7.44	8.60	13.40	12.46	9.35	2.11

1 - Quebec. 2 - Maine. 3 - New Hampshire. 4 - Ontario. 5 - N. Carolina potash feldspar.  
6 - N. Carolina potash-soda feldspar. 7 - New York soda feldspar. (W. B. Davis)

It is interesting to note that feldspar is now being mined near Broken Hill, New South Wales. The mineral occurs as perthite in a pegmatite dike. It is a high-grade potash type, white, cream, salmon and pink in color. The mining is by open cut and the crude product is shipped to Sydney. Western Australia reports 361 tons of feldspar exported in 1932; this was appraised at 1,399 pounds.

Production in Canada, Imports and Exports of Feldspar, 1931 and 1932.

	1	9	3	1	1	9	3	2
	Quantity		Value		Quantity		Value	
	Tons		\$		Tons		\$	
<u>PRODUCTION -</u>								
Quebec .....	10,381		86,842		3,390		39,062	
Ontario .....	7,962		100,119		3,657		42,920	
TOTAL .....	18,343		186,961		7,047		81,982	
<u>IMPORTS -</u>								
Crude and ground .....	1,877		37,297		1,487		24,875	
<u>EXPORTS</u> .....	10,975		88,913		2,017		15,465	

September, 1933, prices for feldspar in the United States were: North Carolina, potash feldspar, 200 mesh, per ton, f.o.b., white, \$15 in bulk; soda feldspar, \$17. F.O.B. Maine, potash feldspar, white, 200 mesh, \$15.50 in bulk. Granular glass spar, white, 20 mesh, f.o.b. North Carolina, \$10.50 in bulk; semi-granular, \$10. Virginia: No. 1, 325 mesh, \$18; 200 mesh, \$16 to \$17; 160 mesh, \$15; No. 1 glassmakers, \$10.50, spruce pine basis; enamelers, \$13.50 to \$14.50. New Mexico: crude clean, No. 1 potash spar, \$4.75; ground, \$9.50.

NOTE - The above prices were supplied by "Metal and Mineral Markets."



WORLD PRODUCTION OF FELDSPAR, 1930 and 1931.

This statement taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries."

(Long tons)

Producing country	1930	1931
<u>BRITISH EMPIRE</u>		
United Kingdom - China stone .....	62,920	42,650
Canada .....	23,925	16,378
India .....	...	334
Australia (including china stone) .....	67	205
<u>FOREIGN COUNTRIES</u>		
Czechoslovakia (c) .....	30,000	30,000
France .....	(a)	(a)
Germany (Bavaria only) .....	5,069	4,921
Italy .....	5,659	(a)
Norway (exports) .....	19,608	14,866
Roumania (b) .....	1,932	(a)
Sweden .....	37,986	28,066
United States (sales) .....	171,768	147,119
Argentina .....	193	(a)
Manchuria .....	(a)	(a)

NOTE - 19,987 long tons of Feldspar were produced in Russia during year ended September, 1928 - later figures are not available.

(a) Information not available. (b) Converted from cubic metres at the rate of 1 cubic metre = 2 long tons. (c) As estimated by U. S. Bureau of Mines.

WORLD IMPORTS OF FELDSPAR (LESS RE-EXPORTS), 1930 and 1931.

This statement taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries."

(Long tons)

Importing Country	1930	1931
<u>BRITISH EMPIRE</u>		
United Kingdom .....	(b)	10,251(c)
Canada .....	2,836	1,676
<u>FOREIGN COUNTRIES</u>		
Austria .....	1,519	1,735
Belgium-Luxemburg E.U. ....	5,362	7,926
Czechoslovakia .....	1,813	1,471
Denmark .....	1,281	594
Finland .....	270	212
Germany .....	37,336	29,240
Latvia .....	...	22
Netherlands .....	3,235	2,059
Poland .....	4,571	2,639
Sweden .....	345	469
United States .....	20,057	10,790

(b) Not separately recorded in the trade returns of the United Kingdom prior to 1931. The exports from Norway and Sweden into the United Kingdom were 13,386 tons during 1930.

(c) Including China stone.

NOTE:- Data for 1932 on World Production and World Imports are not yet available.

QUARTZ - Production of quartz including crushed quartzite and silica in other natural forms totalled 189,132 tons valued at \$276,147 as compared with 195,724 tons worth \$303,158 in 1931. Silica was produced in Quebec, Ontario, Manitoba, and British Columbia. Records indicate that it was utilized for a wide range of purposes including fluxing of metalliferous ores, manufacture of scouring compounds, electro chemical and electro-metallurgical processes, glass manufacturing, moulding, brick making and artificial abrasive manufacture.

There are now several modern plants operating in Eastern Canada for the production of ground or crushed silica products and in Manitoba a natural silica sand is shipped to glass plants from a deposit located on Black Island, Lake Winnipeg.

In July of the present year a new mill of 300 tons daily capacity was put in operation at Lac Remi, Quebec. This plant is treating material from a large local deposit of kaolin and silica and producing pure kaolin for the ceramic, paper and other trades and pure silica for glass, sand-blasting and other purposes. The machinery has been so arranged that any desired amount of sand for foundry purposes can also be produced.

Production in Canada and Imports of Quartz and Silica Products, 1931 and 1932.

	1	9	3	1	1	9	3	2
	Tons		Value		Tons		Value	
			\$				\$	
<u>PRODUCTION -</u>								
Nova Scotia .....	3,116		6,836					
Quebec .....	26,987		69,759		20,123		71,645	
Ontario .....	97,888		148,642		66,135		93,574	
Manitoba .....	67,214		76,624		87,253		102,493	
British Columbia .....	519		1,297		15,621		8,435	
CANADA .....	195,724		303,158		189,132		276,147	
<u>IMPORTS -</u>								
Flint and ground flint stones .....	2,616		23,653		1,926		16,075	
Silex or crystallized quartz, ground or unground .....	5,239		130,368		6,186		167,997	
Silica sand for glass, carborundum and steel and filtration plants and sand blasting .....	107,712		235,191		59,176		162,869	
Silica fire brick, 90% silica .....			234,909				122,952	

Principal Statistics of the Feldspar and Quartz Mining Industry in Canada, 1931 and 1932.

		1931	1932
Number of firms .....		33	33
Capital employed .....	\$	1,342,668	936,177
Number of employees - On salary .....		25	20
On wages .....		141	100
Total .....		166	120
Salaries and wages - Salaries .....	\$	31,462	32,462
Wages .....	\$	104,347	59,141
Total .....	\$	135,809	91,603
Cost of fuel and electricity .....	\$	20,996	13,391
Selling value of products .....	\$	490,119	358,129

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