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THE ABRASIVES INDUSTRY IN CANADA, 1930.

The abrasives industry in Canada includes two main divisions:- (1) The Natural Abrasives Industry, covering the production of natural abrasives such as grindstones, pulpstones and scythestones, corundum, diatomite, volcanic dust, etc., and (2) The Artificial Abrasives and Abrasive Products Industry, which covers the manufacture of silicon carbide, fused alumina, abrasive wheels, abrasive paper, etc.

(1) NATURAL ABRASIVES.

Corundum.- Corundum crystals are found in an area embracing several townships in Renfrew and Hastings counties in the province of Ontario. The industry made its appearance there in 1900 and production reached a maximum in 1906. Corundum mining practically ceased with the perfection and production of artificial abrasives by the electric furnace. In 1921 grain corundum amounting to 403 tons valued at \$55,965 was exported to the United States; since that date no shipments of corundum have been reported.

Diatomite.- Shipments of diatomite in 1930 were made from deposits at East New Annan, Nova Scotia; Muskoka Falls, Ontario, and Quesnel, British Columbia. The total production for the year was 554 tons valued at \$13,247 as compared with 429 tons worth \$10,330 in 1929.

Its three major uses are: as a heat and sound insulator; as a filter medium, and as an admixture in concrete. (1) Its use in concrete construction has, in the past few years, made proportionately greater strides than any of its other applications.

Garnets.— Operations in the garnet industry in Canada during 1930 consisted of development work on a deposit in the Abitibi district of the province of Quebec.

Grinding Pebbles.- No shipments from Canadian deposits of grinding pebbles have been reported since 1926; during that year 64 tons were produced. This tonnage was shipped from deposits on the shore of Lake Superior, near Jackfish, Ontario. (2) Artificially rounded pebbles are now produced in Minnesota from massive flint.

- (1) The Mineral Industry, 1929 - page 210.  
(2) The Mineral Industry, 1929 - page 7.

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Grindstones, Pulpstones and Scythestones.- The production of grindstones, pulpstones and scythestones from Canadian quarries during 1930 amounted to 830 tons valued at \$62,021; in the preceding year shipments totalled 1,947 tons worth \$106,354. Grindstones were produced in Nova Scotia and New Brunswick; pulpstones in New Brunswick and British Columbia, and scythestones in New Brunswick. <sup>(3)</sup> The use of artificial pulpstones constructed of bonded silicon carbide segments is gradually increasing.

Volcanic Dust.- Volcanic dust is used for purposes similar to ground pumice, particularly in the manufacture of cleansers and scouring powders and in some instances as a substitute for fullers' earth in the refining of hard oils and fats.

The extensive beds of volcanic dust near Waldeck, Saskatchewan, were first discovered in 1918. Shipments have been made from these deposits annually for the past seven years. In 1930 production in Canada came entirely from these deposits and amounted to 242 tons valued at \$4,840 as compared with 300 tons at \$6,000 shipped in the preceding year.

At Williams Lake in British Columbia a small tonnage of volcanic ash rock was mined during the year.

The ten firms operating in the natural abrasives industry in Canada during 1930 reported a capital investment of \$345,302; salaried employees and wage-earners totalled 45 persons with combined earnings amounting to \$42,867. Fuel and electricity costs were \$4,305.

(3) The Mineral Industry, 1929.- page 6.

PRODUCTION OF NATURAL ABRASIVES IN CANADA, 1930.

Province	Diatomite		Grindstones, Pulpstones and Scythestones		Volcanic dust	
	Tons	\$	Tons	\$	Tons	\$
Nova Scotia.....	398	7,960	6	110	...	...
New Brunswick....	...	...	495	35,689	...	...
Ontario.....	10	140	...	...	...	...
Saskatchewan.....	...	...	...	...	242	4,840
British Columbia..	146	5,147	329	26,222	...	...
CANADA.....	554	13,247	830	62,021	242	4,840

PRINCIPAL STATISTICS OF THE NATURAL ABRASIVES INDUSTRY IN CANADA, 1929 and 1930.

	1929	1930
Number of firms.....	9	10
Capital employed.....\$	790,791	345,302
Number of employees:- On salary.....	18	11
On wages.....	136	34
Total.....	154	45
Salaries and wages:- Salaries.....\$	38,648	18,090
Wages.....\$	114,157	24,777
Total.....\$	152,805	42,867
Cost of fuel and electricity.....\$	18,942	4,305
Selling value of products.....\$	122,684	80,108





(2) THE ARTIFICIAL ABRASIVES AND ABRASIVE PRODUCTS INDUSTRY.

Manufactures of artificial abrasives and abrasive products in Canada were valued at \$6,450,351 in 1930. This output was 28 per cent less than the corresponding selling value of \$8,961,951 in 1929. Among the principal products made in this industry were: 42,894 tons of fused alumina at \$3,376,908 and 22,778 tons of silicon carbide at \$2,111,476, abrasive wheels worth \$546,276, and other commodities such as ferro-silicon, abrasive cloth and paper, pulpstones and sharpening stones, files and magnesia.

For 1930, reports were received from 13 plants of which 12 were in Ontario and 1 in Quebec. Capital employed by these firms amounted to \$6,251,425 distributed as follows: cost of lands, buildings, equipment, etc., \$3,331,763; supplies and stock on hand, \$2,114,862; cash, trading and operating accounts and bills receivable, \$804,800. The average number of employees was 799 and salaries and wages for the year totalled \$1,156,641. Materials used in manufacturing cost \$2,313,310 at the works, and the value added by manufacturing processes was \$4,137,041.

PRINCIPAL STATISTICS OF THE ARTIFICIAL ABRASIVES AND ABRASIVE PRODUCTS INDUSTRY IN CANADA, 1929 and 1930.

	1929	1930
Number of firms.....	12	13
Capital employed.....\$	6,685,533	6,251,425
Number of employees:- On salary.....	101	106
On wages.....	727	693
Total.....	828	799
Salaries and Wages:- Salaries.....\$	239,725	244,054
Wages.....\$	1,031,173	912,587
Total.....\$	1,270,898	1,156,641
Cost of fuel and electricity.....\$	873,068	815,901
Cost of materials used.....\$	2,905,928	2,313,310
Selling value of products.....\$	8,961,951	6,450,351

MATERIALS USED IN THE ARTIFICIAL ABRASIVES AND ABRASIVE PRODUCTS INDUSTRY IN CANADA, 1929 and 1930.

Materials	Unit of measure	1 9 2 9		1 9 3 0	
		Quantity	Cost at works	Quantity	Cost at works
Aluminum oxide.....	ton.	5,128	206,698	2,683	86,726
Anthracite coal (not for fuel).....	ton	6,310	36,029	7,400	42,121
Bauxite.....	ton	6,540	1,142,831	46,177	930,139
Coke (not for fuel).....	ton	42,238	362,723	25,346	310,785
Electrodes.....	ton	1,163	158,898	884	124,478
Feldspar.....	ton	...	...	19	370
Iron.....	ton	9,896	112,366	6,887	76,903
Salt.....	ton	367	3,061	250	1,915
Sawdust.....	ton	7,439	34,017	8,626	33,028
Silica sand.....	ton	43,243	211,196	45,595	223,499
Artificial abrasive grains.....	ton	4,070	190,529	2,959	126,144
Natural abrasive grains.....	ton	163	15,018	102	8,482
Bonding and bushing materials.....	-	...	37,730	...	28,619
Cotton cloth.....	sq.yd.	139,658	20,329	90,777	13,091
Kraft paper.....	ton	35	4,409	23	2,867
Containers, boxes, packages, etc.....	-	...	12,398	...	9,961
All other materials.....	-	...	331,906	...	294,162
TOTAL.....	-	...	2,905,928	...	2,313,310

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PRODUCTS OF THE ARTIFICIAL ABRASIVES AND ABRASIVE PRODUCTS INDUSTRY IN CANADA, 1929 and 1930.

Products	Unit of measure	1 9 2 9		1 9 3 0	
		Quantity	Selling value at works	Quantity	Selling value at works
Crude silicon carbide.....ton		21,592	2,577,033	22,778	2,111,476
Fused alumina.....ton		53,857	4,974,789	42,894	3,376,908
Abrasive wheels.....-		...	319,884	...	546,276
Other products (x).....-		...	590,245	...	415,691
TOTAL.....-		...	8,961,951	...	6,450,351

(x) Includes ferrosilicon, abrasive cloth, abrasive paper, firesand, sharpening stones, files, pulpstones and magnesite.

(3) IMPORTS AND EXPORTS OF ABRASIVES.

Imports of abrasives and abrasive products into Canada during 1930 were valued at \$2,694,494, a decrease of 40.9 per cent from the 1929 total of \$4,552,160. Diamond dust or bort and black diamonds accounted for 53.4 per cent of the total imports of abrasives; the United States supplied 92.6 per cent of these diamonds. Importations of grindstones were valued at \$241,570; these came mainly from the United States although minor shipments were received from the United Kingdom. Sand paper and other abrasive paper or cloth imported into Canada reached a value of \$342,771, a decline of 31.3 per cent below the imports in 1929.

Exports of abrasives in 1930 declined 26 per cent to a total of \$2,899,424. Artificial abrasives, crude, including carborundum, made up 98 per cent of the total exports.

IMPORTS INTO CANADA AND EXPORTS OF ABRASIVES IN 1930.

	Quantity	Value
		\$
<u>IMPORTS -</u>		
Abrasives -		
Artificial abrasives in bulk, crushed or ground, when imported for use in the manufacture of abrasive wheels and polishing composition.....	...	205,042
Carborundum wheels or stones not further manufactured than moulded and burned.....	...	57,731
Diamond dust or bort, and black diamonds for borers.....	...	1,440,871
Emery in bulk, crushed or ground.....	...	37,353
Grinding wheels, manufactured by the bonding together of either natural or artificial abrasives.....	...	150,503
Grinding stones or blocks manufactured by the bonding together of either natural or artificial abrasives.....	...	127,795
Grindstones, not mounted, and not less than 36 inches in diameter.....	...	229,436
Grindstones, n.o.p.....	...	12,134
Pumice and pumice stone, lava and calcareous tufa, not further manufactured than ground.....	...	36,089
Sand paper, glass, flint and emery paper or emery cloth.....	...	342,771
Iron, sand or globules, or iron shot, and dry patty, adapted for polishing glass or granite or for sawing stone.....	...	41,758
Burrstones in blocks, rough or unmanufactured, not bound up or prepared for binding into millstones.....No.	21	1,007
Diatomaceous earth or infusorial earth (kieselguhr), ground or unground.....Cwt.	6,582	12,004
TOTAL.....-	...	2,694,494
<u>EXPORTS -</u>		
Grindstones, manufactured.....	...	11,674
Stone for the manufacture of grindstones, rough.....tons	...	...
Abrasives -		
Natural, n.o.p., in ore or bulk, crushed or ground(x).....cwt.	7,455	8,972
Artificial, crude, including carborundum.....cwt.	1,128,775	2,842,289
Artificial, made up into wheels, stones, etc.....	...	36,489
TOTAL.....	...	2,899,424

(x) including infusorial earth, rotten stone, tripoli, etc.

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