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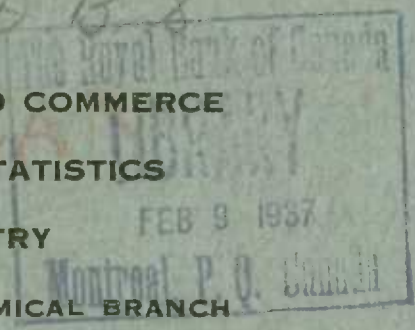
CANADA

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

CENSUS OF INDUSTRY

MINING, METALLURGICAL & CHEMICAL BRANCH



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THE MICA INDUSTRY

IN

CANADA

1935

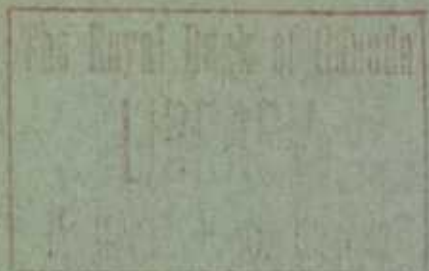
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OTTAWA  
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DEPARTMENT OF TRADE AND COMMERCE  
DOMINION BUREAU OF STATISTICS  
MINING, METALLURGICAL AND CHEMICAL BRANCH  
OTTAWA - CANADA

Dominion Statistician: R. H. Coats, LL.D., F.R.S.C., F.S.S. (Hon.)  
Chief - Mining, Metallurgical and Chemical Branch: W. H. Losee, B. Sc.

MICA, 1935.

Finally revised statistics issued by the Mining, Metallurgical and Chemical Branch of the Dominion Bureau of Statistics, Ottawa, show a production in Canada of 1,255,616 pounds of mica valued at \$82,038 during 1935 as compared with 1,995,269 pounds at \$97,071 in 1934. The output of the mineral in 1935 came entirely from properties operated in the provinces of Quebec and Ontario. Of the total quantity produced in 1935, scrap including ground mica, totalled 1,068,618 pounds or 85 per cent; the value of knife trimmed amounted to \$52,959 or 65 per cent of the total value of all grades shipped; the value of splittings totalled \$15,506, ranking second in point of value.

The falling off in production during 1935 was reflected in a relatively slight decrease in employment throughout the industry as compared with the preceding year; employees in 1935 totalled 92 as compared with 102 in 1934, while salaries and wages declined from a total of \$50,391 in 1934 to \$45,217 in 1935. The number of employees engaged in actual mining during 1935 averaged 55, while 34 were employed in dressing works.

Exports of rough cobbled and thumb-trimmed mica in 1935 totalled 149,600 pounds valued at \$52,196; those of mica scrap and waste amounted to 1,340,000 pounds worth \$6,189 while exports of mica splittings totalled 34,600 pounds valued at \$16,615. The total value of all mica exports amounted to \$75,950 as against \$117,802 in the preceding year.

"The Canadian mica production is confined almost exclusively to the phlogopite variety termed in the trade "amber mica". The productive mica region lies for the most part within a radius of about one hundred miles from the city of Ottawa, the northern portion of the field lying principally between or adjacent to the Gatineau and Lièvre rivers, in Quebec, and the southern portion in the Perth-Kingston district in Ontario. An examination was made during 1935 of an unusual occurrence of fine, flake mica of muscovite or sericite type at Baker Inlet, on the British Columbia coast, about 40 miles south of Prince Rupert. The deposit is in the form of a flat-lying bed from 3 to 7 feet thick as exposed in the mountain side, and consists essentially of a soft mass of friable mica that can be readily rubbed to a fine powder between the fingers. In view of the ease with which the material can be pulverized, and of the exceptional shipping facilities, the deposit merits consideration as a source of flake mica for the roofing, rubber, and paint trades. The high lustre of the mica might also render it acceptable to the wallpaper trade.

"The improved demand for Canadian mica, due, it is believed, in part, to curtailment of supplies from Madagascar and also to a largely increased demand for heat-resistant amber mica, led to the re-opening of a few smaller mines, and there was also a small production from newly-opened deposits in Templeton and Joliette townships, Quebec." (Report No. 773, Department of Mines, Ottawa)

Table 1 - PRINCIPAL STATISTICS OF THE MICA MINING INDUSTRY IN CANADA, 1933, 1934 and 1935.

	1933	1934	1935
Number of firms .....	15	16	24
Capital employed .....	\$ 312,396	139,716	145,557
Number of employees - On salary .....	3	4	3
On wages .....	38	98	89
Total .....	41	102	92
Salaries and wages - Salaries .....	\$ 2,242	2,475	2,513
Wages .....	22,765	47,916	42,704
Total .....	\$ 25,007	50,391	45,217
Cost of fuel and electricity .....	\$ 80	50	347
Cost of process supplies used .....	\$ (a)	(a)	346
Selling value of products .....	\$ 49,284	97,071	82,038

(a) Information not available.

Table 2 - NUMBER OF WAGE-EARNERS ON PAYROLL OR TIME RECORD ON 15th OF EACH MONTH OR NEAREST REPRESENTATIVE DATE, 1934 and 1935.

Month	1934		1935	
	Mine	Shop	Mine	Shop
	No.	No.	No.	No.
January .....	19	39	43	45
February .....	25	36	41	52
March .....	20	32	33	47
April .....	29	30	44	39
May .....	49	51	74	28
June .....	51	61	68	43
July .....	52	56	70	48
August .....	55	52	69	20
September .....	63	64	57	22
October .....	57	70	50	22
November .....	49	72	36	27
December .....	46	63	37	22

Table 3 - PRODUCTION OF MICA IN CANADA, BY GRADES, 1934 and 1935.

	1934			1935		
	Quantity	Value, f.o.b. shipping point	Price per lb.	Quantity	Value, f.o.b. shipping point	Price per lb.
	Lb.	\$	\$	Lb.	\$	\$
Rough cobbled ..	2,459	514	0.21	30,605	2,448	0.08
Knife-trimmed ..	61,003	25,628	0.42	111,459	52,959	0.48
Thumb-trimmed ..	90,726	27,360	0.30	12,013	3,616	0.30
Splittings .....	75,050	33,120	0.44	32,921	15,506	0.47
Scrap .....	1,766,031	10,449	0.006	1,068,618	7,509	0.007
TOTAL .....	1,995,269	97,071	...	1,255,616	82,038	...



Table 4 - PRODUCTION OF MICA IN CANADA, BY PROVINCES, IMPORTS AND EXPORTS, 1934 and 1935.

	1934		1935	
	Pounds	Value \$	Pounds	Value \$
<b>PRODUCTION (SALES) -</b>				
Quebec .....	643,967	85,967	745,790	74,894
Ontario .....	1,236,302	9,059	509,826	7,144
British Columbia .....	115,000	2,045	...	...
TOTAL .....	1,995,269	97,071	1,255,616	82,038
<b>IMPORTS</b>				
<b>Mica and manufactures of, n.o.p. -</b>				
From - United Kingdom .....	...	4,872	...	13,041
United States .....	...	40,242	...	46,765
British India .....	...	17,268	...	4,620
Germany .....	...	128	...	...
Other countries .....	...	170	...	2,375
TOTAL .....	...	62,580	...	66,801
Chalk, China, Cornwall or cliff stone and mica schist .....	...	21,371	...	20,229
<b>EXPORTS -</b>				
<b>Mica, rough cobbled and thumb-trimmed -</b>				
To - United Kingdom .....	147,000	60,635	105,500	44,904
United States .....	43,000	8,939	42,200	6,571
Other countries .....	...	...	1,900	721
<b>Mica, scrap and waste -</b>				
To - United States .....	1,680,400	7,736	1,339,500	6,186
United Kingdom .....	...	...	500	3
<b>Mica splittings -</b>				
To - United Kingdom .....	19,200	6,635	800	308
United States .....	69,400	31,967	33,800	16,307
Mica plate and manufactures of (micanite) ..	...	1,890	...	950
TOTAL .....	...	117,802	...	75,950

Table 5 - PRODUCTION (SALES) OF MICA IN CANADA, BY PROVINCES, JANUARY 1 to JUNE 30, 1935 and 1936.

Province	1935		1936	
	Pounds	\$	Pounds	\$
Quebec .....	355,868	40,399	393,953	29,057
Ontario .....	740,807	5,330	783,628	5,879
British Columbia .....	...	...	...	...
TOTAL .....	1,096,675	45,729	1,177,581	34,936

Table 6 - CANADIAN DEALERS QUOTATIONS AT THE END OF 1935 WERE AS FOLLOWS:

<u>Knife-trimmed sheet</u>		<u>Splittings</u>
	per pound	per pound
1 x 3 inches .....	35 cents	1 x 1 inches ..... 48 cents
2 x 3 inches .....	50 - 55 cents	1 x 2 inches ..... 50 cents
2 x 4 inches .....	75 - 80 cents	
3 x 5 inches .....	\$1.25-\$1.35	
4 x 6 inches .....	\$1.75-\$1.85	
5 x 8 inches .....	-\$3.00	

Ground mica, 20 mesh, \$25 per ton; 60 mesh, \$30; 120 mesh, \$45; all f.o.b. Ottawa, in ton lots.

Table 7 - PRODUCTION (x) OF MICA IN CANADA, 1926 - 1935.

Year	Short tons	Value \$	Year	Short tons	Value \$
1926 .....	2,545	229,204	1931 .....	1,339	54,066
1927 .....	2,738	174,377	1932 .....	309	6,828
1928 .....	3,660	87,168	1933 .....	944	49,284
1929 .....	4,053	118,549	1934 .....	998	97,071
1930 .....	1,170	96,004	1935 .....	628	82,038

(x) Sales.

Table 8 - CONSUMPTION OF MICA IN THE CANADIAN ELECTRICAL APPARATUS AND SUPPLIES INDUSTRY, 1931 - 1935.

Year	Pounds	\$
1931 .....	150,561	101,531
1932 .....	102,410	68,747
1933 .....	35,098	27,129
1934 .....	93,297	60,520
1935 .....	73,621	58,016

Table 9 - CONSUMPTION OF GROUND MICA IN THE MANUFACTURE OF CANADIAN COMPOSITION ROOFING, 1931 - 1935.

Year	Tons	\$
1931 .....	(not available)	
1932 .....	21	683
1933 .....	48	1,849
1934 .....	71	2,086
1935 .....	60	1,844

Table 10 - CONSUMPTION OF GROUND MICA IN THE CANADIAN RUBBER INDUSTRY, 1931 - 1935.

Year	Pounds	\$
1931 .....	103,177	6,265
1932 .....	73,600	4,111
1933 .....	89,165	4,769
1934 .....	135,424	6,792
1935 .....	124,150	6,277 (x)

(x) Subject to revision.

Table 11 - CONSUMPTION OF MICA IN THE CANADIAN MICA PRODUCTS INDUSTRY, 1931 - 1935.

Year	Pounds	\$
1931 .....	(not available)	10,099
1932 .....	10,100	4,290
1933 .....	16,025	6,553
1934 .....	16,553	7,040
1935 .....	17,320	7,018

Table 12 - IMPORTS INTO AND CONSUMPTION OF MICA IN THE UNITED KINGDOM, 1931 - 1935.

Year	Tons	Value £
1931 .....	1,984	244,994
1932 .....	1,634	172,926
1933 .....	1,879	218,247
1934 .....	2,421	300,530
1935 .....	2,625	378,545

Table 13 - SCRAP MICA IMPORTED INTO THE UNITED STATES, 1934 and 1935.

Country	short tons	1 9 3 4		1 9 3 5		
		V A L U E Total \$	Average \$	short tons	V A L U E Total \$	Average \$
Canada .....	860	7,803	9.07	696	6,191	8.90
India (British) .....	1,613	14,138	8.77	1,667	9,204	5.52
Union of South Africa ..	225	1,620	7.20	...	...	...
U. S. S. R. (Russia) ...	807	4,313	5.34	630	3,502	5.56
TOTAL .....	3,505	27,874	7.95	2,993	18,897	6.31

Imports of mica into the United States, and including all grades, amounted to 9,756,493 pounds valued at \$908,384 in 1935, a decrease of 5 per cent in quantity, but an increase of nearly 19 per cent in value compared with 1934; imports of unmanufactured mica (6,580,486 pounds valued at \$211,556) decreased about 14 per cent both in quantity and value. Imports of splittings (3,041,408 pounds valued at \$584,657) increased 42 per cent in quantity and 32 per cent in value compared with 1934. The United States Bureau of Mines reports that sales of uncut sheet mica of United States origin in 1935, amounting to 936,633 pounds, valued at \$161,150, exceeded sales in 1934 by 61 per cent in quantity and 79 per cent in value. As usual, North Carolina was the principal producer, accounting for about 55 per cent of the total; New Hampshire was second with 14 per cent. An important trend in the United States mica industry is the great increase in the quantity of finely divided mica obtained from sources other than scrap; in 1935 true scrap provided only about 65 per cent of the raw material from which the total output of finely divided mica was obtained; the remaining 35 per cent was recovered from washing kaolin or was manufactured from mica schists.



The following table shows the range in prices of United States uncut sheet mica f. o. b. North Carolina, as reported in Metal and Mineral Markets, 1935: -

Table 14 -

<u>Size</u>	<u>Price per pound</u> \$	<u>Size</u>	<u>Price per pound</u> \$
Punch .....	.05 - .05	3 x 4 inches .....	.90 - 1.25
1/2 x 2 inches .....	.15 - .30	3 x 5 inches .....	1.25 - 1.50
2 x 2 inches .....	.30 - .50	4 x 6 inches .....	1.50 - 2.50
2 x 3 inches .....	.50 - .65	6 x 8 inches .....	2.50 - 3.50
3 x 3 inches .....	.65 - .85	8 x 10 inches .....	4.00 - 5.00

Exports of mica and manufactures thereof in 1935 from the United States amounted to 2,998,762 pounds valued at \$165,385, a decrease of about 14 per cent in quantity and 12 per cent in value compared with 1934.

Table 15 - EXPORTS OF MICA FROM CEYLON, 1935.

<u>To -</u>	<u>Quantity</u> cwt.	<u>Value</u> Rs.
United Kingdom .....	24	3,750
British India .....	1	200
United States .....	20	6,000
Total .....	45	9,950

Table 16 - EXPORTS OF MICA FROM INDIA, 1933 - 1935.

	1933	1934	1935
In blocks .....	Cwt. 15,702	20,617	23,774
	Rupees 2,429,357	3,520,930	4,334,680
Splittings .....	Cwt. 40,945	72,301	118,040
	Rupees 1,662,676	2,509,595	3,700,001
Total of Mica -			
To - United Kingdom .....	Cwt. 22,505	29,606	37,519
	Rupees 2,268,698	3,106,625	3,852,105
Germany .....	Cwt. 6,161	10,013	12,813
	Rupees 320,961	565,451	618,839
France .....	Cwt. 1,067	1,763	3,642
	Rupees 79,831	147,282	370,253
To - United States .....	Cwt. 19,812	39,517	69,397
	Rupees 894,321	1,306,297	1,994,942
Other countries .....	Cwt. 7,102	12,019	18,443
	Rupees 528,222	904,870	1,198,542
TOTAL .....	Cwt. 56,647	92,918	141,814
	Rupees 4,092,033	6,030,525	8,034,681
Value of rupee in Canadian funds .....	34.768 cents	37.66 cents	37.17 cents

The Comité D'Etudes Minières for the French colonies reported a production of 0.9 metric tons of muscovite and 520 metric tons of phlogopite in Madagascar during 1935.



The Chamber of Mines, Rhodesia, reported that 8,196 pounds of mica valued at £719 were produced in Southern Rhodesia in 1935, as compared with 3,867 pounds at £272 in 1934. The Department of Mines, Union of South Africa, reported a production (sales) in the Union of 212,874 short tons of mica valued at £286 during 1935 as against 306,114 tons at £481 in 1934.

Table 17 - WORLD PRODUCTION OF MICA (Taken from the Imperial Institute's publication "The Mineral Industry of the British Empire and Foreign Countries") (long tons)

Producing Country	1933	1934	1935
<u>BRITISH EMPIRE -</u>			
Northern Rhodesia .....	1	1	2
Southern Rhodesia .....	4	2	4
Tanganyika Territory --			
Sheet .....	11 (	9	25
Waste .....	(	22	21
Union of South Africa (b) .....	391	273	573
Canada --			
Knife trimmed .....	4	27	50
Thumb trimmed .....	23	41	5
Splittings .....	33	33	15
Rough cobbed .....	...	1	14
Scrap .....	783	788	477
Ceylon (exports) .....	(2 cwt.)	20	2
India (exports) --			
Sheet .....	785	1,032	1,189
Splittings .....	2,047	3,615	5,902
Australia .....	41	120	(a)
<u>FOREIGN COUNTRIES -</u>			
Italy .....	3	5	(a)
Norway .....	5	17	11
Sweden .....	67	16	31
U. S. S. R. (Russia) .....	5,687	(a)	(a)
Madagascar --			
Muscovite .....	(692 lb.)	(1,543 lb.)	(1,917 lb.)
Phlogopite, etc. ....	170	289	513
United States (sales) --			
Sheet (uncut) .....	163	261	418
Scrap .....	7,813	6,892	16,832
Argentina .....	74	172	(a)
Bolivia (exports) .....	2	4	2
Brazil .....	28	12	(a)
Korea .....	23	101	86

(a) Information not available.

(b) Nearly all scrap.

The following amounts of lithia mica were produced: --

	1933	1934	1935
South West Africa .....	...	231	489 long tons
France .....	500	1,200	(a) " "
Germany .....	72	(a)	(a) " "
Portugal .....	870	294	8 " "

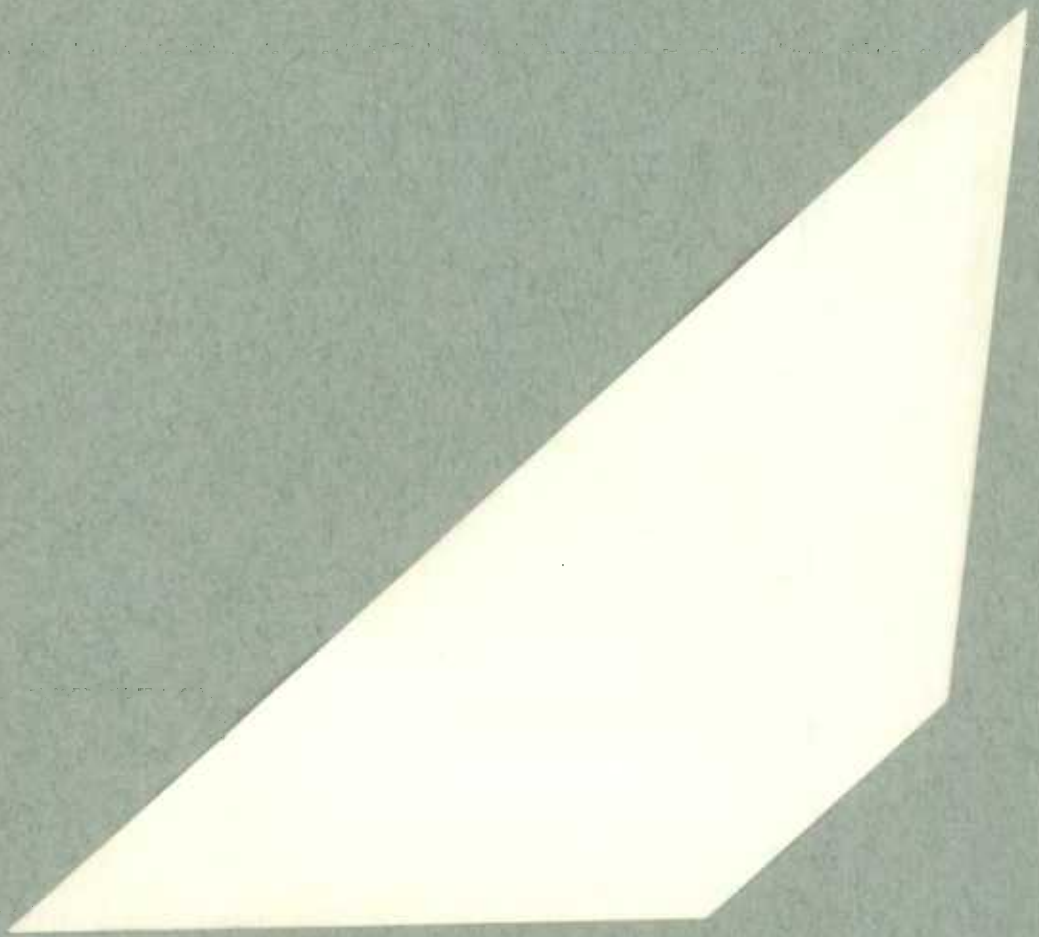
VERMICULITE

Dana describes the Vermiculite group as including a number of micaceous minerals, all hydrated silicates, in part closely related to the chlorites, but varying somewhat widely in composition. The laminae in general are soft, pliable, and inelastic, the lustre, pearly or bronze-like, and the color varies from white to yellow and brown. Connected with the loss of water upon ignition is the common physical character of exfoliation. The United States Bureau of Mines states that experience seems to indicate that no vermiculite product weighing, after exfoliation, more than about 6 pounds per cubic foot can be marketed successfully. Calcined vermiculite products include house insulation, acoustic plaster, pipe covering, boiler lagging, refractory brick, auto and aeroplane insulation, refrigerator car insulation, wall board, shingles, insulation cement and a variety of other materials. According to the "Minerals Yearbook", 1936, the prices of vermiculite vary in the United States; standard-grade raw material (after being expanded) for house insulation purposes, is sold at \$12 to \$20 a ton according to locality, the average probably being between \$14 and \$16 per ton in wholesale quantities. North Carolina raw vermiculite is nominally quoted in trade journals at \$7 per ton f.o.b. mines. There is no record to date of any commercial production of crude vermiculite in Canada.

DIRECTORY OF FIRMS IN THE CANADIAN MICA MINING INDUSTRY, 1935.

<u>Name of Firm</u>	<u>Head Office Address</u>	<u>Location of Plant or Mine</u>
<u>QUEBEC -</u>		
Ahearn, W. (x)	538 MacLaren St., Ottawa, Ont.	Hull tp.
Bazinet, Francis	5778 Cartier St., Montreal	Joliette tp.
Blackburn Brothers Ltd.(a)	Blackburn Bldg., Ottawa, Ont.	Templeton tp.
Bonhomme, T. (x)	Papineauville	Perkins
Charlevoix Radium Exp. Co. Ltd.	259 St. Jean St., Quebec	
Cleary, G.	Wilson's Corners	(East) Wakefield Tp.
Cross, W. C.	209 Bridge St., Hull	Hull Tp.
Flynn, H. T., Estate of	33 Montcalm St., Hull	Hull Dist.
Gauthier, J. B.	Buckingham	Buckingham Dist.
Gourdeau, J.	61 Rue d'Auteuil, Quebec	Argenteuil Co.
Laurin, Alfred	R. R. I., Ste. Rose de Lima	East Templeton
Martin, A. G.	236 Besserer St., Ottawa	Hull and Wakefield Tps.
McGlashan, R. J.	190 Montcalm St., Hull	Hull Dist.
McGlashan, Wm.	R. R. I., Wilson's Corners	Wakefield (East Tp.)
Morlot, Chas.	Low	Low Tp.
Tremblay, André	St. Pierre de Wakefield	Wright Co.
Trudeau, Wm.	Old Chelsea	Hull (East) Tp.
Toutloff, Frank (x)	Gatineau Point	Templeton
Wilson, S., Estate of	Cascades	Ladysmith
<u>ONTARIO -</u>		
Bennett, H. V.	Perth	Perth Dist.
30 Island Lake Mica Co.	Verona	Frontenac and Lanark Co's
Kent Brothers.	114 Gore St., Kingston	Frontenac Co.
Lee, W. W.	Bedford Mills	Buck Lake
Loughborough Mining Co. Ltd.	Sydenham	Sydenham
Martin, A. G.	236 Besserer St., Ottawa	Ottawa
<u>BRITISH COLUMBIA -</u>		
Ray, Phillip M. (x)	Prince Rupert	Baker Inlet
(x) Active, but not producing.	(a) Operates grinding plant.	





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