

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

Manufactures of the
NON-FERROUS METALS
IN CANADA
1925

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F. A. ACLAND
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY

NOTES ON STATISTICS OF PRODUCTION

In the collection of production data, the Dominion Bureau of Statistics makes a division between primary and secondary production. In the first-named class, there are separate sections for the collection of statistics on (a) **Agricultural Products**, (b) **Furs**, (c) **Fish**, (d) **Forest Products**, (e) **Mineral Products**. In the second are included (a) **Manufacturing**, and (b) **Construction**.

The scheme of classification used for the collection of data on the manufacturing industries of Canada, provides for a grouping of producing concerns according to the principal component material of the major products made. For example, the leather goods industry is classified under "Animal Products"; the pulp and paper industry, under "Wood and Paper," etc.

In order that students of the Bureau reports on manufactures may have a true conception of the plan followed, an outline of the scheme of classification in use is given below:

MANUFACTURERS OF:—

- (1) **Vegetable Products**, including—Coffee and Spices; Cocoa and Chocolate; Preserved and Canned Products; Pickles, Vinegar and Cider; Flour and Cereals; Bread and other Bakery Products; Macaroni and Vermicelli; Distilled and Brewed Liquors and Wines; Rubber Products; Starch and Glucose; Sugar; Tobacco Products; Linseed Oil and Oil Cake.
- (2) **Animal Products**, including—Fish and Fish Products; Dairy Factory Products; Meat and Meat Products; Leather and Leather Products; Furs and Fur Products.
- (3) **Textiles and Textile Products**, including—Cotton Textiles (Cloth, Yarn, Thread and Waste); Woollen Textiles (Cloth, Yarn, Blankets, Felt and Waste); Silk Products; Factory-Made Clothing; Carpets, Rugs and Mats; Cordage, Rope and Twine.
- (4) **Wood and Paper**, including—Pulp and Paper Mill Products; Paper Goods; Printing, Publishing and Lithographing; Saw and Planing Mill Products; Furniture; Carriages, Wagons and Sleighs; Wooden Containers; Woodenware; Turned Wood Products; and the Output of Similar Wood-Using Industries.
- (5) **Iron and Steel and their Products**, including Pig Iron and Ferro-Alloys; Steel and Rolled Products; Castings and Forgings; Boilers, Tanks and Engines; Agricultural Implements; Machinery; Automobiles; Auto Accessories; Bicycles; Railway Rolling Stock; Wire and Wire Goods; Sheet Metal Products; Hardware and Tools; Miscellaneous Iron and Steel Products.
- (6) **Manufactures of Non-Ferrous Metal Products**, including—Aluminium Products; Brass and Copper Products; Lead, Tin and Zinc Products; Precious Metal Products; Electrical Apparatus and Supplies; Miscellaneous Non-Ferrous Metal Products.
- (7) **Manufactures of Non-Metallic Mineral Products**, including—Aerated Waters; Asbestos and Allied Products; Cement Products and Sand-Lime Brick; Coke and By-Products; Illuminating and Fuel Gas; Glass (blown, cut, ornamental, etc.); Products from Imported Clay; Petroleum Products; Monumental and Ornamental Stone; Miscellaneous Manufactured Non-Metallic Mineral Products, including (a) Artificial Abrasives, (b) Abrasive Products, (c) Artificial Graphite and Electrodes, (d) Gypsum Products, (e) Mica Trimmings.
- (8) **Chemicals and Allied Products**, including—Coal Tar and its Products; Acids, Alkalies, Salts and Compressed Gases; Explosives, Ammunition, Fireworks and Matches; Fertilizers; Medicinal and Pharmaceutical Preparations; Paints, Pigments and Varnishes; Soaps, Washing Compounds, and Toilet Preparations; Inks, Dyes, and Colours; Wood Distillates and Extracts; Miscellaneous Chemical Products.
- (9) **Miscellaneous Products**, including—Brooms and Brushes; Electric Light and Power; Musical Instruments, etc.

Statistics of manufactures are also classified according to the **use or purpose** of the end products as follows:

- (1) **Food**, including—Breadstuffs; Fish; Nuts, Fruits and Vegetables; Meats; Milk Products; Oils and Fats; Sugar; Infusions; Miscellaneous.
- (2) **Drink and Tobacco**, including—Beverages, alcoholic; Beverages, non-alcoholic; Tobacco.
- (3) **Clothing**, including—Boots and Shoes; Fur Goods; Garments and Personal Furnishings; Gloves and Mitts; Hats and Caps; Knitted Goods; Waterproofs; Miscellaneous.
- (4) **Personal Utilities**, including—Jewellery and Time Pieces; Recreational Supplies; Personal Utilities, n.e.s.
- (5) **House Furnishings**.
- (6) **Books and Stationery**.
- (7) **Vehicles and Vessels**.
- (8) **Producers' Materials**, including—Farm Materials; Manufacturers' Materials; Building Materials; General Materials.
- (9) **Industrial Equipment**, including—Farming Equipment; Manufacturing Equipment; Trading Equipment; Service Equipment; Light, Heat and Power Equipment; General Equipment.
- (10) **Miscellaneous**.

PREFACE

Including the smelting of the non-ferrous metals from their ores and the manufacture of articles of commerce made from aluminium, brass, copper, lead, tin, zinc or the precious metals, the industrial concerns classified as manufacturers of the non-ferrous metals in Canada, numbered 378 in 1925 as against 350 in the preceding year and the output value of their products reached \$159,770,026 as against \$135,378,181 in 1924, thus indicating that marked progress was made in this industry in 1925.

Data on the various phases of industrial activity in this group are given in the present report which in style and contents conforms with previous reports on this subject. Information as to the number of plants, capital investment, employment, salaries and wages, details as to the various materials used and their cost, and itemized lists of products, quantity and value, are given in various tables throughout the report, a separate chapter being devoted to each principal branch of the industry under review.

In addition to the statistical matter, there is a list of the firms reporting, classified by industries, showing the name, head office address and location of each plant. An alphabetical list of the products made in the various industries coming within the scope of the report has been prepared so that the total output of a given commodity may be readily found. A new feature in the report is a similar alphabetical list of the materials used in all the industries reported.

On the next preceding page will be found a description of the Bureau's classification of industries, which shows the place in the general scheme held by the industries under review in the report.

Co-operation on the part of the operators, has done much to facilitate the work of the Bureau in the preparation of this report. To all who have contributed information or advice, the Bureau extends its cordial thanks.

Preparation of the present report has been carried out by Mr. H. McLeod, B.Sc., under the direction of Mr. S. J. Cook, B.A., A.I.C., F.C.I.C., Chief of the Mining, Metallurgical and Chemical Branch of the Bureau.

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DOMINION BUREAU OF STATISTICS,
OTTAWA. April 30, 1927.

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TABLE 1.—SUMMARY STATISTICS RELATING TO THE MANUFACTURES OF THE
NON-FERROUS METALS IN CANADA, 1921-1925

Year	Number of plants	Capital employed \$	Number of employees	Salaries and wages \$	Cost of materials \$	Selling value of products \$	Value added by manu- facturing \$
ALUMINIUM AND ALUMINIUM WARE							
1921.....	8	8,131,088	481	609,170	1,701,432	3,633,616	1,929,184
1922.....	9	7,632,722	707	617,864	1,997,438	3,851,925	1,854,437
1923.....	11	8,094,806	1,007	1,196,287	3,192,316	7,017,830	3,825,284
1924.....	11	8,936,025	1,093	1,362,771	3,454,116	7,709,822	4,246,706
1925.....	12	9,191,213	1,169	1,460,919	3,088,761	9,137,365	5,448,544
BRASS AND COPPER PRODUCTS							
1921.....	81	18,122,034	3,134	3,844,065	4,184,674	10,477,206	6,292,632
1922.....	83	17,608,876	3,457	4,079,825	5,106,224	12,253,691	7,147,467
1923.....	81	20,322,808	4,007	4,773,528a	7,548,898	16,793,565	9,244,697
1924.....	81	18,501,413	3,747	4,691,293	7,889,367	15,187,826	7,598,459
1925.....	91	20,568,838	4,032	4,985,645	10,147,373	19,155,309	9,007,936
LEAD, TIN AND ZINC PRODUCTS							
1921.....	19	3,180,149	501	682,562	1,654,642	2,886,415	1,231,773
1922.....	19	3,213,867	534	728,502	2,018,431	3,118,445	1,070,014
1923.....	20	1,749,383	193	246,528	1,556,716	2,181,273	624,557
1924.....	20	3,229,833	480	557,476	2,404,827	3,363,910	949,083
1925.....	22	3,782,120	529	619,973	3,130,257	4,103,732	973,475
PRECIOUS METAL PRODUCTS							
1921.....	118	10,371,208	3,021	3,781,026	4,206,957	9,941,635	5,734,678
1922.....	97	10,653,458	2,725	3,464,613	3,926,116	9,815,697	5,889,591
1923.....	97	9,760,071	2,613	3,572,255b	3,959,180	10,072,672	6,122,486
1924.....	101	10,449,218	2,473	3,235,981	3,941,706	9,449,281	5,607,578
1925.....	108	10,130,772	2,556	3,346,867	3,991,106	9,584,773	5,590,667
ELECTRICAL APPARATUS AND SUPPLIES							
1921.....	100	63,609,530	10,640	13,555,712	19,438,688	45,093,591	25,654,903
1922.....	101	62,436,282	10,630	12,162,607	17,546,839	41,208,368	23,661,529
1923.....	104	65,977,942	13,268	14,991,550	26,257,361	51,360,400	25,101,039
1924.....	109	72,304,204	13,670	16,089,492	24,370,996	56,490,465	32,119,409
1925.....	122	75,375,623	14,112	16,472,357	25,434,936	60,158,837	34,724,001
MISCELLANEOUS NON-FERROUS METAL PRODUCTS							
1921.....	18	665,481	162	219,859	250,596	557,420	306,824
1922.....	16	663,070	169	198,218	236,797	607,567	370,770
1923.....	16	739,457	196	254,856	269,557	773,556	503,009
1924.....	16	853,248	202	268,823	322,001	741,066	410,065
1925.....	17	919,733	233	313,145	346,518	909,277	652,789
Total for All Industries Listed Above							
1921.....	311	104,079,490	17,939	22,697,784	31,449,989	72,589,883	41,149,894
1922.....	325	102,298,275	18,222	21,451,629	30,861,895	70,855,693	39,993,798
1923.....	343	106,614,167	21,409	25,647,001	42,775,264	88,193,326	45,121,062
1924.....	341	114,354,971	21,679	26,148,839	42,383,913	93,223,373	50,840,469
1925.....	372	119,908,299	22,611	27,144,905	46,738,851	103,136,233	56,397,382

NOTE.—The foregoing list of industries includes all those shown in the Bureau classification under the heading "Manufactures of Non-Ferrous Metals." But there are several smelters classified by the Bureau as minor industries which are ordinarily regarded as manufacturing enterprises. These industries have been described in the *Annual Reports of the Mineral Production of Canada* to which the reader is referred for detailed information, but for convenience of reference and for the making of a grand total the principal statistics relating to them have been repeated on the following page

TABLE 1.—SUMMARY STATISTICS RELATING TO THE MANUFACTURES OF THE NON-FERROUS METALS IN CANADA, 1921-1925—Concluded

Year	Number of plants	Capital employed \$	Number of employees	Salaries and wages \$	Cost of materials \$	Selling value of products \$	Value added by manu- facturing \$
NON-FERROUS METAL SMELTING							
1921.....	14	82,206,253	3,682	4,406,957	8,400,000	23,732,277	15,332,277
1922.....	13	63,160,551	3,384	5,042,787	7,172,000	23,637,205	16,465,205
1923.....	10	64,290,931	4,068	7,930,236	14,830,085	35,254,048	20,414,963
1924.....	9	60,337,664	5,521	8,136,251	20,394,535	42,154,808	21,760,273
1925.....	6	61,691,928	5,104	8,568,907	27,329,409	56,633,793	29,304,384
GRAND TOTAL							
1921.....	358	186,285,743	21,621	27,099,744	39,839,989	96,322,160	56,482,171
1922.....	338	163,368,826	21,606	26,494,416	38,033,895	94,492,898	56,459,003
1923.....	343	170,935,398	26,377	32,962,240	57,611,319	123,453,374	65,839,025
1924.....	350	180,692,635	27,191	34,255,090	62,777,548	135,378,181	72,600,632
1925.....	378	181,600,227	27,735	35,713,903	74,068,260	159,770,026	85,704,766

* Value of shipments from metallurgical works less cost of ores, concentrates, matte, etc., treated.

† Estimated cost of ores treated.

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MANUFACTURES OF THE NON-FERROUS METALS IN CANADA, 1925

CHAPTER I

GENERAL REVIEW

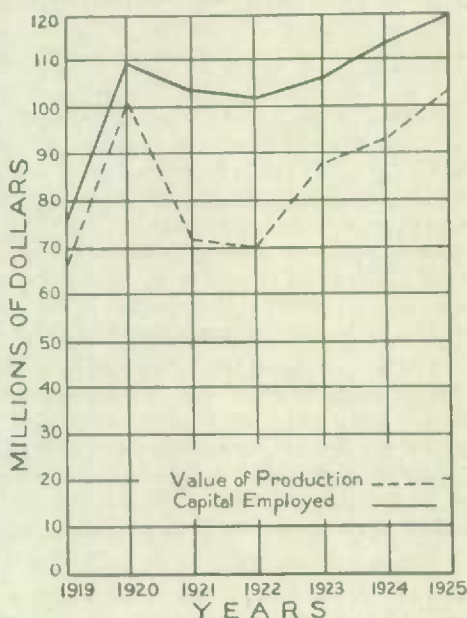
(a) Summary

Manufactures of the non-ferrous metals include all those industries, which use non-ferrous metals chiefly as their materials in manufacturing. Included in this group are such industries as the manufacture of aluminium, and aluminium ware; brass and copper foundries; the white metal industries using lead, tin and zinc chiefly; concerns manufacturing jewellery, silverware and other products in which precious metals form the chief component of value; producers of electrical apparatus and supplies who use large quantities of aluminium, brass, copper, lead, zinc and nickel; and a miscellaneous group including other relatively small firms who manufacture lamps and lanterns, screens, non-ferrous metal novelties, etc.

As thus defined, manufactures of non-ferrous metals in Canada in 1925 amounted in value to \$103,136,233 an increase of 10 million dollars over 1924 and 2 million dollars above the production value of 1920 when the previous high record for this group of industries was attained. Plants in operation in 1925 numbered 372 as compared with 341 in the preceding year; capital employed totalled \$119,908,299 as against \$114,354,971 in 1924; the average number of employees was 22,631 as against 21,670 and salaries and wages totalled \$27,144,906, an increase of more than a million dollars over 1924.

Production of aluminium metal and aluminium ware amounted in value to \$9,137,305, an increase of 1.4 million dollars over 1924; the 12 firms in this industry represented a capital investment of over 9 million dollars and gave employment to 1,169 persons throughout the year. Brass and copper products such as castings, bars, sheets, rods, valves, etc., reached a total value of \$19,155,309 as compared with a value of \$15,487,826 in the preceding year; 91 plants operated in this industry in 1925 and employees numbered 4,032. The lead, tin and zinc products industry with 22 plants employed a capital of 3.8 million dollars and reported a production worth \$4,103,732, an increase of more than three-quarters of a million dollars over 1924. Precious metal products including jewellery, silverware, dental gold, etc., were valued at \$9,581,773; the 108 establishments gave employment to 2,556 persons and

MANUFACTURES OF NON-FERROUS METAL PRODUCTS



paid out \$3,346,867 in wages and salaries. Electrical apparatus and supplies at \$60,158,837 showed a new high output value for the industry and was 3.6 million dollars above the figure for 1924. Miscellaneous non-ferrous metal goods including lamps, lanterns, weather stripping, etc., reached a total value of \$999,277, as compared with \$741,066 in the preceding year.

Throughout 1925 the prices of non-ferrous metals and their products showed an upward trend. In January, the index, based on average prices of 1913 as 100, stood at 107.7, declined to 101.5 in April, the low point of the year, and then rose steadily to 108.0 in November and stood at 106.0 in December. For the whole year the average was 105.6 as compared with 96.3 in 1924.

Using the index number of non-ferrous metals and their products as a factor, it is possible to make an interesting compilation which does away with this variation in prices from year to year and reduces the outputs to a standard basis of comparison. Taking the average prices prevailing in 1913 as 100, the index of prices for non-ferrous metal products, computed by the Dominion Bureau of Statistics and weighted according to the volume of trade in the 15 commodities listed, showed an average of 137.7 in 1920; dropped to 98.6 in 1921; rose slightly to an average of 98.9 in 1922; declined to 96.8 in 1923; remained steady at 96.3 for 1924; and stood at 105.6 in 1925. By applying these index numbers to the actual production values for each of the six years mentioned, it is possible to obtain a set of figures which more nearly represents the growth in quantity production, than do the gross selling values of the products made in each year. For example, the aggregate production in 1920 was valued at \$101,289,935; the index number of non-ferrous prices for the year was 137.7, in comparison with 100 for 1913 prices; the application of this factor to the gross value of production mentioned above shows, that the output of non-ferrous metal products in Canada during 1920 computed on the basis of 1913 prices was actually worth \$73,558,000. Computed on the basis of 1913 prices the production values for each of the five succeeding years were: 1921—\$73,621,000; 1922—\$71,644,000; 1923—\$91,115,000; 1924—\$96,805,000 and 1925—\$108,912,000. These figures give a better indication of the growth in quantity production of non-ferrous metals and their products in Canada than the actual market values of the output show, and make it apparent that the former peak in production values reached in 1920 was very largely due to enhanced commodity prices. On this basis the outputs for 1923, 1924 and 1925 each were in excess of the 1920 production, and the volume of production in 1925 was the highest on record for this group of industries.

In 1925 there were 372 establishments in Canada manufacturing products from metals other than iron and steel. These included 12 plants producing aluminium and aluminium ware; 91 plants fabricating brass and copper products; 22 plants making white metal products; 108 plants manufacturing precious metal products; 122 plants making electrical goods; and 17 plants making miscellaneous articles from non-ferrous metals. Compared with the previous year there was a net gain of 31 plants of which 10 were in the brass and copper group, 13 in the electrical apparatus industry, 4 in the precious metal products industry, 2 manufacturing white metal alloys and 1 in each of the aluminium and miscellaneous non-ferrous industries. There were 10 more plants in Ontario than in the previous year, 16 more in Quebec, 3 more in Manitoba, and a gain of 1 in each of the provinces of Saskatchewan and New Brunswick.

Capital employed by these concerns, as represented by the value of lands, buildings, machinery, stocks on hand, cash and collectable accounts, was \$119,908,299, or about 5 per cent over the total of \$114,354,971 reported for 1924. The electrical apparatus and supplies industry showed the greatest capital investment at \$75,375,623; the brass and copper group came next with \$20,508,838; precious metal products accounted for \$10,130,772; the aluminium industry for \$9,191,213; lead, tin and zinc products, \$3,782,120; and a group of firms manufacturing miscellaneous non-ferrous metal products accounted for the balance.

These industries afforded employment to 22,631 persons and paid \$27,144,906 in wages and salaries. As the manufacture of non-ferrous metals is centred in Ontario and Quebec, over 26 million dollars of the total salaries and wages paid, was distributed to workers in these two provinces. The trend of the industry throughout the year was reflected in the average number of wage-earners employed each month. From 17,816 in January, the number of wage-earners declined to 17,364 in February and dropped slightly during the succeeding months to 17,140 in July and then gradually increased again to reach a peak of 19,309 in November. The average for the year stood at 17,933 as against 17,213 in 1924.

Manufacturing of non-ferrous metal products is centred in Ontario and Quebec. In Ontario, where there were 250 plants operating, products aggregated \$67,637,048 in value, and in Quebec the 77 plants produced commodities valued at \$32,469,871. In Manitoba the 15 plants in operation had an output worth \$1,526,443; in British Columbia, there were 16 plants with production valued at \$588,942; in New Brunswick, 4 plants had an output worth \$503,517; in Alberta 7 plants produced \$373,949 worth of non-ferrous metal products; in Nova Scotia there were only 2 producing plants and in Saskatchewan only 1 establishment, classified in this industrial group.

Fuel and electricity used by the firms manufacturing non-ferrous metal products during 1925 cost \$2,418,841. Of this amount the electrical apparatus and supplies group expended \$953,478 or 40 per cent, while the brass and copper group paid out on this amount \$517,887 or 22 per cent of the total. Expenditure for electric power in these industries amounted to \$1,323,104 and the cost of bituminous coal used amounted to \$546,949.

Imports into Canada of non-ferrous metal goods during the calendar year, 1925, reached a total value of \$46,677,309 or about 5 million dollars above the corresponding figure for 1924. United States supplied \$38,035,443 worth, or 81 per cent of Canada's imports of this class. Exports amounted in value to \$103,709,496 as compared with \$84,780,015 in 1924. Shipments to the United States totalled \$64,872,593, and \$17,770,420 worth went to the United Kingdom. Detailed statistics on imports and exports are given in Tables 18 and 19.

The group of industries fabricating products from the non-ferrous metals, represents a secondary development in the metallurgical field; the smelting of ores and the subsequent refining of the metals constitute the primary production. This distinction is made in statistical practice, it having been found convenient to so divide the various enterprises, contributing to production. The manufacture of non-ferrous metal products bears a relation to the primary metallurgical industry, which in turn is inseparable from the metal mining industry. The recovery of metals from their ores, is dealt with in the *Annual Reports on the Mineral Production of Canada*, but for the convenience of the reader interested in this phase of the metal industry, abstracts from that report have been included herein; for more detailed information reference should be made to the publication mentioned above.

Production in Primary Metallurgical Works.—Products of the primary metallurgical plants of Canada sold during 1925 were valued at \$56,633,793, an increase of approximately 14 million dollars over the total for the previous year. The primary metals turned out by these plants were gold, silver, copper, lead, zinc, nickel and cobalt. In addition to the foregoing, metals in the semi-refined state were exported for further treatment and consisted of blister and converter copper, nickel-copper matte, speiss residues, lead-silver-bismuth bullion, and precious metal precipitates, containing quantities of gold, silver, platinum, palladium, iridium, etc. Nickel in the form of oxide and refined arsenic As_2O_3 were also sold directly for use in other manufactures. Refined gold and silver were produced by the Royal Mint at Ottawa, chiefly from the treatment of crude bullion from Ontario gold mines. A small portion of the Mint production was also derived from imported crude gold bullion and from scrap. Statistics on the production of the Royal Mint have not been included with the records of the metallurgical plants, but have been shown in a separate table. The table shown below gives in some detail the quantities of the various materials sold during 1925 by primary metallurgical plants in Canada. In addition, large quantities of ore containing copper, lead and silver, were shipped to United States smelters for treatment, and some also to European smelters; the data given in the following table show only sales from Canadian smelting and refining plants.

Table 2.—Products Sold by the Primary Metallurgical Works in Canada, 1925

Industry and material	Unit	Quantity	Value
NICKEL-COPPER SMELTERS AND REFINERIES—			
Matte.....	ton	32,397	\$ 7,884,661
Nickel, nickel oxide and copper.....			12,654,759
Residues containing gold, silver, platinum, palladium, etc.			1,852,105
Total.....			22,391,525
SILVER-COBALT SMELTERS AND REFINERIES—			
Silver bullion (fine).....	oz.	2,813,071	1,985,755
White arsenic (As ² O ₃).....	lb.	2,005,252	108,789
Cobalt-metal, oxides, salts, etc. (metal content).....	lb.	823,019	2,114,835
Nickel-metal, oxides, salts, etc. (metal content).....	lb.	441,326	91,462
Copper sulphate.....	lb.	13,834	692
Speiss residues.....	ton	541	211,991
Silver-lead-bismuth bullion.....	lb.	98,714	103,638
Clean up material.....	ton	29	32,205
Total.....			4,649,367
COPPER-LEAD-ZINC SMELTERS—			
Blister copper.....	lb.	30,677,523	4,702,349
Refined copper.....			
Copper sulphate.....			
Gold.....	fine oz.	18,441	379,394
Silver.....	fine oz.	4,068,072	2,810,253
Lead and zinc and lead bullion and zinc residues.....			21,700,905
Total.....			29,592,904
Total Sales.....			56,633,793

ROYAL MINT PRODUCTION, 1925

Gold.....	120,570.00 fine ounces
Silver.....	23,045.30 fine ounces
Total value.....	\$ 2,508,165.25

During the period there were 6 companies in Canada operating in all 7 separate plants; names and locations, with the principal products, were as follows:

BRITISH COLUMBIA

The Consolidated Mining and Smelting Company of Canada, Limited, Trail, B.C., operating many mines in addition to a large smelter and refinery and producing gold, silver, lead, copper, copper sulphate and zinc.

The Granby Consolidated Mining, Smelting and Power Company, Limited, Anyox, B.C., operating mines and a copper smelter producing copper, gold and silver.

ONTARIO

The International Nickel Company of Canada, Limited, Copper Cliff, Ontario, operating several mines, a smelter near Copper Cliff and a refinery at Port Colborne, Ontario, producing nickel metal, nickel oxide, and copper.

The Mond Nickel Company, Limited, operating mines and a smelter at Coniston, Ontario, and shipping the matte to Wales for refining.

The Deloro Smelting and Refining Company, Limited, operating a smelter at Deloro, Ontario, and treating cobalt ores, concentrates and residues, and producing silver bullion, the metals and oxides of cobalt and nickel, white arsenic, the alloy "stellite" and insecticides such as paris green, lead arsenate and lime arsenate.

The Kingdon, Mining, Smelting and Manufacturing Company, Limited, Galetta, Ontario, operating a mine and a smelter and producing pig lead from galena ores.

The capital invested in the plants operated by these companies amounted to \$61,691,928. Employment was furnished to 5,104 people to whom the salaries and wages paid amounted to \$8,568,997. Cost of fuel and electric power totalled \$5,280,674. Complete records of this phase of Canada's metallurgical industry are contained in the *Annual Reports on the Mineral Production of Canada* issued by the Bureau.

(b) By Industries

Aluminium and Aluminium Ware.—In 1925, aluminium metal was produced in Canada by only 1 firm, the Aluminium Company of Canada, at Shawinigan Falls, Quebec; this company treated imported bauxite ore and produced the refined metal in ingots, bars, wire and other forms. The manufacture of aluminium products, however, such as cooking utensils and other fabricated wares, was carried on in 11 establishments, all of which were located in Ontario. This review covers both the smelting of the ore and the fabrication of aluminium utensils. A large new plant for the smelting of aluminium is now in the course of erection at Arvida, Quebec; the first shipments of manufactured aluminium from this plant were made in the fall of 1926 from ore partly processed at the company's plant at St. Louis.

Production of aluminium and its products in 1925 advanced about 18 per cent to a selling value of \$9,137,305, as compared with \$7,700,822 in 1924. Raw materials cost 7 per cent more at \$3,688,761 and the value added by manufacturing at \$5,448,544 was nearly 30 per cent above the total for the previous year. The value of aluminium kitchenware produced during the year was \$1,056,920.

There was an appreciable increase in employment in the aluminium industry as compared with 1924 and the amount of salaries and wages paid was proportionately greater. An average of 1,059 wage-earners found employment in this industry in 1925, and salaried employees numbered 110 bringing the total for the industry to 1,169 as compared with 1,098 in 1924. Salaries and wages amounted to \$1,406,919.

Fuel and electricity used for heat and power during the year cost \$766,231 of which the expenditure for electricity amounted to \$704,910 or 92 per cent of the total.

Brass and Copper Products.—The brass and copper products group includes all those plants whose principal products in 1925 were made principally of brass or copper, rolled, cast or fabricated. As thus defined, the industry was represented by 91 plants in Canada in 1925 including 58 in Ontario, which is the principal centre of the industry, 20 in Quebec, 7 in British Columbia, 3 in Manitoba and 1 in each of the provinces of Nova Scotia, New Brunswick and Alberta. Returns showed a gain of 5 plants in Ontario, 5 in Quebec, 1 in Manitoba and 1 in British Columbia, while 1 plant in Quebec and 1 in Ontario did not operate during the year.

Capital investment in plant and equipment, together with the cash on hand, bills receivable, etc. amounted to \$20,508,838, or 10 per cent more than in 1924. Nearly 13 million dollars were invested in Ontario plants and 5 million dollars in plants located in Quebec. Alberta, British Columbia, Manitoba and the Maritime Provinces were also substantially represented.

Production from the brass and copper products industry during 1925 was valued at \$19,155,309, an increase of 23 per cent over the value for 1924, and the cost of materials at \$10,147,373 was 29 per cent above that of the previous year, leaving thus, a value added by manufacturing of \$9,007,926 or 1.4 million dollars above the corresponding value for 1924. Plants in Ontario contributed \$14,035,823 to the total value of the brass and copper products made in Canada in 1925 and the 20 plants in Quebec produced commodities valued at \$3,405,949.

Principal products of this industry included brass water and steam fittings; brass, bronze and copper castings and machinery fittings and plates and sheets, rods and similar commodities.

Lead, Tin and Zinc.—Twenty-two firms in Canada manufactured white metal alloys as major products in 1925, the principal commodities being babbitt metal, lead bars, ingots and pipe, solders, type metals, collapsible tubes, etc. The industry has a capital investment of \$3,782,120 and was represented by 9 firms in Ontario, 7 in Quebec, 3 in British Columbia, 2 in Manitoba, and 1 in New Brunswick.

Products made had a total selling value of \$4,103,732 and the cost of materials was \$3,130,257 leaving \$973,475 as the value added by manufacturing. Production as measured by values showed an increase of 22 per cent in 1925 over the total of \$3,353,910 for 1924.

Manufactures of these non-ferrous metals or in general the white metal trade in Canada, thus made a continued advance during 1925 when the total production surpassed the output of any previous year except 1920, when enhanced prices partially accounted for the high value of production.

Precious Metal Products.—In 1925, the 108 establishments in Canada engaged in the manufacture of commodities from the precious metals and their alloys produced jewellery, clocks,

watches, table cutlery, silver and silverplated ware, dental supplies, etc., reaching a total value of \$9,581,773. These plants represented a capital investment of \$10,130,772 and were distributed as follows: 69 in Ontario; 26 in Quebec; 4 in British Columbia; 2 in Alberta; 4 in Manitoba; 1 in Nova Scotia; 1 in New Brunswick; and 1 in Saskatchewan.

Jewellery was the principal product made and accounted for about one-third of the production in the entire industry; clocks and watches were made in greater quantities than in 1924; and silverware, including electroplated ware, sterling silverware, stainless steel cutlery and similar products was valued at \$2,918,752. As a whole, production reported at \$9,581,773 was slightly above the value of \$9,449,284 reported in the preceding year.

Electrical Apparatus and Supplies.—The electrical equipment and supplies industry showed continued growth during 1925 and reached a record production value of \$60,158,837; the increase may be accounted for partly by the rapid development of the radio business and partly by the increased use of electrical equipment.

This industry includes all establishments primarily engaged in the manufacture of apparatus for use in the generation, transmission and utilization of electrical energy and, in 1925, embraced the operations of 122 concerns located as follows: 91 in Ontario, 19 in Quebec, 5 in Manitoba, 4 in Alberta, 2 in British Columbia and 1 in New Brunswick. Ontario accounted for nearly two-thirds of the entire production in Canada for this industry.

Among the more important items of production were motors and generators, storage batteries and dry cells, incandescent lamps, switchboards, radio apparatus, telephone materials, transformers, vacuum cleaners and electrical fixtures of all kinds. The principal materials used included copper, brass, aluminium, lead, glass, porcelain, insulating materials of all kinds and quantities of iron and steel. In all, the production amounted in value to \$60,158,837 and raw materials cost \$25,434,836 giving a figure of \$34,724,001 as the value added by manufacturing. The industry afforded employment to 14,112 persons throughout the year and paid out \$16,472,357 in salaries and wages.

Miscellaneous Non-Ferrous Metal Products.—The 17 firms included under this heading were those whose products could not be properly classified as belonging to any of the foregoing groups. The principal articles produced were lamps, lanterns and parts, train signals, screens and weather stripping. The market for this class of goods is steady and production in 1925 was valued at \$999,277 as compared with \$741,066 in the previous year.

(c) Provinces

Nova Scotia.—Only 2 establishments in Nova Scotia were engaged in the manufacture of non-ferrous metal products during 1925. One concern manufactured brass and copper products, and the other was classified in the precious metal products group.

New Brunswick.—New Brunswick was represented in the non-ferrous metal products industry by only 4 concerns. One of these plants was a brass foundry; another made lead pipe as the principal product; another produced supplies for the dental business and the fourth made incandescent tungsten lamps. These 4 plants represented a capital investment of \$571,776, afforded employment to 269 persons and had a combined production valued at \$503,517.

Quebec.—Quebec ranked next to Ontario as a producer of non-ferrous metal products. In 1925 there were 77 plants operating as follows: 1 plant smelted bauxite for the production of aluminium ingots and bars; 20 establishments made brass and copper products; 7 produced white metal alloys; 26 were in the precious metal products industry; 19 manufactured electrical supplies, and 4 firms were included in the miscellaneous group. The combined production of these plants reached a value of \$32,469,871 of which the electrical supplies industry contributed \$18,568,118, the brass and copper industry \$3,405,949 and precious metal products \$2,215,944.

Fuel and electricity consumed during the year cost \$1,182,803. Electricity alone cost \$870,653; bituminous coal \$153,674; anthracite coal, \$38,039 and fuel oil, \$52,349.

The non-ferrous metal products industry in Quebec afforded employment to 7,545 persons throughout the year and paid out \$9,389,556 in salaries and wages.

Ontario.—The non-ferrous metal products industry in Canada is centred in Ontario. In 1925 there were 372 plants operating in the Dominion, of which 250 were located in Ontario and of a total production for the industry valued at \$103,136,233, Ontario accounted for \$67,637,048.

By industries, electrical supplies held first place with 91 operating plants, a capital investment of \$53,563,573 and a production valued at \$40,952,860; the brass and copper industry was second with 58 establishments and an output worth \$14,035,823; precious metal products held third place when the 69 plants yielded commodities worth \$7,144,408; and the white metal trade, the aluminium industry and the miscellaneous group followed in the order named.

Including 2,928 salaried employees, the non-ferrous metal products group in Ontario gave employment to 14,422 persons throughout the year, while expenditure in salaries and wages amounted in all to \$16,988,040.

Manitoba.—Manitoba had 3 plants in the brass and copper industry; 2 in the lead, tin and zinc group; 4 in the precious metal industry; 5 making electrical supplies; and 1 in the miscellaneous group. These 15 plants used \$936,851 worth of raw materials in the production of \$1,526,443 worth of non-ferrous metal products and afforded employment to 196 persons throughout the year.

Saskatchewan.—Saskatchewan had 1 plant in this group of industries; it was a small concern in the precious metal products industries.

Alberta.—With 7 plants in the non-ferrous metal products industry, Alberta contributed only \$373,949 to the total non-ferrous metal production in Canada. Employees in plants in this province numbered only 50 and the capital employed amounted to \$727,406.

Alberta was represented by 3 firms producing electrical supplies, 3 making precious metal products, and 1 firm producing brass and copper goods.

British Columbia.—With a total production worth \$588,942, British Columbia ranked fourth among the provinces in the production of non-ferrous metal goods. In all, there were 16 plants in this group; 7 in the brass industry, employed 46 persons and made \$152,882 worth of commodities; 4 in the precious metal group, had a production worth \$92,590; and there were 3 firms in the white metal industry and 2 manufacturing electrical supplies.

(d) Prices

The index number for non-ferrous metals was 105.6 in 1925 as compared with 96.3 in 1924. The rise in prices was practically general.

Copper.—Electrolytic copper averaged 16½c. per pound as compared with 15¼c. in 1924. Copper sheets, base, were 21½c. per pound in 1925 and 19½c. in 1924. Solid bare copper wire rose from 18½c. to 19½c. per pound. The outstanding facts of the copper situation in 1925 were: (1) A production greater than any other peace-time year, but which on account of certain voluntary restrictions upon output, was probably only 90% of capacity. (2) An increased world demand which was sufficient in relation to the supply, to raise prices. (3) A diminution in stocks. Consumption in America continues to be vastly in excess of pre-war figures, while European consumption is about at the same level as in pre-war days. Productive capacity is greater than is required for the present world demands, and this fact has prevented any marked increase in prices.

Lead.—Pig lead prices averaged \$9.11 per cwt in 1925 and \$8.08 in 1924. The year commenced with a price of \$10.25, but at this figure sales fell off; by April it had dropped to \$8.10. During the last half of the year the movement was upward. Lead production is not much greater than in the pre-war year, due to inadequate sources of supply. Demand, on the other hand, is on a larger scale than formerly, consequently prices tend upward. The upward movement is somewhat restricted because of the possibility of substituting other metals, such as copper. Lead pipe averaged \$15.53 per cwt. in 1925 as compared with \$13.91 in 1924.

Zinc.—Zinc spelter, rose from \$8.01 per cwt. in 1924 to \$9.21 in 1925. The consumption of this metal is increasing faster than production, consequently prices tend to strengthen. Zinc sheets were 9½c. per pound in 1924 and 10c. in 1925.

Nickel.—Nickel ingots, 98.5%, rose from 25c. per pound in 1924 to 30c. in 1925, these being prices for contract quantities in Canada. The higher prices are attributed to increased demand, due largely to new uses which have developed for this commodity.

Silver.—The average price for silver was 67c. per fine ounce at the smelters in 1924 and 69½c. in 1925. This price is about the level which prevailed in the last four months of 1924. There were no developments tending to continue the upward movement which occurred after the first half of 1924.

Tin.—Tin ingots, Straits at Toronto were 53½c. in 1924 and 59½c. in 1925, the rise being due to keen world demand, which resulted in reduced stocks toward the end of the year.

Antimony.—The unsettled conditions in China resulted in considerably higher prices for antimony, Chinese 99% rising from 10½c. per pound in 1924 to about 17c. in 1925.

Table 3—Principal Statistics Relative to the Manufactures of Non-Ferrous Metals in Canada, by Industries and by Provinces, 1924

Industry	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Alberta	British Columbia	Canada*
ALUMINIUM AND ALUMINIUM WARE—								
Number of plants.....			1	10				11
Capital employed.....\$								8,936,025
Salaried employees: Male.....								29
Female.....								25
Wage-earners: Male.....								917
Female.....								77
Total employees.....								1,098
Salaries and wages: Salaries.....\$								206,848
Wages.....								1,155,926
Total.....								1,362,774
Cost of fuel and electricity.....\$								291,024
Cost of materials.....								3,451,116
Value of products.....\$								7,700,822
BRASS AND COPPER PRODUCTS—								
Number of plants.....	1	1	16	54	2	1	0	81
Capital employed.....\$			5,725,461	10,926,067			91,679	18,594,143
Salaried employees: Male.....			146	338			8	519
Female.....			23	101				124
Wage-earners: Male.....			604	1,007			31	2,761
Female.....			52	262				312
Total employees.....			830	2,608			39	3,747
Salaries and wages: Salaries.....\$			334,292	811,427			15,140	1,213,077
Wages.....			781,041	2,347,171			39,052	3,392,216
Total.....			1,115,233	3,158,598			54,192	4,601,293
Cost of fuel and electricity.....\$			110,804	301,634			3,357	453,761
Cost of materials.....			1,106,678	5,023,924			56,143	7,889,367
Value of products.....\$			3,161,946	10,835,069			142,166	15,147,829
LEAD, TIN AND ZINC PRODUCTS—								
Number of plants.....		1	6	8	2		3	20
Capital employed.....\$			560,073	2,287,148			145,313	3,229,833
Salaried employees: Male.....			13	55			2	76
Female.....			10	24			3	41
Wage-earners: Male.....			32	286			12	340
Female.....				23				23
Total employees.....			55	388			17	489
Salaries and wages: Salaries.....\$			49,908	127,124			9,815	267,122
Wages.....			34,411	296,897			13,583	354,054
Total.....			84,327	424,021			23,398	567,476
Cost of fuel and electricity.....\$			4,628	68,060			2,149	78,211
Cost of materials.....			587,408	1,531,600			127,498	2,491,827
Value of products.....\$			730,121	2,270,090			176,730	3,353,910
PRECIOUS METAL PRODUCTS—								
Number of plants.....	1	1	23	68	3	3	5	104
Capital employed.....\$			1,524,361	8,820,191	27,385	14,730	40,371	10,440,218
Salaried employees: Male.....			55	260	1	4	5	328
Female.....			39	138	1	1	1	182
Wage-earners: Male.....			416	1,113	11	9	32	1,587
Female.....			113	261			1	376
Total employees.....			623	1,772	13	14	39	2,473
Salaries and wages: Salaries.....\$			145,955	831,951	3,354	7,406	9,947	1,003,993
Wages.....			542,759	1,615,445	14,043	8,146	45,948	2,231,988
Total.....			688,714	2,447,400	17,397	15,552	55,895	3,235,981
Cost of fuel and electricity.....\$			5,722	82,187	208	196	373	89,011
Cost of materials.....			922,535	2,971,107	11,453	6,025	23,384	3,911,706
Value of products.....\$			2,011,072	7,355,487	44,023	26,964	90,766	9,449,284

Table 3.—Principal Statistics Relative to the Manufactures of Non-Ferrous Metals in Canada, by Industries and by Provinces, 1924—Concluded

Industry	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Alberta	British Columbia	Canada*
ELECTRICAL APPARATUS AND SUPPLIES—								
Number of plants.....			13	87	4	3	2	109
Capital employed.....\$			19,450,382	52,490,372	266,560	37,920		72,381,261
Salaried employees: Male.....			856	1,379	15	5		2,261
Female.....			276	501	2			779
Wage-earners: Male.....			2,308	5,606	42	10		8,076
Female.....			1,134	1,416	4			2,554
Total employees.....			4,574	8,992	63	15		13,670
Salaries and wages: Salaries.....\$			1,950,342	3,315,210	42,180	8,700		5,329,878
Wages.....\$			3,654,718	7,025,278	45,395	10,012		10,759,614
Total.....\$			5,605,060	10,340,488	87,581	18,712		16,089,492
Cost of fuel and electricity.....\$			343,168	535,589	3,011	2,053		881,808
Cost of materials.....\$			7,134,794	17,065,907	126,713	18,447		21,370,896
Value of products.....\$			15,300,028	40,733,382	202,647	69,306		56,490,465
MISCELLANEOUS NON-FERROUS METAL PRODUCTS—								
Number of plants.....			2	13	1			16
Capital employed.....\$				733,685				853,246
Salaried employees: Male.....				33				38
Female.....				2				1
Wage-earners: Male.....				94				112
Female.....				48				48
Total employees.....				177				202
Salaries and wages: Salaries.....\$				77,459				100,794
Wages.....\$				148,930				168,029
Total.....\$				226,398				268,823
Cost of fuel and electricity.....\$				4,826				5,302
Cost of materials.....\$				297,792				322,001
Value of products.....\$				602,120				744,066
ALL INDUSTRIES—								
Number of plants.....	2	3	61	240	12	7	16	341
Capital employed.....\$		537,179	32,417,279	79,155,104	1,154,009	654,932	333,333	114,354,971
Salaried employees: Male.....		2	1,112	2,107	37	19	21	3,301
Female.....		2	362	779	6	1	4	1,156
Wage-earners: Male.....		158	4,010	9,386	100	35	95	13,783
Female.....		27	1,310	2,076	5		1	3,120
Total employees.....		189	6,794	14,438	148	55	121	21,670
Salaries and wages: Salaries.....\$		4,405	2,587,497	5,286,351	88,555	35,291	48,342	8,056,012
Wages.....\$		155,862	5,770,151	11,832,136	115,784	34,244	122,794	18,062,827
Total.....\$		160,267	8,357,648	17,138,790	204,339	69,535	171,136	26,118,839
Cost of fuel and electricity.....\$		14,699	797,942	1,044,058	20,662	9,014	6,866	1,865,153
Cost of materials.....\$		212,781	12,574,397	28,445,478	697,523	205,558	232,169	42,383,013
Value of products.....\$		427,888	27,138,513	63,588,837	1,150,207	372,605	504,763	93,223,373

Where fewer than 3 firms in 1 province were engaged in the same industry, the data for these companies are not shown by provinces but they are included in the Canada totals for each industry.

Table 4.—Principal Statistics Relative to the Manufactures of Non-Ferrous Metals in Canada, by Industries and by Provinces, 1925

[illegible]

Table 4.—Principal Statistics Relative to the Manufactures of Non-Ferrous Metals in Canada by Industries and by Provinces, 1925—Continued

Industry	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan and Alberta	British Columbia	Canada*
BRASS AND COPPER PRODUCTS—								
Number of plants.....	1	1	20	58	3	1	7	91
Capital employed.....\$			5,495,621	12,885,924	758,822		100,703	20,508,839
Salaried employees: Male.....			154	364	18		10	536
Female.....			23	100	1			131
Wage-earners: Male.....			655	1,998	48		36	2,932
Female.....			89	282	1			873
Total employees.....			901	2,744	68		46	4,032
Salaries and wages: Salaries.....\$			333,035	830,289	36,120		19,315	1,209,668
Wages.....\$			821,010	2,580,778	50,953		42,953	3,685,977
Total.....\$			1,154,045	3,411,067	87,082		62,768	4,895,645
Cost of fuel and electricity.....\$			115,485	556,012	14,894		6,030	517,887
Cost of materials.....\$			1,200,100	8,052,255	616,074		54,180	10,147,373
Value of products.....\$			3,405,949	14,035,823	796,309		152,882	19,155,309
LEAD, TIN AND ZINC PRODUCTS—								
Number of plants.....		1	7	9	2		3	22
Capital employed.....\$			739,602	2,628,097			175,334	3,782,120
Salaried employees: Male.....			17	60			3	87
Female.....			8	23			5	40
Wage-earners: Male.....			27	315			14	566
Female.....				36				36
Total employees.....			52	432			22	529
Salaries and wages: Salaries.....\$			62,951	133,285			13,880	226,626
Wages.....\$			32,017	335,965			11,561	393,347
Total.....\$			94,968	469,240			28,444	619,973
Cost of fuel and electricity.....\$			9,978	72,231			2,167	86,894
Cost of materials.....\$			731,256	2,048,189			140,480	3,130,257
Value of products.....\$			976,551	2,671,881			209,070	4,103,532
PRECIOUS METAL PRODUCTS—								
Number of plants.....	1	1	26	69	4	3	4	108
Capital employed.....\$			1,648,166	8,328,416	57,137		40,505	10,130,772
Salaried employees: Male.....			56	235	3		3	308
Female.....			42	131			2	180
Wage-earners: Male.....			483	1,105	28		31	1,657
Female.....			136	273	2			411
Total employees.....			717	1,747	30		36	2,556
Salaries and wages: Salaries.....\$			151,401	815,876	11,428		6,367	997,753
Wages.....\$			623,529	1,631,482	38,229		45,589	2,349,114
Total.....\$			774,930	2,447,359	47,657		51,956	3,346,867
Cost of fuel and electricity.....\$			7,771	78,234	952		409	87,476
Cost of materials.....\$			1,003,370	2,633,806	18,421		22,361	3,688,196
Value of products.....\$			2,215,944	7,144,408	79,556		92,590	9,531,778
ELECTRICAL APPARATUS AND SUPPLIES—								
Number of plants.....		1	19	91	5	4	2	122
Capital employed.....\$			21,333,492	53,563,573	330,675	42,019		75,375,623
Salaried employees: Male.....			959	1,386	17	5		2,371
Female.....			292	530	2			826
Wage-earners: Male.....			2,713	5,402	52	11		8,206
Female.....			1,140	1,550	4			2,706
Total employees.....			5,104	8,868	75	16		14,112
Salaries and wages: Salaries.....\$			2,228,732	3,356,722	39,523	8,700		5,648,877
Wages.....\$			4,214,945	6,505,524	59,815	10,634		10,823,490
Total.....\$			6,443,677	9,862,246	99,338	19,334		16,472,357
Cost of fuel and electricity.....\$			325,803	619,071	3,611	2,375		953,478
Cost of materials.....\$			8,007,845	17,126,501	207,496	16,754		25,431,836
Value of products.....\$			18,568,118	40,952,860	424,498	32,782		60,158,837
MISCELLANEOUS NON-FERROUS METAL PRODUCTS—								
Number of plants.....			4	12	1			17
Capital employed.....\$				793,680				919,733
Salaried employees: Male.....				34				42
Female.....				2				4
Wage-earners: Male.....				105				132
Female.....				55				55
Total employees.....				196				243
Salaries and wages: Salaries.....\$				84,673				112,700
Wages.....\$				175,312				200,445
Total.....\$				259,985				313,145
Cost of fuel and electricity.....\$				5,416				6,378
Cost of materials.....\$				314,153				346,518
Value of products.....\$				916,772				998,277

Table 4.—Principal Statistics Relative to the Manufacture of Non-Ferrous Metal Products in Canada, by Industries and by Provinces, 1925—Concluded

Industries	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan and Alberta	British Columbia	Canada*
ALL INDUSTRIES—								
Number of plants	2	4	77	250	15	8	16	372
Capital employed	\$		34,459,187	82,308,750	1,352,577	729,685	386,403	119,908,299
Salaried employees: Male			1,234	2,127	43	21	21	3,491
Female			378	801	9		8	1,207
Wage-earners: Male			4,579	9,223	137	30	105	14,267
Female			1,355	2,271	7			3,666
Total employees			7,515	11,422	196	51	131	22,631
Salaries and wages: Salaries	\$		2,893,506	5,337,243	191,080	29,541	52,662	8,191,342
Wages	\$		6,496,050	11,650,797	157,197	31,746	129,491	18,653,524
Total	\$		9,389,556	16,988,040	348,277	61,287	182,153	27,144,866
Cost of fuel and electricity	\$		1,182,803	1,174,376	31,897	9,568	9,462	2,418,841
Cost of materials	\$		13,875,495	31,262,663	936,851	247,044	278,300	16,738,851
Value of products	\$		32,469,871	67,637,018	1,326,443	383,307	588,942	103,136,233

*Where fewer than 3 firms in 1 province were engaged in the same industry, the data for these companies are not shown by provinces but they are included in the Canada totals for each industry.

Table 5.—Capital Employed in the Manufacture of Non-Ferrous Metal Products in Canada by Industries, 1924 and 1925

Industry	1924				1925			
	Capital employed as represented by				Capital employed as represented by			
	Lands, buildings, machinery and tools	Materials on hand and stocks in process	Cash, trading and operating accounts	Total	Lands, buildings, machinery and tools	Materials on hand and stocks in process	Cash, trading and operating accounts	Total
	\$	\$	\$	\$	\$	\$	\$	\$
Aluminium and aluminium ware	5,500,634	4,975,881	1,459,511	8,936,025	5,728,706	1,825,367	1,637,140	9,191,213
Brass and copper products	8,528,305	4,702,560	5,363,578	18,594,443	9,030,559	5,536,150	5,936,129	20,502,838
Lead, tin and zinc products	1,223,431	942,174	1,094,228	3,259,833	1,633,046	1,051,702	1,000,772	3,785,520
Precious metal products	4,424,378	3,458,061	2,557,779	10,440,218	4,544,742	3,364,117	2,221,913	10,130,772
Electrical apparatus and supplies	36,898,391	19,756,532	15,658,281	72,301,204	37,900,484	19,391,557	18,083,582	75,375,623
Miscellaneous non-ferrous metal products	432,491	229,752	191,005	853,248	472,242	224,599	222,892	919,733
Total	56,993,629	31,634,960	26,324,382	114,354,971	59,316,379	31,393,492	29,198,428	119,908,299

Table 6.—Capital Employed in the Manufacture of Non-Ferrous Metal Products in Canada by Provinces, 1924 and 1925

Province	1924				1925			
	Capital employed as represented by				Capital employed as represented by			
	Lands, buildings, machinery and tools	Materials on hand and stocks in process	Cash, trading and operating accounts	Total	Lands, buildings, machinery and tools	Materials on hand and stocks in process	Cash, trading and operating accounts	Total
	\$	\$	\$	\$	\$	\$	\$	\$
Nova Scotia and New Brunswick	398,052	143,760	98,502	640,314	308,779	198,147	164,771	671,697
Quebec	17,557,871	9,365,627	5,493,781	32,417,279	18,529,162	9,422,508	6,507,457	34,459,187
Ontario	38,439,921	21,006,662	19,708,521	79,155,104	39,834,399	21,190,632	24,263,669	85,208,750
Manitoba	282,923	318,416	552,670	1,154,009	319,928	386,883	645,767	1,352,577
Saskatchewan and Alberta	200,520	73,064	380,748	654,332	201,380	73,601	454,704	729,685
British Columbia	116,342	126,831	90,160	333,333	132,731	121,642	132,030	386,403
Canada	56,993,629	31,634,960	26,324,382	114,354,971	59,316,379	31,393,492	29,198,428	119,908,299

Table 7.—Number of Wage-Earners Employed in the Manufacture of Non-Ferrous Metal Products in Canada, by Months and by Industries, 1924

Month	Industry						Total
	Aluminium and aluminium ware	Brass and copper products	Lead, tin and zinc products	Precious metal products	Electrical apparatus and supplies	Miscellaneous non-ferrous metal products	
January.....	936	2,954	368	1,971	10,538	157	16,924
February.....	945	3,081	376	1,952	10,618	157	17,129
March.....	962	3,233	364	1,956	10,785	150	17,450
April.....	1,031	3,283	368	1,953	10,714	150	17,499
May.....	1,002	3,353	363	1,906	10,564	150	17,338
June.....	998	3,297	355	1,858	10,325	145	16,978
July.....	998	3,229	365	1,865	10,046	149	16,632
August.....	995	3,134	366	1,917	10,016	150	16,578
September.....	997	3,008	342	1,964	10,183	160	16,654
October.....	1,026	2,938	370	2,034	10,719	184	17,271
November.....	1,008	2,887	357	2,062	11,121	186	17,621
December.....	1,022	2,847	363	2,022	11,405	185	17,844
Average.....	994	3,103	363	1,963	10,630	160	17,213

Table 8.—Number of Wage-Earners Employed in the Manufacture of Non-Ferrous Metal Products in Canada, by Months and by Industries, 1925

Month	Industry						Total
	Aluminium and aluminium ware	Brass and copper products	Lead, tin and zinc products	Precious metal products	Electrical apparatus and supplies	Miscellaneous non-ferrous metal products	
January.....	1,033	2,957	358	1,973	11,329	166	17,816
February.....	1,064	3,096	381	2,017	10,649	157	17,364
March.....	1,082	3,228	396	2,057	10,422	158	17,313
April.....	1,072	3,281	388	2,010	10,182	159	17,192
May.....	1,088	3,354	409	1,965	10,257	166	17,339
June.....	1,075	3,329	429	1,920	10,274	171	17,198
July.....	1,044	3,357	382	1,890	10,284	173	17,110
August.....	1,063	3,355	425	1,987	10,601	186	17,629
September.....	1,045	3,359	408	2,122	11,276	195	18,405
October.....	1,028	3,442	414	2,229	11,855	211	19,179
November.....	1,031	3,501	417	2,300	11,837	223	19,309
December.....	1,022	3,407	414	2,278	11,723	226	19,070
Average.....	1,059	3,305	402	2,068	10,912	187	17,933

Table 9.—Number of Wage-Earners Employed in the Manufacture of Non-Ferrous Metal Products in Canada, by Months and by Provinces, 1924

Month	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan and Alberta	British Columbia	Canada
January.....	10	197	4,985	11,500	101	37	94	16,924
February.....	10	189	5,191	11,510	97	37	95	17,129
March.....	11	198	5,370	11,635	104	38	94	17,450
April.....	13	209	5,466	11,571	107	40	93	17,499
May.....	9	206	5,375	11,514	102	37	95	17,338
June.....	10	199	5,224	11,314	100	31	100	16,978
July.....	11	198	5,058	11,152	101	32	100	16,652
August.....	10	182	5,182	10,978	101	31	94	16,578
September.....	9	159	5,194	11,063	103	31	95	16,651
October.....	9	169	5,470	11,391	105	33	94	17,271
November.....	14	170	5,566	11,623	116	39	93	17,621
December.....	10	135	5,621	11,834	115	35	94	17,844
Average.....	10	185	5,320	11,462	105	35	96	17,213

Table 10.—Number of Wage-Earners Employed in the Manufacture of Non-Ferrous Metal Products in Canada by Months and by Provinces, 1925

Month	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan and Alberta	British Columbia	Canada
January	9	140	5,819	11,593	127	30	98	17,816
February	9	170	5,896	11,030	129	28	102	17,364
March	8	193	5,969	10,878	135	31	99	17,313
April	9	187	5,849	10,793	136	28	100	17,102
May	9	170	5,838	10,949	140	28	105	17,229
June	10	178	5,765	10,983	133	26	103	17,198
July	10	213	5,715	10,945	131	25	101	17,140
August	10	238	5,666	11,432	141	28	105	17,620
September	10	214	5,862	11,998	148	32	111	18,465
October	12	267	6,148	12,439	166	38	109	19,179
November	13	294	6,320	12,372	162	33	115	19,369
December	14	299	6,318	12,133	166	33	107	19,670
Average	10	216	5,934	11,494	144	30	105	17,933

Table 11.—Hours of Labour (in the Month of Greatest Employment) in the Non-Ferrous Metal Products Industry in Canada, by Industries and by Provinces, 1925

Industry	Number of wage-earners working per day of				Average number of hours worked per man per week per working days of			
	8 hours or less	9 hours	10 hours	Over 10 hours	8 hours or less	9 hours	10 hours	Over 10 hours
(a) BY INDUSTRIES—								
Aluminium and aluminium ware	436	454	218	55	46	51	56	60
Brass and copper products	1,104	2,054	823	50	46	40	58	71
Lead, tin and zinc products	64	317	14	32	45	40	56	64
Precious metal products	1,289	796	110	220	44	50	57	80
Electrical apparatus and supplies	6,043	4,895	467	248	44	51	62	77
Miscellaneous non-ferrous metal products	70	122	37	12	45	49	58	71
All Industries	9,906	8,638	1,669	623	45	50	58	72
(b) BY PROVINCES—								
Nova Scotia and New Brunswick	15	279		17	46	50		72
Quebec	4,481	1,829	344	194	45	50	58	70
Ontario	5,220	6,398	1,316	403	45	50	58	73
Manitoba	81	93	8	3	44	50	59	65
Alberta and Saskatchewan	8	31		1	45	49		78
British Columbia	101	8	1	5	44	54	61	66
Canada	9,906	8,638	1,669	623	45	50	58	72

Table 12.—Fuel and Electricity Used in the Manufacture of Non-Ferrous Metal Products in Canada, by Kinds and by Provinces, 1924

Province	Anthracite coal	Bituminous coal	Coke	Gasoline and fuel oil	Gas	Wood	Other fuel	Electricity used	Total value
	Tons	Tons	Tons	Gals.	M cu. ft.	Cord		K.W.H.	\$
Nova Scotia and New Brunswick—									
Quantity	85	707	50	37,655				237,061	
Value	\$ 1,190	\$ 4,473	\$ 600	\$ 4,254			\$ 450	\$ 5,638	\$ 16,611
Quebec—									
Quantity	3,047	23,758	1,169	735,297	27,800	133		125,327,856	
Value	\$ 33,283	\$ 160,712	\$ 13,401	\$ 64,989	\$ 24,025	\$ 655	\$ 824	\$ 410,053	\$ 764,942
Ontario—									
Quantity	3,343	58,705	4,426	1,695,356	90,369	898		24,399,355	
Value	\$ 37,173	\$ 398,378	\$ 47,188	\$ 166,306	\$ 93,354	\$ 2,830	\$ 5,899	\$ 324,930	\$ 1,044,058
Manitoba—									
Quantity	14	540	57	83,063	250	53		112,435	
Value	\$ 273	\$ 5,537	\$ 938	\$ 10,341	\$ 459	\$ 448		\$ 2,666	\$ 20,662
Alberta—									
Quantity		8	270	184	1,358	24		67,211	
Value		\$ 40	\$ 4,130	\$ 54	\$ 656	\$ 122	\$ 2,083	\$ 1,923	\$ 8,014
British Columbia—									
Quantity		113	72	14,177	748	19		38,811	
Value		\$ 1,065	\$ 1,540	\$ 1,653	\$ 854	\$ 116		\$ 1,638	\$ 6,866
CANADA—									
Quantity	6,489	83,831	6,044	2,565,732	120,585	1,117		156,182,739	
Value	\$ 71,925	\$ 538,265	\$ 67,803	\$ 247,597	\$ 119,348	\$ 4,171	\$ 9,256	\$ 746,848	\$ 1,805,153

Table 13.—Fuel and Electricity Used in the Manufacture of Non-Ferrous Metal Products in Canada, by Kinds and by Provinces, 1925

Province	Anthracite coal	Bituminous coal	Coke	Gasoline and fuel oil	Gas	Wood	Other fuel	Electricity used	Total value
	Tons	Tons	Tons	Gals.	M cu. ft.	Cord		K.W.H.	\$
Nova Scotia and New Brunswick—									
Quantity.....		1,022	48	56,260	884			299,342	
Value.....	\$	4,222	\$ 547	\$ 7,422	\$ 1,104		\$ 500	\$ 6,950	\$ 20,745
Quebec—									
Quantity.....	3,317	25,481	2,745	670,065	46,983	161		375,864,245	
Value.....	\$ 38,039	\$ 153,674	\$ 34,033	\$ 56,624	\$ 27,953	\$ 1,458	\$ 369	\$ 870,653	\$1,182,803
Ontario—									
Quantity.....	2,993	68,755	4,905	1,789,395	190,232	347		38,262,581	
Value.....	\$ 36,086	\$ 385,251	\$ 30,980	\$ 180,864	\$ 91,333	\$ 2,147	\$ 9,341	\$ 438,074	\$1,174,376
Manitoba—									
Quantity.....	10	285	74	85,752	561	42		141,792	
Value.....	\$ 215	\$ 2,944	\$ 1,118	\$ 10,697	\$ 893	\$ 410	\$ 2,475	\$ 3,145	\$ 21,897
Alberta and Saskatchewan—									
Quantity.....									
Value.....									
British Columbia—									
Quantity.....		81	218	15,201	1,385	61		58,949	
Value.....	\$	834	\$ 2,927	\$ 1,519	\$ 1,460	\$ 283		\$ 2,439	\$ 9,162
CANADA—									
Quantity.....	6,324	95,626	8,284	2,616,876	212,471	644		414,710,705	
Value.....	\$ 74,340	\$ 516,948	\$ 73,754	\$ 257,181	\$ 123,681	\$ 4,765	\$ 15,067	\$ 31,323,104	\$2,418,841

Table 14.—Fuel and Electricity Used in the Manufacture of Non-Ferrous Metal Products in Canada, by Kinds and by Industries, 1924

Industry	Anthracite coal	Bituminous coal	Coke	Gasoline and fuel oil	Gas	Wood	Other fuel	Electricity used	Total value
	Tons	Tons	Tons	Gals.	M cu. ft.	Cords		K.W.H.	\$
Aluminium and aluminium ware—									
Quantity.....	26	6,319	111	31,802	2,731			118,210,788	
Value.....	\$ 312	\$ 44,626	\$ 757	\$ 3,598	\$ 3,418		\$ 400	\$ 240,913	\$ 294,024
Brass and copper products—									
Quantity.....	3,913	11,754	3,367	1,448,317	8,423	349		9,053,612	
Value.....	\$ 41,050	\$ 63,241	\$ 39,958	\$ 111,137	\$ 10,909	\$ 2,305	\$ 5,710	\$ 149,455	\$ 453,764
Lead, tin and zinc products—									
Quantity.....	65	2,057	176	114,645	4,278	31		449,598	
Value.....	\$ 1,146	\$ 47,491	\$ 1,955	\$ 15,000	\$ 3,775	\$ 233		\$ 8,020	\$ 78,214
Precious metal products—									
Quantity.....	506	5,545	66	43,672	13,027	85		1,691,369	
Value.....	\$ 5,771	\$ 37,524	\$ 591	\$ 4,552	\$ 9,523	\$ 237	\$ 518	\$ 30,325	\$ 89,041
Electrical apparatus and supplies—									
Quantity.....	1,971	57,818	2,324	927,496	91,727	646		20,648,662	
Value.....	\$ 23,344	\$ 342,972	\$ 24,542	\$ 83,310	\$ 91,301	\$ 1,364	\$ 2,628	\$ 315,349	\$ 881,808
Miscellaneous non-ferrous metal products—									
Quantity.....	20	336			399	6		128,700	
Value.....	\$ 310	\$ 2,351			\$ 423	\$ 32		\$ 2,186	\$ 5,302
TOTAL—									
Quantity.....	6,488	83,831	6,044	2,565,732	120,555	1,117		150,182,729	
Value.....	\$ 71,923	\$ 538,205	\$ 67,803	\$ 247,597	\$ 119,348	\$ 4,171	\$ 9,256	\$ 746,848	\$1,805,153

Table 15.—Fuel and Electricity Used in the Manufacture of Non-Ferrous Metal Products in Canada, by Kinds and by Industries, 1925

Industry	Anthracite coal	Bituminous coal	Coke	Gasoline and fuel oil	Gas	Wood	Other fuel	Electricity used	Total value
	Tons	Tons	Tons	Gals.	M cu. ft.	Cords		K.W.H.	\$
Aluminium and aluminium ware—									
Quantity.....	22	16,166	1,003	33,921	9,455			368,206,030	
Value.....	\$ 306	\$ 41,200	\$ 12,685	\$ 3,470	\$ 3,048			\$ 701,910	\$ 766,231
Brass and copper products—									
Quantity.....	3,883	11,918	6,132	1,444,948	75,770	52		13,019,416	
Value.....	\$ 44,418	\$ 67,953	\$ 48,723	\$ 144,490	\$ 12,567	\$ 3,658	\$ 12,341	\$ 183,720	\$ 517,887
Lead, tin and zinc products—									
Quantity.....	86	1,823	148	172,224	3,910	28		749,283	
Value.....	\$ 1,471	\$ 44,924	\$ 1,922	\$ 20,888	\$ 3,976	\$ 185		\$ 13,520	\$ 86,694
Precious metal products—									
Quantity.....	32	5,347	51	31,491	23,141	21		2,000,006	
Value.....	\$ 5,042	\$ 36,952	\$ 438	\$ 3,556	\$ 8,596	\$ 220	\$ 470	\$ 32,790	\$ 87,973
Electrical apparatus and supplies—									
Quantity.....	1,948	50,943	945	833,970	129,988	65		30,581,144	
Value.....	\$ 22,793	\$ 353,020	\$ 9,961	\$ 84,404	\$ 94,754	\$ 694	\$ 2,248	\$ 385,604	\$ 953,478
Miscellaneous non-ferrous metal products—									
Quantity.....	52	420	5	316	204	1		154,826	
Value.....	\$ 302	\$ 2,894	\$ 25	\$ 358	\$ 231	\$ 8		\$ 2,590	\$ 6,378
TOTAL—									
Quantity.....	6,320	85,626	8,284	2,616,876	242,471	644		414,710,705	
Value.....	\$ 71,316	\$ 516,919	\$ 73,754	\$ 257,181	\$ 123,681	\$ 4,765	\$ 15,067	\$ 51,323,161	\$ 82,418,841

Table 16.—Power Equipment in Use in the Manufacture of Non-Ferrous Metal Products in Canada by Classes and by Industries, 1924

Industry	Steam engines and turbines	Gas, gasoline and oil engines	Water wheels or turbines	Total primary power	Electric motors driven by purchased power	Total power employed	Electric motors driven by power generated by the primary power of the establishment	Total electric motors	Boilers installed
Aluminium and aluminium ware—									
No.....	1		11	12	66	78	99	163	4
H.P.....	10		52,325	52,335	1,524	53,859	2,093	3,617	525
Brass and copper products—									
No.....	7	4	1	9	537	546	32	569	37
H.P.....	1,188	125	25	1,338	12,911	11,245	568	13,479	2,654
Lead, tin and zinc products—									
No.....	1	1		2	79	81		79	4
H.P.....	20	25		45	525	570		525	182
Precious metal products—									
No.....	4			4	44	446	17	459	21
H.P.....	240			240	2,585	2,835	102	2,697	1,127
Electrical apparatus and supplies—									
No.....	8	5	7	20	2,295	2,318	1,659	3,957	76
H.P.....	6,210	33	3,100	9,343	24,530	33,873	11,320	35,856	10,587
Miscellaneous non-ferrous metal products—									
No.....					25	25		25	
H.P.....					148	148		148	
Total—									
No.....	21	7	19	47	3,447	3,494	1,867	5,254	142
H.P.....	7,668	183	55,450	63,301	42,231	105,534	14,699	56,322	15,272

Table 17.—Power Equipment in Use in the Manufacture of Non-Ferrous Metal Products in Canada, by Classes and by Industries, 1925

Industry	Steam engines and turbines	Gas, gasoline and oil engines	Water wheels or turbines	Total primary power	Electric motors driven by purchased power	Total power employed	Electric motors driven by power generated by the primary power of the establishment	Total electric motors	Boilers installed
Aluminium and aluminium ware..... No H.P.	1		11	12	66	72	110	170	1
Brass and copper products..... No H.P.	10		51,123	51,133	1,510	52,643	2,659	4,169	125
Lead, tin and zinc products..... No H.P.	6	2	1	9	597	606	21	618	25
Precious metals products..... No H.P.	1,040	135	25	1,200	14,646	15,846	427	15,073	2,775
Electrical apparatus and supplies..... No H.P.	1	1		2	107	109		107	3
Miscellaneous non-ferrous metal products..... No H.P.	20	25		45	1,815	1,860		1,815	132
..... No H.P.	2			2	447	449	16	463	17
..... No H.P.	90			90	2,310	2,400	335	2,645	1,019
..... No H.P.	7	5	7	19	2,488	2,507	1,591	4,079	58
..... No H.P.	6,085	13	4,400	10,498	27,229	37,727	10,408	37,637	9,656
..... No H.P.					29	29		29	2
..... No H.P.					417	417		417	150
Total..... No H.P.	17	8	19	44	3,728	3,772	1,738	5,466	106
Total..... H.P.	7,245	173	55,550	62,968	47,927	110,895	13,829	61,756	13,857

Table 18.—Power Equipment in Use in the Manufacture of Non-Ferrous Metal Products in Canada, by Classes and by Provinces, 1924

Industry	Steam engines and turbines	Gas, gasoline and oil engines	Water wheels or turbines	Total primary power	Electric motors driven by purchased power	Total power employed	Electric motors driven by power generated by the primary power of the establishment	Total electric motors	Boilers installed
Nova Scotia and New Brunswick..... No H.P.	2	1		3	17	20		17	3
Quebec..... No H.P.	175	25		200	193	393		193	205
Ontario..... No H.P.	8		12	20	539	559	877	1,416	19
Manitoba..... No H.P.	6,025		52,350	58,375	3,976	62,351	8,070	12,016	4,022
Alberta..... No H.P.	11	6	7	24	2,805	2,829	922	3,727	118
British Columbia..... No H.P.	1,468	158	3,100	4,726	37,470	42,196	5,982	43,452	10,855
..... No H.P.					39	39		39	1
..... No H.P.					327	327		327	70
..... No H.P.					20	20	3	23	1
..... No H.P.					134	134	12	146	120
..... No H.P.					27	27	5	32	
..... No H.P.					133	133	25	158	
Canada..... No H.P.	21	7	19	47	3,447	3,494	1,807	5,254	142
Canada..... H.P.	7,648	183	55,450	63,301	42,233	105,534	11,089	56,372	13,272

Table 19.—Power Equipment in Use in the Manufacture of Non-Ferrous Metal Products in Canada, by Classes and by Provinces, 1925

Industry	Steam engines and turbines	Gas, gasoline and oil engines	Water wheels or turbines	Total primary power	Electric motors driven by purchased power	Total power employed	Electric motors driven by power generated by the primary power of the establishment	Total electric motors	Boilers installed
Nova Scotia and New Brunswick.....	No. 1 H.P. 500	1 25		2 525	39 363	41 888	4 80	43 443	2 500
Quebec.....	No. 8 H.P. 6,025		12 51,150	20 57,175	603 4,507	623 61,632	950 8,763	1,553 13,776	17 3,993
Ontario.....	No. 8 H.P. 720	7 148	7 4,400	22 5,268	2,991 42,425	3,013 47,693	776 4,950	3,767 47,375	84 9,281
Manitoba.....	No. H.P. ....	.....	.....	.....	52 368	52 368	.....	52 368	2 80
Alberta and Saskatchewan.....	No. H.P. ....	.....	.....	.....	20 143	20 143	.....	20 143	1 3
British Columbia.....	No. H.P. ....	.....	.....	.....	23 121	23 121	8 36	31 157	.....
Canada.....	No. 17 H.P. 7,245	8 173	19 55,550	44 67,965	3,728 47,927	3,772 110,895	1,738 13,829	5,465 61,756	106 13,857

Table 20.—Principal Imports into Canada for Consumption of Non-Ferrous Metals and their Products during the Fiscal Years ended March 31, 1925 and 1926, also Imports from the United Kingdom and the United States, 1925 and 1926.

Classification	Total imports for consumption Years ended March 31		Imports from United Kingdom Years ended March 31		Imports from United States Years ended March 31	
	1925	1926	1925	1926	1925	1926
ALUMINIUM AND ITS PRODUCTS						
Alumina.....	cwt. 1,345,318	1,323,145	22	-	1,345,296	1,323,145
	\$ 2,489,248	2,587,509	21	-	2,480,227	2,587,509
Cryolite.....	cwt. 12,830	13,393			12,552	13,364
	\$ 79,369	87,852			77,360	87,677
Ingots, blocks, bars, rods, sheets or plates.....	lb. 587,687	714,352	372,567	484,605	215,120	229,592
	\$ 171,612	225,350	99,227	148,636	75,385	76,680
Leaf or foil.....	\$ 143,903	210,425	67,175	90,541	26,034	28,990
Tubing.....	lb. 57,878	87,485	33	1,812	57,767	85,648
	\$ 29,818	49,806	75	583	29,715	49,269
Kitchen or household hollow-ware.....	\$ 360,804	347,778	11,206	14,343	305,009	307,613
Manufactures of n.o.p.....	\$ 480,936	526,282	15,778	16,126	443,180	481,715
Total.....	\$ 3,755,688	4,035,062	190,480	270,229	3,445,910	3,619,438
BRASS AND ITS PRODUCTS						
Blocks, ingots or pigs.....	cwt. 3,658	2,463	127	22	3,531	2,441
	\$ 45,114	27,170	2,155	358	42,059	26,812
Scrap.....	cwt. 32,880	33,092	410	213	31,549	30,494
	\$ 299,017	323,666	3,507	1,291	289,051	304,798
Bars, rods, or coils.....	cwt. 6,431	8,492	2,859	2,205	3,572	6,287
	\$ 103,221	163,436	40,197	34,789	63,021	128,647
Strips, sheets or plates, not polished, planished, or coated.....	cwt. 7,176	10,370	1,152	493	6,024	9,877
	\$ 142,631	171,674	24,974	10,670	117,657	161,004
Tubing.....	lb. 1,644,252	2,045,176	403,461	336,144	1,238,576	1,709,032
	\$ 388,037	506,338	85,865	80,601	303,035	425,737
Castings.....	\$ 220,991	262,764	78	2,531	218,672	257,645
Valves.....	\$ 156,595	214,332	2,647	6,590	152,244	206,448
Wire, plain.....	lb. 362,089	453,543	2,258	56,241	358,116	395,875
	\$ 84,153	109,703	337	17,306	83,220	92,067
Wire, cloth or woven wire, n.o.p.....	\$ 127,568	141,035	63,675	61,987	24,328	31,805
Other brass and its products, n.e.s.....	\$ 1,966,688	2,455,697	231,528	293,642	1,628,290	1,944,498
Total.....	\$ 3,534,915	4,375,875	453,053	509,765	2,923,380	3,579,461

Table 20.—Principal Imports into Canada for Consumption of Non-Ferrous Metals and their Products during the Fiscal Years ended March 31, 1925 and 1926, also Imports from the United Kingdom and the United States, 1925 and 1926—Continued

Classification	Total imports for consumption Years ended March 31		Imports from United Kingdom Years ended March 31		Imports from United States Years ended March 31	
	1925	1926	1925	1926	1925	1926
COPPER AND ITS PRODUCTS						
Blocks, pigs or ingots..... lb.	8,716,301	8,621,899			8,716,301	8,621,899
\$	1,185,658	1,227,315			1,185,658	1,227,315
Scrap..... cwt.	21,084	30,648			19,929	39,074
\$	282,159	540,667			271,578	535,102
Bars, rods, or coils..... cwt.	201,033	254,817	566	119	200,467	254,331
\$	2,857,614	3,747,343	10,274	2,193	2,847,340	3,740,435
Strips, sheets or plates polished, planished or coated..... cwt.	22,278	16,421	3,190	528	19,088	15,893
\$	441,593	352,479	66,968	12,188	374,625	340,291
Tubing..... lb.	1,496,049	1,815,086	91,132	108,420	1,403,123	1,706,666
\$	355,242	448,432	21,655	25,660	333,112	422,772
Wire..... \$	411,792	614,576	34,040	110,369	374,491	501,111
Other copper and its products, n.e.s..... \$	429,231	484,260	23,818	31,120	403,132	439,811
Total..... \$	5,963,289	7,415,072	156,755	181,530	5,789,936	7,206,837
LEAD AND ITS PRODUCTS						
Pig and block..... lb.	508,706	485,302	87,686	47,305	421,020	437,997
\$	44,512	50,303	6,147	3,615	38,365	46,688
Bars and sheets..... lb.	91,867	122,795	8,691	32,097	83,176	90,698
\$	10,715	12,401	802	2,832	9,913	9,569
Pipe..... lb.	49,654	48,847	33,288	39,055	5,166	9,732
\$	4,202	5,181	2,680	3,634	706	1,547
Tea..... lb.	196,648	134,423	193,776	98,132	2,872	30,291
\$	22,620	16,352	22,297	11,828	323	4,524
Other lead and its products, n.e.s..... \$	246,132	232,204	101,551	103,874	73,571	77,030
Total..... \$	328,181	316,441	133,477	125,783	122,878	139,358
NICKEL AND ITS PRODUCTS						
Bars, rods, strips, sheets and plates..... lb.	575,983	895,310	24,350	1,216	551,633	894,100
\$	113,452	170,143	4,459	559	108,993	169,584
Nickel, silver and German silver in bars, rods, strips, plates or anodes..... lb.	243,572	165,199	33,771	36,141	209,801	129,058
\$	60,731	47,925	11,680	14,786	49,051	33,039
Manufactures of German, Nevada and nickel silver, not plated..... \$	196,772	251,572	19,465	23,117	176,188	223,062
Other nickel and its products, n.e.s..... \$	1,272,696	1,414,744	139,523	133,022	1,087,725	1,225,539
Total..... \$	1,643,651	1,884,284	175,127	171,484	1,421,957	1,651,224
PRECIOUS METALS AND THEIR PRODUCTS						
Electro-plated ware and gilt ware, n.o.p. \$	635,784	714,172	440,539	560,153	169,514	122,161
Silver bullion in bars, blocks, ingots, drops, sheets or plates unmanufactured..... \$	741,097	1,080,846	161	2,363	740,936	1,078,483
Sterling or other silver ware, n.o.p..... \$	212,658	230,431	134,264	160,397	68,166	63,839
Other precious metals and their products, n.e.s..... \$	411,619	560,598	47,821	106,249	335,461	426,677
Total..... \$	2,001,158	2,586,017	622,785	829,162	1,314,077	1,691,160
TIN AND ITS PRODUCTS						
Blocks, pigs and bars..... cwt.	43,535	44,409	15,171	18,646	14,916	14,672
\$	2,200,779	2,577,974	770,260	1,069,540	738,022	877,143
Tin foil..... lb.	1,021,686	527,094	15,577	2,448	1,004,314	523,946
\$	345,539	231,836	8,139	1,729	336,767	229,731
Tubes, collapsible..... \$	15,298	35,262	3,058	12,101	12,081	23,155
Total..... \$	2,561,616	2,845,072	781,457	1,083,370	1,086,870	1,130,029

Table 20.—Principal Imports into Canada for Consumption of Non-Ferrous Metals and their Products during the Fiscal Years ended March 31, 1925 and 1926, also Imports from the United Kingdom and the United States, 1925 and 1926.—Concluded

Classification	Total imports for consumption Years ended March 31		Imports from United Kingdom Years ended March 31		Imports from United States Years ended March 31	
	1925	1926	1925	1926	1925	1926
ZINC AND ITS PRODUCTS						
Spelter..... lb.	860,586	1,393,475	11,200	22,410	847,122	1,371,065
..... \$	57,825	111,994	692	1,856	56,939	110,138
Sheets and plates..... lb.	2,957,024	4,744,878	188,901	157,655	1,434,103	3,056,935
..... \$	263,457	457,402	14,222	13,810	144,077	311,121
Zinc and its products, n.e.s..... \$	204,310	217,089	715	5,460	203,514	210,635
Total..... \$	525,592	786,545	15,629	21,126	404,530	631,894
OTHER NON-FERROUS METAL PRODUCTS						
Alloys..... \$	186,538	321,383	85,488	117,902	100,257	190,223
Clocks and watches..... \$	2,451,425	2,344,751	49,684	62,602	850,229	1,008,036
Electric apparatus, n.o.p.—						
Batteries, primary..... \$	23,872	44,418	1,787	947	21,311	43,032
Batteries, storage..... No.	22,546	26,811	4,379	2,344	18,167	24,362
..... \$	923,701	1,042,152	334,138	463,845	589,520	576,530
Heating and cooking apparatus..... \$	117,030	149,615	671	11,901	116,273	131,857
Dynamos and generators..... \$	978,170	1,055,050	73,792	176,300	809,760	827,320
Fans..... No.	5,112	4,978			4,965	4,948
..... \$	48,401	52,577			40,662	50,293
Fuses, fuse plugs and cut outs..... \$	162,922	148,231	395	159	162,248	147,615
Lamps, incandescent..... No.	3,325,676	4,465,393	67,601	9,959	636,540	715,179
..... \$	386,906	484,906	6,305	3,608	92,973	101,575
Light fixtures and parts thereof..... \$	546,357	585,758	9,998	7,874	504,001	548,777
Meters..... \$	209,795	280,580	28,426	29,494	181,354	251,005
Motors..... \$	1,815,710	2,239,020	203,781	344,353	1,535,695	1,843,617
Rheostats, controllers, and other starting and controlling devices..... \$	298,520	323,512	36,556	39,089	261,496	284,380
Spark plugs, magnetos and other ignition devices..... \$	440,785	680,657	3,465	4,364	437,320	676,233
Switches, switchboards, circuit breakers and parts..... \$	948,740	1,145,370	37,664	133,349	908,544	1,009,295
Telegraph instruments..... \$	154,804	104,537	10,977	10,673	143,744	93,864
Telephone instruments..... \$	303,281	504,999	27,345	74,056	275,036	427,593
Transformers..... \$	294,603	216,737	5,150	8,864	260,090	201,900
Wireless apparatus, n.o.p..... \$	2,409,687	3,463,501	127,439	193,222	2,354,721	3,247,449
Other electric apparatus..... \$	4,135,587	3,497,683	180,770	155,692	3,824,484	3,282,430
Total electric apparatus..... \$	14,288,871	16,016,003	1,088,659	1,657,792	12,528,021	13,744,765
Gas apparatus..... \$	171,630	177,137	4,517	7,257	163,027	164,167
Printing materials..... \$	288,884	329,452	19,703	23,282	266,834	303,546
MISCELLANEOUS NON-FERROUS METAL PRODUCTS						
Manganese, oxide of..... lb.	44,258,603	114,618,896	9,812	16,373	29,090,583	114,632,523
..... \$	427,695	1,171,433	487	673	200,751	1,170,760
Ores of metals, n.o.p..... cwt.	254,107	197,436		8,981	253,435	188,455
..... \$	330,261	303,300	235	8,312	324,026	294,988
Lamps, side lights, head lights, and lanners, n.o.p..... \$	720,445	751,447	23,494	27,241	669,452	700,695
Non-ferrous metals and products, n.e.s..... \$	1,931,702	2,033,681	207,413	206,362	1,601,058	1,684,719
Total..... \$	3,410,103	4,259,861	231,620	242,588	2,878,716	3,551,162
Total \$	41,111,550	47,692,985	4,010,143	5,363,872	33,297,722	38,811,300

Table 21.—Principal Exports of Non-Ferrous Metals and their Products from Canada during the Fiscal Years Ended March 31, 1925 and 1926, also Exports to the United Kingdom and the United States, 1925 and 1926.

(Canadian Produce Only)

Classification	Total exports of Canadian produce (Mdsse.) Years ended March 31		Exports to United Kingdom Years ended March 31		Exports to United States Years ended March 31	
	1925	1926	1925	1926	1925	1926
Aluminium and its Products—						
Bars, blocks, etc. cwt.	226,530	245,683	45,572	57,969	71,190	128,907
Manufactures \$	5,135,368	6,006,390	1,030,616	1,433,022	1,582,973	3,097,767
Other \$	775,181	670,950	36,216	45,926	73,528	101,308
Total..... \$	5,910,547	6,677,340	1,066,832	1,478,948	1,656,501	3,199,075
Brass and its Products—						
Old and scrap cwt.	83,132	80,488	8,804	3,255	66,227	63,359
Valves \$	650,609	677,440	72,824	34,813	491,684	501,992
Other \$	198,366	128,912	124,050	28,036	1,061	11,169
Total..... \$	907,149	969,080	220,563	180,818	503,431	526,064
Copper and its Products—						
Fine, in ore, matte, regulus cwt.	533,740	610,906	139,363	150,230	394,377	460,676
Pigs, bars, sheets and blister cwt.	5,847,848	7,037,206	1,046,513	1,120,985	4,801,335	5,907,221
Old and scrap cwt.	445,538	517,096	3,160	697	442,058	515,561
Wire, insulated \$	5,755,444	6,953,126	60,719	22,889	5,688,056	6,909,495
Other \$	42,755	45,045	863	292	41,447	42,187
Total..... \$	12,722,677	14,943,053	1,154,815	1,210,446	10,982,622	13,295,650
Lead and its Products—						
In ore cwt.	378,772	122,437	195,320		183,452	58,509
Pig cwt.	2,456,430	635,852	1,482,754		973,676	387,422
Total..... \$	10,368,130	13,928,572	6,186,146	6,017,173	1,079,265	388,519
Nickel and its Products..... cwt.	615,497	710,814	221,818	240,526	301,368	411,028
Other..... \$	10,174,245	12,829,244	3,509,557	4,018,617	4,672,714	6,941,351
Precious Metals—						
Gold-bearing quartz, dust, etc. \$	28,793,333	25,968,094	60,651	11,360	28,732,682	25,956,734
Silver in ore, concentrates, etc. oz.	4,909,072	4,201,282	293,592	707	4,594,335	4,222,485
Silver bullion oz.	3,112,561	2,674,483	190,005	496	2,902,528	2,648,644
Other \$	13,675,661	14,121,133	4,887,841	1,236,827	6,230,974	6,060,237
Total..... \$	41,536,736	38,804,419	3,520,699	845,706	36,251,702	33,242,707
Zinc and its Products..... \$	5,344,060	5,833,005	680,407	1,528,063	1,257,852	101,632
Miscellaneous—						
Electric apparatus \$	1,581,511	1,405,490	215,200	109,282	65,350	106,445
Cobalt lb.	156,929	293,917	47,958	97,294	109,759	169,414
Other non-ferrous metals \$	354,896	868,105	107,781	236,066	224,835	366,336
Total..... \$	3,407,244	3,491,557	529,908	606,175	927,315	960,645
Total..... \$	90,370,788	97,476,270	16,868,927	15,885,946	57,334,402	58,555,643

Table 22.—Alphabetical List of Materials Used in the Industries Classified under Manufactures of Non-Ferrous Metals in Canada, 1925

Material	Industry number (See list on page 34)	Unit	Quantity	Total cost at works \$
Acid, sulphuric (66° B \acute{e}).....	5	lb.	1,641,455	32,791
Alloys, n.e.s.....	1	lb.	216,212	31,764
Alloys, white metal.....	3	lb.	1,469,827	143,289
Aluminium.....	1-3	lb.	3,787,485	718,334
Aluminium, pig and scrap.....	5	lb.	116,710	31,940
Aluminium castings, purchased.....	5	lb.	200,159	105,928
Aluminium, rods, bars, sheets and wire.....	5	lb.	129,689	41,327
Ammonium chloride.....	5	lb.	913,845	54,334
Antimony.....	5	lb.	15,023	2,704
Antimony, regulus—				
From England.....	3	lb.	121,119	18,983
From United States.....	3	lb.	105,000	15,750
From other countries.....	3	lb.	354,000	39,809
Bolts, nuts, rivets and screws.....	2-5			41,441
Brass.....	1-3	lb.	347,564	34,893
Brass and bronze.....	6			25,714
Brass and copper.....	4			79,710
Britannia metal, including blanks for plating.....	4			25,107
Buffing materials.....	1	lb.	1,560	328
Carbon for brushes, electrodes, etc.....	5			180,396
Castings—				
Brass.....	2	lb.	281,581	1,831,719
Bronze.....	2	lb.	3,182,367	
Copper.....	2	lb.	5,038,225	
Other non-ferrous metals.....	2	lb.	3,038,003	
Castings, iron.....	2	lb.	590,421	47,075
Castings, steel.....	2	lb.	146,371	7,288
Celluloid.....	2-4			5,647
Chemicals, n.e.s.....	5			120,975
Clays and marls.....	5	lb.	1,824,900	19,348
Clay, plastic.....	1	lb.	8,931	136
Coke.....	1	ton	56	672
Copper.....	3-6	lb.	798,888	98,440
Copper, pig and scrap.....	5	lb.	726,357	116,717
Copper and brass castings and punchings purchased.....	5	lb.	3,513,371	138,663
Copper and brass rods, bars, tubes, pipes, sheet and wire.....	5	lb.	35,254,095	5,808,707
Copper sulphate.....	5	lb.	847	73
Cotton and linen yarns, sheets, tapes and webbing.....	5			998,725
Crucibles.....	2			17,112
Crystals.....	4			14,424
Cutlery, steel.....	4			13,621
Cutlery, stainless steel.....	4			11,054
Dental supplies.....	4			31,579
Electrical supplies, and parts, n.e.s.....	5			4,583,405
Electrodes.....	1	lb.	18,161,902	656,089
Foundry facings.....	2			19,131
Gold.....	4			1,155,143
Glassware.....	4			67,490
Glass and porcelain.....	5			833,384
Ingot and bars—				
Brass.....	2	lb.	1,073,380	3,705,146
Bronze.....	2	lb.	4,631,925	
Copper.....	2	lb.	19,165,625	
Other non-ferrous metals.....	2	lb.	1,750,620	
Insulating paints, varnishes, japans, shellac and lacquers.....	5			281,113
Insulating waxes.....	5	lb.	2,506,692	129,214
Insulating materials, n.e.s.....	5			895,102
Iron, gun-metal.....	6	lb.	12,823	784
Iron, pig.....	2-5	ton	3,427	90,380
Iron and steel castings, punchings and forgings.....	5	ton	3,047	539,581
Iron and steel rods, bars, tubes, pipes, sheets and wire.....	5	ton	23,482	1,817,154
Iron and steel, n.e.s.....	2-6			36,681
Jewellers' findings.....	4			81,208
Jewellers' waste and scrap.....	4			565
Jewels for watch movements.....	4			255

Table 22.—Alphabetical List of Materials Used in the Industries Classified under Manufactures of Non-Ferrous Metals in Canada, 1925—Continued

Material	Industry number (See list on page 34)	Unit	Quantity	Total cost at works
				\$
Lead.....	3	lb.	4,849,071	350,784
Lead, pig—				
From England.....	3	lb.	212,756	20,879
From United States.....	3	lb.	3,499,410	313,821
From Canada.....	3	lb.	4,864,240	421,335
Lead, pig and scrap.....	5	lb.	14,191,922	1,331,285
Lead, sheets, bars and tubes.....	5	lb.	2,113,110	315,670
Lead and tin alloys.....	3	lb.	962,115	115,028
Lenses for railway and marine lamps.....	6			3,136
Lumber.....	2-5-6			56,516
Manganese.....	1	lb.	208	89
Magnesite.....	1	lb.	2,758	122
Magnesium, bars, sheets and wire.....	5	lb.	11,541	5,423
Mantle caps, knitted.....	5			8,676
Metal strip.....	0			1,225
Mica.....	5	lb.	63,107	69,040
Nails.....	0			1,072
Nickel.....	3	lb.	83,160	20,700
Nickel silver, including blanks for plating.....	4			327,979
Nitrogen.....	5			22,941
Non-ferrous metals, n.e.s.....	5	lb.	120,000	11,400
Other manufactured articles.....	2			217,385
Other base metals and alloys.....	4			18,636
Other metals, including scrap.....	3-4	lb.	2,880,418	173,508
Oxide of iron.....	1	lb.	24,963	1,765
Oxide of nickel.....	1	lb.	210	82
Paints, varnishes, shellacs, etc.....	6			2,760
Phosphorus.....	3			137
Plates and sheets—				
Brass.....	2-6	lb.	1,002,017	548,490
Bronze.....	2-6	lb.	59,568	
Copper.....	2-6	lb.	1,200,491	
Other non-ferrous metals.....	2-6	lb.	419,513	
Platinum.....	4			120,206
Pot lining materials.....	1	lb.	1,803,240	14,940
Precious stones.....	4			595,956
Rods—				
Brass.....	2	lb.	1,947,405	418,355
Bronze.....	2	lb.	9,325	
Copper.....	2	lb.	313	
Other non-ferrous metals.....	2	lb.	214,316	
Rouge and other polishes.....	4			19,279
Rubber, crude.....	5	lb.	261,341	373,097
Rubber, reclaimed.....	5			162,818
Sand, moulding and other.....	1-2	lb.	6,621,227	16,584
Scrap—				
Brass.....	2	lb.	7,794,996	1,813,125
Bronze.....	2	lb.	509,863	
Copper.....	2	lb.	5,393,090	
Other non-ferrous metals.....	2	lb.	279,861	
Scrap, iron and steel.....	2-5	lb.	3,802,016	42,890
Sheets and plates.....	2	lb.	392,176	34,529
Silver.....	4			400,511
Slag.....	1	lb.	2,758	88
Solder.....	4-6			6,966
Solder.....	3	lb.	224,283	16,863
Spelter.....	4			14,519
Springs for clocks and watches.....	1	lb.	91,885	15,534
Steel.....	0			2,905
Steel mouldings.....	1	lb.	41,494	2,341
Steel wire.....	2			65,005
Supplies for plating and polishing.....	1			
Textiles.....	6			57,084
Thermits.....	1	lb.	1,525	224
Tin.....	1-4			71,528
Tin, pig—				
Straits.....	3	lb.	1,119,159	656,592
Other brands.....	3	lb.	999,858	566,171
Tin in blocks.....	3	lb.	15,303	6,121
Trimmings (knobs, handles, spouts, etc.).....	1			26,454

Table 22.—Alphabetical List of Materials Used in the Industries Classified under Manufactures of Non-Ferrous Metals in Canada, 1925—Concluded

Material	Industry number (See list on page 34)	Unit	Quantity	Total cost-at works
				\$
Tubing and pipe—				
Brass	2	lb.	620,372	212,785
Bronze	2	lb.	1,980	
Copper	2	lb.	196,303	
Other non-ferrous metals	2	lb.	3,281	
Tungsten	5	metres	9,883,953	150,179
Watch parts	4			38,417
Wire, n.e.s.	6			5,514
Wire—				
Brass	2	lb.	309,034	397,280
Bronze	2	lb.	389,729	
Copper	2	lb.	484,513	
Wire resistance	5	lb.	1,488,514	63,520
Zinc	3-6			50,849
Zinc, pig	5	lb.	1,300,098	147,030
Zinc in bars, sheets and wire	5	lb.	1,086,318	131,579
Containers of all kinds	1-3-4-5-6			975,429
All other materials	1-3-4-5-6			8,690,169
Total				46,738,851

Table 23.—Alphabetical List of Products Made in the Industries Classified under Manufactures of the Non-Ferrous Metals in Canada, 1924

Product	Industry Number (See list on page 34)	Unit	Quantity	Total selling value
				\$
Aluminium and its products	1-3			7,803,889
Ammeters, voltmeters, wattmeters, watt-hour meters, etc., portable and switchboard type, including accompanying transformers	5			47,092
Babbitt metal	3	lb.	3,086,741	869,007
Batteries—				
Storage, for internal combustion engine	5	No.	205,069	2,690,627
Storage for all other purposes	5			188,947
Primary, dry cell type	5	No.	15,759,843	2,101,395
Any other type	5			136,922
Parts and supplies	5			65,130
Bells and gongs	2			42,046
Brass, water and steam fittings—				
Bushings	2			55,274
Taps	2	No.	84,200	41,650
Valves	2	No.	381,578	758,932
Other fittings and pipe	2			1,588,379
Brewery and distillery supplies	2			174,303
Castings—				
Alloys, white metal	3	lb.	1,712,245	137,560
Brass and bronze	3	lb.	578,495	149,338
Other	3-4			40,923
Castings and machinery fittings—				
Brass	2	lb.	944,158	3,707,929
Bronze	2	lb.	11,897,857	
Copper	2	lb.	1,083,141	
Other metal	2	lb.	216,473	
Clocks	4			484,860
Conduit, interior, moulding and fittings for same	5			709,314
Cutlery and stainless steel	4			50,827
Cutlery, other not plated	4			55,524

Tzble 23.—Alphabetical List of Products Made in the Industries Classified under Manufactures of the Non-Ferrous Metals in Canada, 1924—Continued

Product	Industry Number (See list on page 34)	Unit	Quantity	Total selling value
				\$
Dental supplies.....	4			105,879
Domestic and utility devices electric.....	5			276,668
Fans—				
Desk type.....	5	No.	1,012	30,400
Other types.....	5	No.	104	2,670
Furnaces, electro metallurgical, with accessories.....	5			26,320
Fuses and fuse wire.....	5			188,004
Generators, A.C. and D.C.	5	No. kw.	195 519,792	4,893,448
Hardware, builders, casket and other.....	2-4			327,742
Heaters, water and air.....	5	No.	27,715	205,066
Hollowware and spinings, brass and copper.....	2			164,944
Hollowware and flatware, sterling silver.....	4			522,176
Ingot and bars—				
Brass.....	2	lb.	1,670	15,133
Other metals.....	2	lb.	62,841	
Irons, flat, electric.....	5	No.	77,911	215,629
Jewellery.....	4			3,045,241
Lamps—				
Incandescent, regular carbon and tungsten, vacuum.....	5	No.	7,213,248	1,538,025
Regular tungsten, gas filled for street lighting.....	5	No.	289,750	216,616
Regular tungsten gas, filled all other classes.....	5	No.	1,917,846	1,058,604
Automobile, decorative and others, n.e.s.....	5	No.	2,188,419	390,570
Lamps, and lamp burners.....	6			232,043
Lanterns and lantern burners.....	6			23,140
Lead—				
Bars and ingots.....	3	lb.	1,190,274	114,514
Pipe.....	3	lb.	2,072,613	327,743
Sheet.....	3	lb.	1,382,006	156,400
Tubs and fittings.....	3	lb.	590,000	76,500
Lightning arresters.....	5			98,583
Lighting fixtures.....	2-5			1,341,698
Lightning rods and supplies.....	2			96,627
Line material—				
Light, power, telegraph and telephone.....	5			508,378
Line insulators, glass, porcelain, and composition.....	5			423,599
Machinery and parts (of brass or copper).....	2			144,935
Munties, incandescent gas.....	5	No.	81,231	33,439
Munties, for lamps, etc.....	6			57,712
Metals refined—				
Copper.....	3	lb.	73,908	10,396
Gold, including dental gold.....	4			623,568
Lead.....	3	lb.	353,377	32,090
Platinum.....	4			70,776
Silver.....	4			47,202
Tin.....	3	lb.	17,958	9,884
Zinc.....	3	lb.	130,988	10,639
Meters, gas, water and electric.....	5	No.	125,695	1,513,660
Motors, A.C., Stationary, for power purposes, including control equipment.....	5	No. h.p.	4,697 82,025	1,484,002
Fractional horsepower, for domestic and utility appliances.....	5	No. h.p.	21,110 3,923	306,150
Parts and supplies for same.....	5			340,866
Motors, D.C., including parts and supplies for same.....	5			716,660
Panel boards and cabinets.....	5			230,295
Plated wares, electric silver—				
(a) On Britannia metal—				
Hollowware.....	4			646,063
Flatware.....	4			305,528
Cutlery.....	4			136,696
(b) On nickel silver—				
Hollowware.....	4			263,695
Flatware.....	4			837,521
Cutlery.....	4			491,788

Table 23.—Alphabetical List of Products Made in the Industries Classified under Manufactures of the Non-Ferrous Metals in Canada, 1924—Concluded

Product	Industry Number (See list on page 34)	Unit	Quantity	Total selling value
				\$
Plates and sheets—				
Brass	2	lb.	4,414,214	1,837,432
Bronze	2	lb.	313,987	
Copper	2	lb.	2,415,380	
Other metals	2	lb.	743,215	
Pneumatic apparatus, parts and supplies	5			1,515,302
Radio equipment, n.e.s.—				
Condensers	5			78,622
Coils and couplers	5			15,445
Panels and parts	5			205,921
Rheostats and resistances	5			12,963
Transformers	5			80,229
Vacuum tubes	5			696,151
Apparatus or parts, n.e.s.	5			2,034,416
Rectifiers and parts	5			16,164
Rods—				
Brass	2	lb.	2,914,511	2,026,078
Bronze	2	lb.	117,642	
Copper	2	lb.	10,225,522	
Other	2	lb.	65,358	
Scrap	3-5			201,046
Screws	6			49,629
Searchlights, projectors, focussing lamps and headlights	5-6			47,601
Sockets, receptacles, rosettes, cutouts, etc.	5			1,196,322
Solders—				
2 and 1 wiping	3	lb.	441,871	120,921
60-40 joint	3	lb.	323,291	117,078
45-55 strictly	3	lb.	781,056	240,851
50-50 guaranteed	3	lb.	433,579	146,792
Stoves and ranges, radiators, and parts, n.e.s.	2-5-6			699,675
Switches, electric, of all kinds	5			395,506
Switchboards, light and power	5			1,898,456
Tanks	2			33,810
Transformers—				
Power and service types, 50 k.w. and over including oil, fuse boxes, etc.	5	No. k.w. No. k.w.	2,971	3,295,959
			1,024,230	
			3,467	
Power and service types, under 50 k.w., including oil, fuse boxes, etc.	5		41,100	434,304
All other types, including feeder regulators, auto-transformers, etc., n.e.s.	5			302,839
Tubing, brass and copper	2-4			65,039
Type and type metal—				
Containing less than 90% lead	3	lb.	1,048,652	182,701
Containing more than 90% lead	3	lb.	332,774	96,004
Vacuum cleaners	2-5	No.	40,833	1,345,198
Varnish, insulating	5			25,000
Washers, floor polishers and other domestic small motor appliances, etc.	5			137,539
Watches	4			478,292
Watch cases	4			81,079
Weatherstrip—				
Brass	6	ft.	17,616	792
Bronze	6	ft.	67,144	2,202
Zinc and other	6			81,380
Welding apparatus, with control equipment and accessories	5	No.	6	18,688
Wire cloth, brass	2	sq. ft.	1,329,918	685,063
Wire, gold or alloy filled	4			10,150
Wires and cables—				
Copper, bare	5			2,719,011
Copper, insulated	5			7,176,673
Wiring materials and sundries, n.e.s.	5			272,173
Other electrical apparatus and supplies not reported elsewhere	5			1,312,375
Receipts for custom work and repairs	2-4-5-6			1,595,343
*Products of 1 or 2 firms				7,876,004
All other products				4,522,062
Total				83,223,373

*Products of 1 or 2 firms includes all telephone materials, spark plugs, traction and hoisting engines, railway goods, baking and enamelling ovens, motor generator sets, carbon and other products.

Table 24.—Alphabetical List of Products Made in the Industries Classified under Manufactures of the Non-Ferrous Metals in Canada, 1925

Product	Industry number (See list at end of table)	Unit	Quantity	Total selling value
				\$
Aluminium and its products.....	1-3			9,168,822
Ammeters, voltmeters, wattmeters, watthour meters, etc., portable and switchboard type, including accompanying transformers.....	5			33,714
Annunciators, bells, clocks, time recorders, flashers, signalling apparatus.....	5			33,603
Babbitt metal.....	2-3	lb.	4,366,973	1,063,940
Batteries—				
Storage for radio—				
"A" type for filament lighting.....	5	No.	32,376	367,480
"B" type for plate supply.....	5	No.	12,889	165,388
Storage, for internal combustion engines.....	5	No.	233,316	2,857,547
Storage for all other purposes.....	5	No.	13,943	255,990
Primary, dry cell type.....	5	No.	37,318,761	3,186,104
Parts and supplies.....	5			53,759
Bells and gongs.....	2			45,940
Brewery and distillery supplies.....	2			185,000
Castings—				
Alloys, white metal.....	3	lb.	29,456	4,566
Brass and bronze.....	3	lb.	516,375	163,020
Iron.....	2			319,199
Other.....	3	lb.	194,238	68,992
Castings and machinery fittings—				
Brass.....	2	lb.	2,315,728	3,477,218
Bronze.....	2	lb.	12,597,525	
Copper.....	2	lb.	19,494	
Other metal.....	2	lb.	1,776,915	
Clocks.....	4			401,245
Conduit, interior, moulding and fittings for same.....	5			721,912
Conduit, flexible steel, non-metallic flexible and underground.....	5			205,523
Controllers, rheostats and auto-starters, exclusive of any reported with generators and motors or on switchboards.....	5			31,774
Cutlery of stainless steel.....	4			41,846
Cutlery, other not plated.....	4			55,325
Dental supplies.....	4			149,612
Electrotherapeutic apparatus.....	5			24,389
Electrodes, furnace.....	5			21,397
Fans, electric.....	5	No.	2,021	51,479
Furnaces, electro metallurgical with accessories.....	5			26,550
Fuses and fuse wire.....	5			232,282
Generators, A.C. and D.C.....	5	No.	208	2,758,819
Hardware, builders', casket and other.....	2-4			185,852
Heaters, water and air, electric.....	5	No.	32,080	296,817
Hollowware and spinings, brass and copper.....	2			57,394
Hollowware and flatware, sterling silver.....	4			410,984
Ingot and bars—				
Brass.....	2	lb.	332,411	96,072
Other metals.....	2	lb.	86,641	
Irons, flat, electric.....	5	No.	104,942	341,451
Jewellery.....	4			3,321,598
Knobs, cleats, tubes, bushings, wiring insulators.....	5			103,021
Lamps, incandescent—				
Regular carbon.....	5	No.	185,028	41,906
Regular, tungsten, vacuum for street series lighting.....	5	No.	889,327	162,254
Regular, tungsten, vacuum, all other classes.....	5	No.	7,382,642	1,556,310
Regular tungsten, gas filled for street lighting.....	5	No.	427,476	209,706
Regular tungsten, gas filled all other classes.....	5	No.	1,830,310	950,597
Automobile, decorative and others, n.e.s.....	5	No.	2,345,610	356,814
Lamps and lanterns.....	6			353,015
Lamp and lantern burners.....	6	No.	31,000	27,868
Lead—				
Bars and ingots.....	3	lb.	1,237,532	124,862
Pipe.....	3	lb.	3,698,209	530,015
Sheet.....	3	lb.	1,768,902	199,482
Traps and fittings.....	3	lb.	440,375	73,750
Antimonial.....	3	lb.	1,909,326	199,173
Sundries.....	3	lb.	70,111	10,511
Lightning arresters.....	5			133,559
Lightning fixtures.....	2-5			1,653,041
Lightning rods and supplies.....	2			210,203
Line material—				
Light, power, telegraph and telephone.....	5			586,380
Line insulators, glass, porcelain and composition.....	5			120

Table 24.—Alphabetical List of Products Made in the Industries Classified under Manufactures of the Non-Ferrous Metals in Canada, 1925—Continued

Product	Industry number (See list at end of table)	Unit	Quantity	Total selling value
				\$
Machinery and parts (of brass or copper)	2			70,981
Metals, refined—				
Copper	3	lb.	140,897	21,671
Gold, including dental gold	4			738,426
Lead	3	lb.	879,811	73,270
Platinum	4			7,700
Silver	4			29,616
Tin	3	lb.	50,441	25,945
Zinc	3	lb.	375,194	34,235
Metal stampings	2-5			171,830
Meters, gas, and water	5	No.	23,082	304,691
Motors, A.C., stationary, for power purposes, including control equipment	5	No.	3,446	1,116,837
Fractional horsepower for domestic and utility appliances	5	No.	26,395	436,125
Any type not reported elsewhere including control equipment and other accessories	5	No.	1,940	1,042,822
Parts and supplies for same	5			337,196
Motors, D.C., including parts and supplies for same	5			417,612
Motor generator sets, dynamotors, rotary converters, balancer sets, boosters with parts and supplies for same	5			215,628
Panel boards and cabinets	5			228,335
Plated wares, electro silver—				
(a) On Britannia metal—				
Hollowware	4			769,880
Flatware	4			420,101
Cutlery	4			369,086
(b) On nickel silver—				
Hollowware	4			311,474
Flatware	4			737,224
Cutlery	4			58,512
Plates and sheets—				
Brass	2	lb.	5,791,766	2,550,972
Bronze	2	lb.	414,776	
Copper	2	lb.	3,874,861	
Other metals	2	lb.	771,528	
Pneumatic apparatus, parts and supplies	5			1,221,002
Radio equipment, n.e.s.—				
Condensers	5			41,026
Coils and couplers	5			1,017
Panels and parts	5			88,103
Rheostats and resistances	5			918
Transformers	5			36,810
Vacuum tubes	5	No.	910,356	1,299,684
Telephones (head sets, loud speakers, and microphones)	5			412,556
Complete radio receiving sets	5	No.	48,498	2,196,024
Complete radio transmitting sets	5	No.	33	82,268
Apparatus or parts, n.e.s.	5			178,560
Railway goods, brass and copper	2			258,969
Rectifiers and parts	5			61,463
Rods—				
Brass	2	lb.	4,333,761	3,531,511
Bronze	2	lb.	140,693	
Copper	2	lb.	17,563,395	
Other	2	lb.	56,004	
Scrap	3-5			191,656
Screens	5			39,888
Searchlights, projectors, focussing lamps and headlights	5-6			43,958
Sockets, receptacles, rosettes, cutouts, etc.	5			819,298
Solders—				
2 and 1 wiping	3	lb.	317,572	96,065
40-40 joint	3	lb.	227,560	68,686
45-55 strictly	3	lb.	1,138,380	372,827
50-50 guaranteed	3	lb.	444,892	158,391
N.F.S.	3	lb.	10,712	4,071
Stoves and ranges, electric	5	No.	11,004	474,337
Stoves, radiators and parts, n.e.s.	2			82,078
Switches, electric, of all kinds	5			1,146,229
Switchboards, light and power	5			1,895,281
Tanks	2			230,770
Transformers—				
Power and service types, 50 k.w. and over including oil, fuse boxes, etc.	5	No.	2,739	1,694,100
Power and service types, under 50 k.w., including oil, fuse boxes, etc.	5	No.	7,704	1,813,374
All other types, including feeder regulators, auto-transformers, etc., n.e.s.	5			177,363
Tubing, brass and copper, seamless or brazed	2-4	lb.	32,087	12,194
Type and type metal—				
Containing less than 90% lead	3	lb.	1,465,579	168,257
Containing more than 90% lead	3	lb.	776,680	78,537

Table 24.—Alphabetical List of Products Made in the Industries Classified under Manufactures of the Non-Ferrous Metals in Canada, 1925—Concluded

Product	Industry number (See list at end of table)	Unit	Quantity	Total selling value
Vacuum cleaners.....	2-5	No.	47,821	5
Valves, iron.....	2			1,587,758
Washers, floor polishers and other domestic small motor appliances, etc.,	5			432,197
Watches.....	4			119,394
Water and steam fittings of brass, including bushings, taps, valves, etc.,	2			231,297
Watch cases.....	4			4,100,242
Watt-hour meters, service type, including any accompanying transformers and other accessories	5	No.	90,626	438,544
Weatherstrip, metal.....	6			908,129
Welding apparatus, with control equipment and accessories.....	5			104,009
Wire cloth, brass.....	2	sq. ft.	1,664,038	38,200
Wire cloth, gold or alloy filled.....	4			884,657
Wire, plain, brass.....	2	lb.	217,232	40,225
Wire, plain, other metal.....	2	lb.	20,000	47,933
Wires and cables—				
Copper, bare.....	5			2,609,710
Copper, insulated.....	5			8,336,216
Aluminium, bare.....	5			17,202
Wiring materials and sundries, n.e.s.....	5			50,926
Other electrical apparatus and supplies not reported elsewhere.....	5			1,923,511
Receipts for custom work and repairs.....	2-4-5-6			1,498,030
All other products including automobile supplies, architectural brass and bronze work, art goods, blanks for plating, portable electric blowers, candlesticks, cushions and runners, car heaters, extruded products, flannel rolls, fire department supplies, furnace trimmings, gasoline tank fittings, goldleaf, glassware, spark plugs, gasoline irons, lamp standards and shades, mantles, bronze memorials, baking, tempering and enamelling ovens, metal pens and pencils, paper cups, packing metal, phosphor tin, pulp mill specialties, relays, gasoline stoves, train order signals, thermite, collapsible tubes, telephone materials, and various other similar products.....	1-2-3-4-5-6			11,906,817
Total.....				103,136,233

KEY TO THE NUMBERED INDUSTRIES

- | | |
|----------------------------------|--|
| 1. Aluminium and Aluminium Ware. | 4. Precious Metals Products. |
| 2. Brass and Copper Products. | 5. Electrical Apparatus and Supplies. |
| 3. Lead, Tin and Zinc Products. | 6. Miscellaneous Non-Ferrous Metal Products. |

Table 25.—Index Numbers of Prices for Non-Ferrous Metal Products 1914 and 1921-1925

(Average of 1913 prices=100)

	Commodity	1914	1921	1922	1923	1924	1925
1	Aluminium.....	77.7	108.4	81.6	96.3	103.0	104.3
2	Antimony.....	113.3	69.5	72.2	90.6	127.9	208.3
3	Brass sheets, 4' x 2', 14-20 gauge.....	162.5	175.8	147.5	129.2	119.3	118.4
	Copper and Its Products.....	86.8	103.5	101.1	108.8	98.9	104.4
4	Electrolytic copper, American.....	86.0	103.9	102.0	108.3	97.4	102.9
5	Copper sheet, base.....	87.5	96.1	94.6	104.0	92.0	99.7
6	Electrolytic copper wire bars, imported.....	85.8	82.5	87.7	94.0	85.0	91.4
7	Solid bare copper wire.....	87.8	106.5	102.6	111.7	104.5	109.0
	Lead and Its Products.....	98.0	130.0	139.4	159.7	179.3	201.8
8	Lead, domestic.....	95.9	122.9	133.2	153.2	173.1	195.0
9	Lead pipe.....	116.2	191.0	192.8	216.1	233.0	260.1
	Nickel Ingots.....	100.0	78.9	78.9	65.8	65.8	78.9
10	Nickel ingots, 96-98 per cent.....	100.0	78.9	78.9	65.8	65.8	78.9
	Silver.....	94.7	106.4	114.1	109.5	111.9	116.2
11	Silver, fine.....	94.7	106.4	114.1	109.5	111.9	116.2
	Tin, Ingots.....	81.6	81.1	78.1	102.1	114.6	127.4
12	Tin Ingots, Straits.....	81.0	81.1	78.1	102.1	114.6	127.4
	Zinc and Its Products.....	93.2	120.7	128.2	145.5	139.0	158.8
13	Spelter, American.....	91.4	117.7	127.6	144.8	138.2	158.7
14	Zinc sheets.....	113.9	154.0	135.4	153.4	149.0	159.7
	Solder.....	82.6	82.4	81.8	102.0	114.4	129.4
15	Solder, 50-50.....	82.6	82.4	81.8	102.0	114.4	129.4
	Index Number of Non-Ferrous Metals and their Products.....	96.2	98.6	98.5	96.8	96.3	105.6

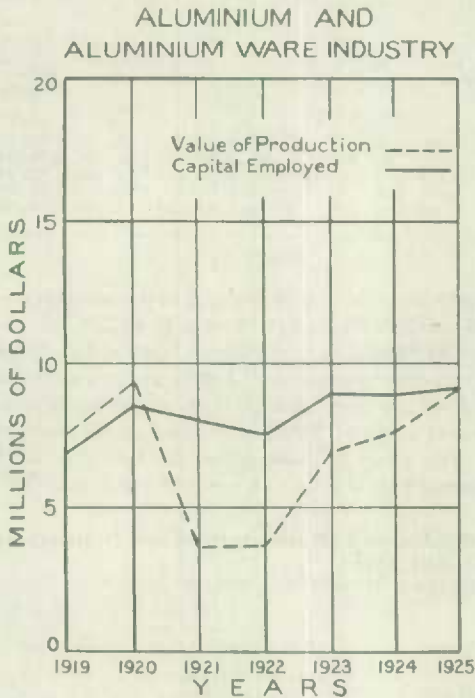
CHAPTER TWO

ALUMINIUM AND ALUMINIUMWARE

General.—The aluminium industry in Canada dates from 1903 when the first plant was established at Shawinigan Falls, Quebec, for the commercial extraction of the metal from its ores. The lightness and ductility of the metal, and the fact that it is not readily attacked by organic acids, air or water, together with the feature that it transmits heat readily, soon brought it into favour as a material for kitchen utensils and in this connection it has had an increasing popularity.

Aluminium can be forged, rolled or drawn into tubes and fine wire. It can be welded by means of the oxyacetylene torch together with a suitable flux, and is used extensively in the manufacture of brewing vessels, stills, condenser coils, etc., which are made by bending the metal into shape and then welding the joints. Large quantities of aluminium wire are now used instead of copper wire in the construction of cables and long distance transmission lines. In the form of castings, aluminium is used for many purposes where strength and lightness are required, as in automobile construction, aeroplane parts, etc., but for such purposes, alloys containing small proportions of copper, zinc, nickel or magnesium are more generally used. Aluminium also finds extensive use in the manufacture of chemical apparatus of all kinds, shipping containers, storage tanks, and instead of zinc as a precipitant of precious metals from their cyanide solutions.

Aluminium is extracted from its ores by the electrolysis of a solution of alumina in a bath of molten fluoride. The resulting metal is cast into ingots which are then rolled into plates and sheets; these form the raw material of the kitchen utensil trade. Only 1



plant in Canada produced aluminium metal from its ores during 1925; this was the plant of the Aluminium Company of Canada at Shawinigan Falls, Quebec. In that year also the Aluminium Company of America through its subsidiary the Aluminium Company of Canada, commenced the erection of a new plant on the Saguenay River in Quebec for the reduction of alumina ores to the metallic aluminium. This plant will eventually be the largest in the world for the production of aluminium metal. In choosing the location for this gigantic project, the principal factors considered were the cheap power which can be developed there, and the fact that the site is at the head of ocean navigation, on the Saguenay river, offering all the advantages of deep water ports open for seven or eight months in the year, thus permitting bauxite to be brought from South America in ships directly to the reduction plant. Work has been rushed to completion and in October, 1926, the first shipment of manufactured aluminium was made from ore partly processed at the company's plant at St. Louis. It is expected that by October, 1927, the company will be bringing their ore directly from South America.

Production of aluminium and its products in Canada during 1925 reached a selling value of \$9,137,305 as compared with a value of \$7,700,822 in 1924. Capital employed in this industry totalled \$9,191,213, and the average number of employees was 1,169 of whom 110 were on salaries and 1,059 were wage-earners. Salaries and wages paid out during the year amounted to \$1,406,919. Raw materials cost \$3,688,761 and the value added by the manufacturing processes was \$5,448,544.

Of the 12 plants in operation in this industry 11 were in Ontario, and 1 in Quebec; the latter plant smelted bauxite ores to produce aluminium ingots and bars and the other 11 establishments were engaged in the manufacture of kitchen utensils and other fabricated products.

Six plants were engaged chiefly in the fabrication of kitchen utensils of all kinds; in 1925 the total production of aluminium kitchenware amounted in value to \$1,056,920. Two plants produced boot and shoe lasts of aluminium, while one other, made turnmits, rail welding portions, etc., and the other concerns in operation in this industry made miscellaneous commodities such as skate tops, brush holders, gas tank tops, air chests, etc.

Table 26.—Summary Statistics of the Aluminium and Aluminium Ware Industry in Canada, 1921-1925

Year	Number of plants	Capital employed	Number of employees	Salaries and wages	Cost of fuel and electricity	Cost of materials	Selling value of products	Value added by manufacturing
		\$		\$	\$	\$	\$	\$
1921.....	8	8,131,088	481	609,170	58,530	1,704,432	3,633,616	1,929,481
1922.....	9	7,632,722	707	817,864	51,663	1,997,188	3,851,925	1,854,437
1923.....	11	8,994,806	1,007	1,196,287	542,350	3,192,516	7,017,830	3,825,284
1924.....	11	8,936,025	1,098	1,302,774	294,024	3,454,116	7,709,822	4,246,706
1925.....	12	9,191,213	1,169	1,406,919	766,231	3,688,761	9,137,305	5,448,544

*Electricity not included in 1921 and 1922.

Capital Employed.—Capital employed by the firms in Canada engaged in the manufacture of aluminium and aluminiumware during 1925 totalled \$9,191,213 of which \$5,728,706 was invested in lands, buildings and plant machinery, \$1,825,367 in materials on hand and stocks in process and \$1,637,140 was the value of all cash and trading accounts. Lands, plants and equipment were valued at about a quarter of a million dollars more than in 1924; the value of cash, trading and operating accounts showed an increase of about \$175,000, and the inventories showed the value of materials on hand and in process to be about \$150,000 below the figure for 1924, making thus a net increase in capital employed during 1925 of about a quarter of a million dollars.

Table 27.—Capital Employed in the Aluminium and Aluminium Ware Industry in Canada 1924 and 1925

	1924				1925			
	Capital employed as represented by				Capital employed as represented by			
	Lands, buildings, fixtures, machinery and tools	Materials on hand, and stocks in process	Cash, trading and operating accounts	Total	Lands, buildings, fixtures, machinery and tools	Materials on hand, and stocks in process	Cash, trading and operating accounts	Total
	\$	\$	\$	\$	\$	\$	\$	\$
Canada*	5,509,633	1,975,881	1,459,511	8,936,025	5,728,706	1,825,367	1,637,140	9,191,213

*Includes figures for 10 firms in Ontario and 1 in Quebec in 1924 and for 11 firms in Ontario and 1 in Quebec in 1925.

Employment.—The average number of persons employed in the manufacture of aluminium and aluminium ware during 1925 was 1,169 of whom 110 were salaried employees and 1,059 were wage-earners. Male employees numbered 1,058 and female workers averaged 111 in number during the year. In the previous year, employees numbered 1,098 of whom 104 were on a salary basis and 994 were earning wages.

As reflected by monthly employment records, the aluminium industry showed greater activity during 1925, there being an average of 1,059 wage-earners on the rolls of the various companies during the year as compared with 994 in 1924. Employment was steady throughout the year. The number on the pay-rolls in January was 1,033; in the next month the number rose to 1,064 and then gradually advanced to a maximum of 1,088 in May, then declined to 1,028 by October and stood at 1,022 for the closing month of the year.

Salaries paid during the year totalled \$205,758 and wages amounted to \$1,201,161, making a total distribution of \$1,406,919 for salaries and wages.

Table 28.—Average Number of Employees, Salaries and Wages Paid in the Aluminium and Aluminium Ware Industry in Canada, 1924 and 1925

	Average number of employees					Salaries and wages		
	Salaried employees		Wage-earners		Total	Salaries	Wages	Total
	Male	Female	Male	Female				
1924						\$	\$	\$
Canada*	79	25	917	77	1,094	205,848	1,155,920	1,362,774
1925								
Canada*	84	26	974	85	1,169	205,758	1,201,161	1,406,919

*Includes figures for 10 plants in Ontario and 1 in Quebec in 1924 and 11 firms in Ontario and 1 in Quebec in 1925.

Table 29.—Number of Wage-Earners Employed in the Aluminium and Aluminium Ware Industry in Canada, by Months, 1924 and 1925

Month	1924			1925		
	Male	Female	Total	Male	Female	Total
January	868	68	936	948	85	1,033
February	874	71	945	970	88	1,058
March	886	76	962	986	90	1,076
April	956	75	1,031	975	97	1,072
May	927	75	1,002	995	93	1,088
June	925	73	998	988	87	1,075
July	925	73	998	969	78	1,047
August	920	75	995	985	75	1,060
September	918	79	997	962	83	1,045
October	936	90	1,026	944	84	1,028
November	925	83	1,008	957	74	1,031
December	930	83	1,012	949	73	1,022
Average	917	77	994	974	85	1,059

Table 30.—Fuel and Electricity Used in the Aluminium and Aluminium Ware Industry in Canada, 1924 and 1925

Kind	Unit of measure	1924		1925	
		Quantity	Value	Quantity	Value
		No.	\$	No.	\$
Anthracite coal	short ton	20	312	22	306
Bituminous coal	short ton	6,319	44,626	16,166	41,206
Coke	short ton	111	757	1,003	12,685
Fuel oil	gallon	30,521	3,155	33,275	3,186
Gasoline	gallon	1,081	443	616	290
Gas	M cu. ft.	2,731	3,418	9,455	3,648
Other fuel			400		
Electric power	k.w.h.	118,210,788	240,913	368,206,030	704,910
Total			241,024		706,231

Table 31.—Power Employed in the Aluminium and Aluminium Ware Industry in Canada, 1924 and 1925

Description	1924		1925	
	Number of units	Total h.p. according to manufacturers' rating	Number of units	Total h.p. according to manufacturers' rating
Steam engines and turbines.....	1	10	1	10
Hydraulic turbines or water wheels.....	11	52,325	11	51,125
Total primary power.....	12	52,335	12	51,135
Electric motors operated by purchased power.....	60	1,524	60	1,510
Total power equipment employed.....	78	53,859	72	52,645
Electric motors operated by power generated by the primary power of the establishment.....	99	2,093	110	2,659
Total electric motors.....	165	3,617	170	4,169
Boilers installed.....	4	525	1	125

Materials Used.—Bauxite ores, carbon electrodes, aluminium sheets and partly fabricated aluminium were the more important of the materials used in the industry. The total cost of materials delivered at the works amounted to \$3,688,761, as compared with a total of \$3,454,116 in 1924.

Products.—Including aluminium pig, aluminium ingot, kitchen utensils and all fabricated products, the total production of aluminium in Canada amounted in value to \$9,137,305. As materials cost \$3,688,761, the difference between this figure and the sales value of the products just mentioned, amounted to \$5,448,544; this represented the value added by manufacturing processes. As only 1 company produced aluminium metal from its ores, but little data can be given without revealing that company's activities. For this reason tables showing details of materials used and products made, are omitted from this report. Production of aluminium kitchenware amounted in value to \$1,056,920.

Imports and Exports.—Exports of aluminium and its products during the calendar year amounted in value to \$7,352,080, of which \$6,558,910 worth was in the form of bars, blocks, etc., while \$793,170 represented the value of manufactured articles. Imports during the same period reached a total value of \$4,049,791, the main items being as follows: alumina, \$2,627,281; cryolite ore, \$94,624; aluminium in ingots, blocks, bars, etc., \$217,885; leaf and foil, \$202,823; tubing, \$45,409; kitchenware, \$342,116; and other manufactures, \$519,653.

Table 32.—Imports into Canada and Exports of Aluminium and its Products, 1923-1925

	1923		1924		1925	
	Pound	Value	Pound	Value	Pound	Value
		\$		\$		\$
IMPORTS—						
Alumina.....	131,773,700	2,190,091	128,695,000	2,375,346	127,505,400	2,627,281
Cryolite ore.....	1,807,000	139,203	1,142,200	70,563	1,507,600	94,624
Aluminium—						
Ingots, blooms, bars.....	759,981	194,357	653,656	183,110	692,426	217,885
Tubing.....	73,103	30,770	47,247	27,064	82,086	45,409
Manufactures.....		468,518		485,037		519,653
Lead foil.....		151,023		135,316		202,823
Household and hollowware.....		544,046		403,613		342,116
Total.....		3,715,068		3,680,649		4,049,791
EXPORTS—						
Aluminium—						
Ingots, bars, etc.....	17,585,400	3,380,198	18,146,700	3,990,857	27,267,800	6,558,910
Manufactures.....		797,635		767,430		793,170
Total.....		4,177,833		4,758,287		7,352,080

Table 33.—Monthly Average Prices of Ingot Aluminium, 1923-1925

(At New York in cents per pound)

Month	1923	1924	1925
January.....	23.00	28.00	28.00
February.....	23.37	28.00	28.00
March.....	25.12	28.00	28.00
April.....	27.00	28.50	28.00
May.....	27.00	28.50	28.00
June.....	27.00	28.50	28.00
July.....	26.50	28.50	28.00
August.....	26.50	28.00	28.00
September.....	26.30	28.00	28.00
October.....	26.50	28.00	28.00
November.....	26.50	28.00	29.00
December.....	27.00	28.00	29.00
Average.....	25.98	28.17	28.17

Table 34.—World's Production of Aluminium, 1913, and 1921-1925

(From *The Mineral Industry*)

(Short tons)

Country	1913	1921	1922	1923	1924	1925
Austria.....	5,510	2,204	4,408	4,408	3,306	4,408
Canada.....	6,519	6,612	9,918	18,183	17,632	18,734
France.....	14,880	11,020	13,224	13,224	20,387	22,501
Germany.....	882	11,020	13,224	14,326	14,326	27,550
Great Britain.....	11,020	5,510	10,460	9,918	7,714	9,918
Italy.....	963	820	694	1,653	2,204	2,010
Norway.....	2,755	4,408	6,612	15,428	24,244	25,346
Switzerland.....	11,020	11,020	13,224	13,224	20,938	22,040
United States.....	32,509	31,083	57,304	106,894	93,670	102,486
Total.....	86,858	84,297	129,077	197,258	204,421	215,689

CHAPTER THREE

BRASS AND COPPER PRODUCTS

General.—Copper and its alloys, brass and bronze, are of great industrial importance. Copper itself, in an unalloyed condition, has wide field of usefulness because of its strength, ductility, and high conductivity for heat and electricity. Pure copper has a wide application in the manufacture of electrical apparatus of all kinds; in the automobile industry for starting, lighting and ignition systems, radiator cores and shells, head lights, hub caps, etc.; in the manufacture of washing machines, lightningrods, etc., in the building trade for eavestroughing, roofing and weatherstripping; and many other industrial uses. There is no method of hardening copper,

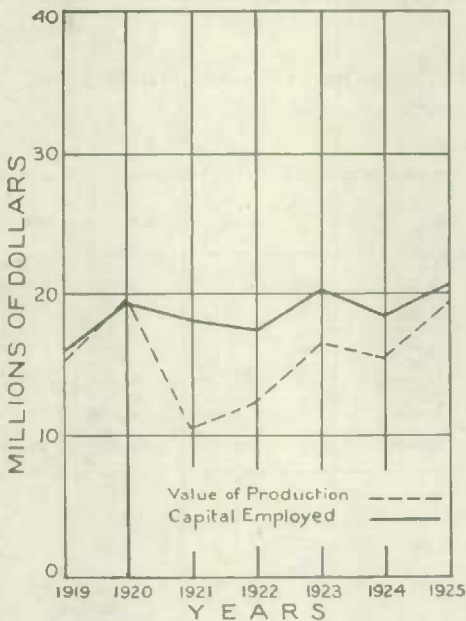
save by working the metal or by alloying it with another element. Its alloys, especially those with zinc (brasses) and those with tin (bronzes), are of great importance and have numerous uses for engineering and other purposes. Ordinary brass contains about two parts of copper to one of zinc and the usefulness for certain purposes is often improved by the addition of small proportions of other metals such as lead, tin, manganese, aluminium or nickel. Bronze is an alloy of copper containing ten per cent or more of tin, and may be improved, also, for certain purposes, by the addition of phosphorus or aluminium. These alloys find extensive use as bearing metals, machine parts and fittings, water and steam fittings, electrical fixtures, ornamental work, and in the form of tubes, plates and sheets meet a variety of industrial uses.

The brass and copper products industry in Canada in 1925 covered the operations of 91 establishments. These factories were engaged mainly in the rolling and casting of copper, brass, and bronze and in the fabrication of brass and copper materials. The industry was represented by 58 plants in Ontario, 20 in Quebec, 7 in British Columbia, 3 in Manitoba, and 1 in each of the provinces

of Nova Scotia, New Brunswick and Alberta. In the previous year, 1924, there were only 81 plants operating in this industry; returns showed a gain of 5 plants in Ontario, 5 in Quebec, 1 in Manitoba and 1 in British Columbia, while 1 plant in Quebec and 1 in Ontario did not operate during the year.

Production in the brass and copper products industry in Canada during 1925 was valued at \$19,155,309. This output represented an increase of 24 per cent over the value of \$15,487,826 reported in the previous year and compared with \$16,793,595 in 1923 and \$12,253,691 in 1922. The 91 firms engaged in this line of production represented a capital investment in Canada of \$20,508,838, employed an average of 4,032 people to whom \$4,985,645 was paid in salaries and wages and by manufacturing processes added \$9,007,936 to the value of purchased materials which cost \$10,147,373. As compared with the previous year the industry showed a gain of 2 million dollars in capital employed, an increase of 8 per cent in the number of employees and a 24 per cent gain in the value of output.

Among the principal lines produced in the plants covered by this review were included over 4 million dollars' worth of brass water and steam fittings, 3.8 million dollars' worth of castings and machinery fittings; 3.5 million dollars' worth of brass, bronze and copper rods; 2.6 million dollars worth of brass, bronze and copper plates and sheets, and many other commodities including

BRASS AND COPPER
PRODUCTS INDUSTRY

fire fighting equipment, metal pens and pencils, vacuum cleaners, brewery fittings of brass and copper, pulp mills and locomotives specialties, architectural and monumental work of brass and copper, etc.

Only 3 plants in this industry had individual outputs valued at more than a million dollars; 6 other establishments each exceeded the half million dollar mark; 10 other plants each placed the value of their output at more than a quarter million dollars; 9 others at more than \$100,000 each; 20 others above \$50,000 each; 7 above \$25,000 each; 21 more above \$10,000 each; while only 15 were below the latter figure. Thirteen of these plants each employed more than 100 persons, 6 establishments employed between 50 and 100 workers, 16 between 25 and 50 workers, 17 between 10 and 25 workers while 39 of these plants employed fewer than 10 people in each.

According to the returns received in this industrial group, brass valves were made in 15 different establishments, iron valves in 2 plants, lightning rods and supplies in 5 plants, wire cloth of brass or bronze in 3 establishments, railway goods in 4 plants, furniture trimmings in 2 plants, while only 1 plant showed a production of each of the following lines: copper tubing, brass tubing, vacuum cleaners, bronze memorials, copper gaskets, and metal pens and pencils.

Table 35.—Summary Statistics of the Brass and Copper Products Industry in Canada, 1921-1925

Year	Number of plants	Capital employed	Number of employees	Salaries and wages	Cost of *fuel and electricity	Cost of materials	Selling value of products	Value added by manufacturing
		\$		\$	\$	\$	\$	\$
1921.....	81	18,122,034	3,134	3,844,055	1,756,669	4,184,674	10,477,206	6,292,532
1922.....	83	17,608,876	3,457	4,079,825	1,148,641	5,106,224	12,253,691	7,147,467
1923.....	81	20,322,808	4,097	4,773,528	2,153,809	7,548,898	16,793,505	9,244,607
1924.....	81	18,591,143	3,747	4,604,293	453,761	7,889,367	15,487,826	7,598,459
1925.....	91	20,508,838	4,032	4,985,645	517,887	10,147,373	19,155,309	9,007,936

*Electricity not included in 1921 and 1922.

Table 36.—Principal Statistics of the Brass and Copper Products Industry in Canada, by Provinces, 1924 and 1925

Province	1924				1925			
	Number of plants	Number of employees	Salaries and wages	Selling value of products	Number of plants	Number of employees	Salaries and wages	Selling value of products
			\$	\$			\$	\$
Quebec.....	16	830	1,116,233	3,161,940	20	901	1,154,045	3,405,949
Ontario.....	54	2,608	3,158,598	10,835,069	58	2,744	3,411,067	14,035,823
Manitoba.....	2				3	68	87,982	796,369
British Columbia.....	6	39	54,192	142,166	7	40	62,768	152,882
*Canada.....	81	3,747	4,604,293	15,487,826	91	4,032	4,985,645	19,155,309

*Includes also data for 1 plant in Nova Scotia, 1 in New Brunswick and 1 in Alberta.

Capital Employed.—The total capital employed in the brass and copper products industry in 1925 was reported at \$20,508,838 which was 10 per cent above the figure for 1924 and slightly more than the former record figure of \$20,322,808 reported for 1923. The value of lands, plants and equipment stood at \$9,036,559 or about half a million dollars above the figure for 1924; the item of materials on hand and in process showed a gain of nearly a million dollars, and the value of cash, trading and operating accounts was half a million dollars above the figure for the previous year.

Ontario showed the largest investment in the brass and copper products industry; capital employed in this province was \$12,885,924 or 63 per cent of the total for Canada. Quebec was next with an investment of 5.5 million dollars, Manitoba next with \$758,822 followed by Alberta, New Brunswick, British Columbia and Nova Scotia in the order named. Returns for Ontario showed an increase of almost 2 million dollars over 1924; Quebec showed a loss of a quarter of a million dollars and the figures for other provinces remained about the same as in the preceding year.

Table 37.—Capital Employed in the Brass and Copper Products Industry in Canada by Provinces, 1924 and 1925

Province	1924				1925			
	Capital employed as represented by				Capital employed as represented by			
	Lands, buildings, fixtures, machinery and tools	Materials on hand, and stocks in process	Cash, trading, and operating accounts	Total	Lands, buildings, fixtures, machinery and tools	Materials on hand, and stocks in process	Cash, trading, and operating accounts	Total
	\$	\$	\$	\$	\$	\$	\$	\$
Quebec.....	2,476,942	1,084,079	2,163,545	5,725,466	2,610,989	1,135,522	1,749,110	5,495,621
Ontario.....	5,304,410	3,273,286	2,348,371	10,925,067	5,779,383	4,009,287	3,097,254	12,885,924
Manitoba.....	142,686	129,365	379,806	651,657	156,626	139,758	462,438	758,822
British Columbia.....	55,940	27,797	8,032	91,679	55,507	17,830	27,360	100,703
Canada*	8,528,305	4,702,560	5,363,578	18,594,443	9,036,559	5,536,150	5,936,129	20,508,838

*Includes figures for 1 firm in Nova Scotia, 1 in New Brunswick and 1 in Alberta.

Employment.—The average number of persons employed in the brass and copper products industry in Canada during 1925 was 4,032 of whom 2,744 were employed in plants in Ontario, 901 in Quebec, 68 in Manitoba, 46 in British Columbia and the remainder in Nova Scotia, New Brunswick and Alberta. On the average there were 3,305 wage-earners and 727 salaried employees working throughout the year. Male workers numbered 3,528 and female workers totalled 504 in number. Payments in salaries and wages amounted to \$4,985,645. In the previous year, 1924, an average of 3,103 wage-earners and 644 salaried employees were paid the sum of \$4,604,293 in salaries and wages.

Monthly employment figures showed a steady upward trend during the year. In January there was a total of 2,957 wage-earners employed; by May the number had risen to 3,354 where it remained fairly constant until September; in October the number rose to 3,442, increased again to 3,501 in November and then declined to 3,407 in December; the average for the year was 3,305.

Table 38.—Average Number of Employees, Salaries and Wages Paid in the Brass and Copper Products Industry in Canada, by provinces, 1924 and 1925

Province	Average number of employees					Salaries and wages		
	Salaried employees		Wage-earners		Total	Salaries	Wages	Total
	Male	Female	Male	Female				
1924						\$	\$	\$
Quebec.....	146	23	609	52	830	334,292	781,941	1,116,233
Ontario.....	338	101	1,907	262	2,608	811,427	2,347,171	3,158,598
Manitoba.....	16		40	1	57	28,965	46,814	75,779
British Columbia.....	8		31		39	15,140	39,052	54,192
Canada*	519	125	2,761	342	3,747	1,212,077	3,392,216	4,604,293
1925								
Quebec.....	154	23	655	69	901	333,035	821,010	1,154,045
Ontario.....	364	100	1,998	282	2,744	830,289	2,580,778	3,411,067
Manitoba.....	18	1	48	1	68	36,129	50,953	87,082
British Columbia.....	10		36		46	19,815	42,053	62,768
Canada*	596	131	2,932	373	4,032	1,299,668	3,685,977	4,985,645

* Includes also data for 1 plant in Nova Scotia, 1 in New Brunswick and 1 in Alberta.

Table 39.—Number of Wage-Earners Employed in the Brass and Copper Products Industry in Canada, by Months, 1924 and 1925

Month	1924			1925		
	Male	Female	Total	Male	Female	Total
January.....	2,646	308	2,954	2,662	295	2,957
February.....	2,766	315	3,081	2,782	314	3,096
March.....	2,806	337	3,233	2,886	312	3,228
April.....	2,928	355	3,283	2,908	373	3,281
May.....	2,992	361	3,353	2,973	381	3,354
June.....	2,936	361	3,297	2,960	369	3,329
July.....	2,862	367	3,229	2,976	381	3,357
August.....	2,769	375	3,134	2,967	388	3,355
September.....	2,650	352	3,002	2,966	393	3,359
October.....	2,604	334	2,938	3,027	415	3,442
November.....	2,571	316	2,887	3,098	403	3,501
December.....	2,543	304	2,847	3,012	395	3,407
Average.....	2,761	342	3,103	2,922	373	3,295

Table 40.—Hours of Labour (In Month of Greatest Employment) in the Brass and Copper Products Industry in Canada, by Provinces, 1925

Province	Average number of wage-earners working				Hours worked per man per week when working			
	8 hours or less per day	9 hours	10 hours	Over 10 hours	8 hours or less per day	9 hours	10 hours	Over 10 hours
Nova Scotia.....	9				40			
New Brunswick.....		275				50		
Quebec.....	673	170	177	19	45	50	59	67
Ontario.....	361	1,549	644	33	47	48	56	71
Manitoba.....	20	42	2	3	44	50	61	65
Alberta.....	2	18		1	40	45		78
British Columbia.....	30				45			

Table 41.—Fuel and Electricity Used in the Brass and Copper Products Industry in Canada, 1924 and 1925

Kind	Unit of measure	1924		1925	
		Quantity	Value	Quantity	Value
		No.	\$	No.	\$
Anthracite coal.....	short ton	3,913	41,050	3,883	44,418
Bituminous coal.....	short ton	11,756	63,241	11,918	67,953
Lignite coal.....	short ton	336	2,083	657	4,717
Coke.....	short ton	3,367	39,958	6,132	48,723
Fuel oil.....	gallon	1,445,461	140,074	1,442,873	143,950
Gasoline.....	gallon	2,856	1,063	2,075	549
Gas.....	M. cu. ft.	8,423	10,908	75,776	12,567
Wood.....	cord	349	2,305	529	3,658
Other fuel.....			3,827		7,632
Electric power.....	k. w. h.	9,053,612	149,455	13,019,416	183,720
Total.....			453,764		517,887

Table 42.—Power employed in the Brass and Copper Products Industry in Canada, 1924 and 1925

Description	1924		1925	
	Number of units	Total h.p. according to manufacturers' rating	Number of units	Total h.p. according to manufacturers' rating
Steam engines and turbines.....	7	1,188	6	1,040
Gas engines.....	1	125	1	125
Oil and gasoline engines.....	1		1	10
Hydraulic turbines or water wheels.....	1	25	1	25
Total primary power.....	9	1,338	9	1,200
Electric motors operated by purchased power.....	537	12,911	597	14,646
Total power equipment employed.....	546	14,249	606	15,846
Electric motors operated by power generated by the primary power of the industry.....	32	568	21	427
Total electric motors.....	569	13,479	618	15,073
Boilers installed.....	37	2,851	25	2,775

Materials Used.—Firms manufacturing brass and copper products used 27·5 millions pounds of ingots and bars; 2·2 million pounds of rods; 13·9 millions pounds of scrap; 13·1 million pounds of castings; and 2·6 million pounds of plates and sheets of brass, bronze, copper and other metals. These items, together with tubing and wire of the same metals, iron and steel in its different forms, and various manufactured articles used, reached a total cost of \$10,147,373 as compared with \$7,889,367 in 1924.

Table 43.—Materials Used in the Brass and Copper Products Industry in Canada, 1924 and 1925

Material	Unit of measure	1924		1925	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Castings—					
Brass	lb.	75,547		381,581	
Bronze	lb.	145,649		3,182,367	
Copper	lb.	4,431,538	906,841	5,938,223	1,931,719
Other	lb.	2,112,845		3,638,903	
Ingots and Bars—					
Brass	lb.	2,525,991		1,973,386	
Bronze	lb.	7,334,464	1,984,274	4,631,925	
Copper	lb.	1,716,328		19,165,625	3,765,146
Other	lb.	2,898,281		1,750,620	
Plates and Sheets—					
Brass	lb.	793,897		1,002,017	
Bronze	lb.	24,498		50,568	
Copper	lb.	758,950	353,793	1,200,491	545,435
Other	lb.	182,868		419,513	
Rods—					
Brass	lb.	1,339,512		1,947,405	
Bronze	lb.	13,510		9,325	
Copper	lb.	11,517,197	1,823,089	313	418,355
Other	lb.	129,052		214,316	
Scrap—					
Brass	lb.	6,082,253		7,794,909	
Bronze	lb.	372,787		599,863	
Copper	lb.	3,666,436	1,239,054	5,393,090	1,813,125
Other	lb.	473,365		279,861	
Tubing—					
Brass	lb.	587,032		620,372	
Bronze	lb.	354		1,980	
Copper	lb.	168,365	215,605	196,303	212,785
Other	lb.	10,172		3,281	
Wire—					
Brass	lb.	382,205		309,034	
Bronze	lb.	138,594		389,729	
Copper	lb.	273,998	265,440	484,513	397,380
Other	lb.	7,126			
Iron and Steel—					
Pig iron	lb.	2,311,680	31,482	3,588,480	44,648
Scrap	lb.	2,683,521	36,139	3,178,016	37,439
Iron castings	lb.	492,597	36,421	590,421	47,075
Steel castings	lb.	134,139	6,228	160,371	7,288
Sheets and plates	lb.	238,180	20,651	392,176	34,529
Other forms			132,806		33,996
Manufactured Articles—					
Bolts, nuts and rivets and screws			22,531		35,441
Foundry facings	lb.	113,375	4,598		19,131
Plating and polishing supplies			44,929		65,005
Other manufactures articles			203,014		217,385
Lumber	ft.b.m.	437,000	35,508	759,000	37,168
Moulding and other sands	lb.	4,909,851	13,587	6,621,227	16,268
All other materials			513,987		468,055
Total			7,889,367		10,147,373

Products.—Production in the brass and copper industry in 1925 increased in value to \$19,155,309, or 24 per cent above the corresponding value for 1924. The output of brass water and steam fittings including bushings, taps, valves, etc., showed an increase of more than 1·5 million dollars; plates and sheets of brass, bronze and copper showed a gain in value of three quarters of a million dollars; rods of all kinds increased in value by 1·5 million dollars; the value of lightning rods and supplies was more than double the corresponding figure for 1924 and the production of wire cloth was 29 per cent higher than in the previous year. The outputs of brass and copper tubing, hollowware and spinings, builders' hardware, and machinery parts showed declines from the values for 1924, while the output values of castings and machinery fittings, bells and gongs, electric fixtures were about the same as in the previous year.

Table 44.—Products of the Brass and Copper Products Industry in Canada, 1924 and 1925

Product	Unit of measure	1924		1925	
		Quantity	Selling value	Quantity	Selling value
			\$		\$
Ingots and Bars—					
Brass.....	lb.	1,670	15,133	181,560	69,897
Bronze.....	lb.			800	
Other metals.....	lb.	62,841		85,841	
Plates and Sheets—					
Brass.....	lb.	4,414,214	1,837,432	5,791,766	2,550,972
Bronze.....	lb.	313,987		414,776	
Copper.....	lb.	2,415,389		3,874,864	
Other metals.....	lb.	743,215		771,528	
Rods—					
Brass.....	lb.	2,914,514	2,026,078	4,333,761	3,531,511
Bronze.....	lb.	117,642		140,693	
Copper.....	lb.	10,225,522		17,563,395	
Other metals.....	lb.	65,358		56,004	
Tubing, Seamless or Brazed—					
Brass.....	lb.	178,591	41,520	6,250	12,194
Copper.....	lb.	2,144		25,837	
Wire—					
Brass.....	lb.			217,232	47,933
Other metals.....	lb.			20,000	
Castings and Machinery Fittings—					
Brass.....	lb.	944,158	3,707,929	2,315,728	3,796,417
Bronze.....	lb.	11,897,857		12,597,525	
Copper.....	lb.	1,083,141		19,494	
Other metals.....	lb.	216,473		4,776,915	
Bells and gongs.....			42,046		45,940
Brass and copper hollowware, spinings and stampings.....			164,944		117,361
Brass water and steam fittings—including bushing taps, valves, etc.....			2,444,135		4,100,242
Builders' hardware.....			306,169		102,598
Electric fixtures.....			421,515		428,411
Lightning rods and supplies.....			97,627		210,203
Machinery and parts.....			144,935		70,961
Tanks.....			33,810		230,770
Wire cloth.....	sq. ft.	1,329,918	685,663	1,644,038	884,657
Railway goods.....					258,969
Stoves, radiators and parts.....					82,078
Amount received for custom and repair work.....			295,868		277,833
*All other products including products of 1 or 2 firms.....			3,223,022		2,677,389
Total.....			15,487,826		19,155,399

*Includes metal pens and pencils, vacuum cleaners, iron valves, architectural brass and bronze work, auto accessories, bronze memorials, copper coils, distilling apparatus, fire extinguishers, brewery supplies, fire department supplies, gasoline tank fitting and various other products.

Imports and Exports—Copper.—Imports into Canada of copper in its various forms during the calendar year were valued at \$7,628,341 in 1925, an increase of 1.3 million dollars over the figure for the previous year. Increases were recorded in the importation of copper wire, copper scrap, and copper in the form of bars and rods imported for use in the manufacture of electric cables, trolleys and other electrical conductors. Exports of copper in the same year were valued at \$14,685,932 as against \$12,598,884 in 1924. Blister copper, copper in ore, matte, etc., copper scrap and copper wire and cable were the most important items on the export list.

Table 45.—Imports into Canada and Exports of Copper, 1924 and 1925

	1924		1925	
	Pound	Value	Pound	Value
Imports—		\$		\$
Copper, in bars or rods, when imported by manufacturers of trolley, telegraph and telephone wires, electric wires and electric cables, for use only in the manufacture of such articles in their own factories.....	14,250,000	1,982,922	26,385,300	3,857,482
Copper in bars or rods, in coil or otherwise, in lengths of not less than 6 feet, unmanufactured.....	757,000	143,322	482,500	95,563
Copper in blocks, pigs or ingots.....	12,083,131	1,591,958	7,934,779	1,138,740
Copper, old and scrap.....	1,896,200	246,632	4,174,100	572,656
Copper ore and concentrates.....			300	269
Copper in strips, sheets or plates, not polished, planished or coated.....	1,861,900	380,431	1,971,306	400,229
Copper tubing in lengths of not less than 6 feet, and not polished, bent or otherwise manufactured.....	1,509,734	354,741	1,611,987	390,881
Copper wire, plain, tinned or plated.....	242,870	71,899	287,654	104,686
Copper wire cloth, or woven wire of copper.....		7,462		4,379
Copper wire, single or several, covered with cotton, linen, silk, rubber or other material, including cable so covered.....		296,221		487,779
Copper, all other manufactures of, n.o.p.....		420,611		415,825
Copper, precipitate of crude.....				661
Anodes of nickel, zinc, copper, silver or gold.....		5,288		4,084
Copper, sub-acetate of, or verdigris, dry.....	683	201	4,083	812
Copper, sulphate of (blue vitriol).....	2,866,760	142,994	3,027,088	146,833
Copper bars for use in the manufacture of rods to be used in the manufacture of electrical conductors, and copper rods for such manufacture, units not exceeding the area of 7 gauge conductor.....	5,114,600	682,369	"	"
Copper, sulphate of, dehydrated, for agricultural or spraying purposes.....	243,088	11,027	156,808	7,662
Total		6,338,078		7,628,341
Exports—				
Copper, fine, contained in ore, matte, regulus, etc.....	49,545,800	5,346,189	60,527,500	6,969,960
Copper, blister.....	47,935,700	6,008,409	48,558,500	6,577,397
Copper, old and scrap.....	2,198,100	226,993	5,601,700	658,458
Copper, pig.....	2,405,800	284,780	1,100	126
Copper in bars, rods, strips, sheets, plates and tubing.....	170,400	39,500	156,300	45,589
Copper wire and cable.....		636,597		404,600
Copper mfrs., n.o.p.....		56,116		59,792
Total		12,598,881		14,685,932

*Combined with first item.

Brass.—Imports of brass and brass products into Canada in 1925 were valued at \$4,202,645 as compared with \$3,643,166 in 1924.

Exports of brass consisted largely of scrap which amounted in value to \$838,908 in 1925. Brass valves worth \$160,727 and other products brought the total value of exports for the year to \$1,124,974 as compared with \$663,558 in the preceding year.

Table 46.—Imports into Canada and Exports of Brass and Brass Products, 1924 and 1925

	1924		1925	
	Pound	Value	Pound	Value
IMPORTS		\$		\$
Brass and Brass Products—				
Brass, in blocks, pigs and ingots (30% Zn.).....	313,200	38,291	263,000	30,461
Brass, old and scrap (30% Zn.).....	3,002,400	272,307	3,604,900	314,303
Brass, tubing (30% Zn.).....	1,699,613	396,074	1,966,480	485,961
Brass, plain wire (30% Zn.).....	424,545	99,332	366,032	87,724
Brass, bars and rods.....	727,800	115,231	685,300	131,182
Brass, strips, sheets or plates.....	815,100	162,493	948,400	155,089
Brass, wire cloth, n.o.p.....		151,796		125,752
Brass, cup for manufacture of shells.....		119,993		106,373
Brass, caps for electric batteries.....		12,870		16,522
Brass, hand pumps.....		16,970		15,730
Brass, nails, tacks, etc.....		3,467		4,503
Brass and copper rivets, burrs and washers.....		26,634		45,334
Brass, valves.....		159,187		206,540
Brass, other manufactures, n.o.p.....		1,828,039		2,194,641
Carburettors of brass.....		237,482		252,521
Total		3,643,166		4,202,645
EXPORTS				
Brass—				
Old and scrap.....	6,000,200	429,704	9,819,600	838,908
Rods, sheets and tubing.....	5,800	1,134	49,400	10,663
Valves.....		177,883		160,727
Manufactures of brass, n.o.p.....		54,837		114,676
Total		663,558		1,124,974

Prices.—According to the *New York Engineering and Mining Journal* the average price of copper for 1925 was 14·042 cents per pound as against 13·204 cents per pound in 1924.

Table 47.—Monthly Average Prices of Copper, New York and London, 1924 and 1925
(From the *Engineering and Mining Journal*)

Month	Electrolytic copper			
	New York, in cents per pound		London, £ Sterling per ton of 2,240 pounds	
	1924	1925	1924	1925
January.....	12·401	14·769	67·193	70·607
February.....	12·708	14·463	68·167	69·525
March.....	13·515	14·004	72·087	67·739
April.....	13·206	13·252	70·150	64·194
May.....	12·772	13·347	67·648	63·660
June.....	12·327	13·399	66·313	63·369
July.....	12·390	13·946	65·815	65·750
August.....	13·221	14·490	67·800	68·169
September.....	12·917	14·376	67·125	67·693
October.....	12·933	14·300	66·620	67·523
November.....	13·635	14·353	68·063	67·893
December.....	14·260	13·866	69·762	65·625
Average.....	13·204	14·042	68·062	66·894

Primary Production.—Copper (From the *Annual Report on the Mineral Production of Canada, 1925*).—Production of copper from Canadian ores (either in Canadian or foreign smelters) during 1925 amounted to 111,450,518 pounds which at the average New York price during the year of 14·042 cents per pound amounted in value to \$15,649,882 as against 104,457,447 pounds valued at \$13,604,538 or an average price of 13·024 cents per pound in the preceding year. The increase amounted to 6·7 per cent in quantity and 1·5 per cent in total value. Production in 1925 included (a) 33,259,609 pounds of blister copper, (b) 39,272,989 pounds of copper in matte some of which was exported and some refined in Canada, (c) 30,342 pounds contained in copper sulphate and (d) 38,887,578 pounds, the estimated recoveries from ores and concentrates exported.

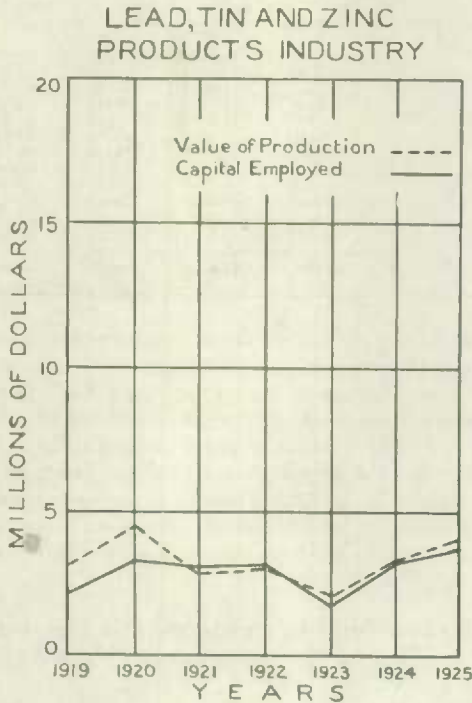
Table 48.—Production of Copper from Canadian Ores, by Provinces, 1924 and 1925

Province	1924			1925		
	Pound	Value	Per cent	Pound	Value	Per cent
		\$			\$	
Quebec.....	1,893,008	246,540	1·8	2,510,141	352,474	2·2
Ontario.....	37,113,193	4,833,622	35·5	39,718,777	5,577,311	35·7
British Columbia.....	65,451,240	8,524,370	62·7	69,221,600	9,720,097	62·1
Canada.....	104,457,447	13,604,538	100·0	111,450,518	15,649,882	100·0

CHAPTER FOUR

LEAD, TIN AND ZINC PRODUCTS

General.—The lead, tin and zinc products industry in Canada includes all firms engaged in the manufacture of such commodities as babbitt metal; brass, bronze and aluminium castings; lead bar and pipe; solders; type metals; small quantities of refined non-ferrous metals such as lead, tin and zinc produced from scrap metal; collapsible tubes; phosphor-tin, and similar products.



Babbitt metal is a copper-tin-antimony alloy and is used extensively for bearings in all classes of machinery. Bearing metals consist of a hard and a soft constituent, the function of the former being to resist wear and to provide a surface with a low coefficient of friction, and that of the latter to allow of a uniform distribution of the load and so prevent local heating and seizing. The metals most frequently employed in alloys for this purpose are tin, copper, lead and antimony.

Tin-lead alloys are greatly used for solders. Plumber's solder contains about 2 parts of lead to 1 of tin; it has a range of solidification or pasty stage at about 70°C which allows the plumber to make his well-known wiped joint. Solders of other compositions are also used extensively.

For type metal the alloy must be easily fusible, homogeneous when cast, hard enough to resist the pressure of printing, but soft enough to be easily cut with a graver, and it should expand on solidifying so as to take up the finest designs of the mould. These conditions are best fulfilled by the lead-antimony alloys. Plates for engraving are made from similar mixtures.

In Canada, there were 22 firms manufacturing white metal alloys as a major product during 1925. These plants were distributed as follows: 9 in Ontario; 7 in Quebec; 3 in British Columbia; 2 in Manitoba and 1 in New Brunswick. In 1924 there were only 20 plants in operation in this industry; 1 new plant in Quebec and 1 in Ontario commenced operations during 1925.

Production from the plants in Canada included in this industry in 1925 amounted in value to \$4,103,732, an increase of 22 per cent over the \$3,353,910 reported for 1924. Although the sales value of production showed an increase over the figures for the previous year, the margin of profit to the producers was less as the value added to purchased materials by the manufacturing processes declined to \$973,475 from \$1,076,496, and the amount paid to employees in salaries and wages increased to \$619,973 from \$557,476 in the previous year. The 22 establishments in operation represented a capital investment of \$3,782,120 and afforded employment to an average of 529 people during each month of the year. Ontario's 9 plants produced commodities worth \$2,671,884 or 65 per cent of the total for Canada; plants in Quebec had a combined production worth \$976,551; while British Columbia, Manitoba and New Brunswick were also represented with plants in this industry.

Comparison with figures for 1924 shows that there were 2 additional plants in this line of work during 1925, production was up by three quarters of a million dollars, the number of employees was 10 per cent higher and the capital employed was about half a million dollars above the figure for 1924.

According to returns received from plants in this industrial group, babbitt metal was produced in 16 different plants; lead bars and ingots in 10 establishments; lead pipe in 9 plants; lead sheets in 3; collapsible tubes in 2; antimonial lead in 2; tin strip and tubing in 1; refined aluminium, 2; refined copper, 2; refined lead, 7; refined tin, 2; refined zinc, 2; type metal containing less than 90 per cent lead, 13; type metal containing more than 90 per cent lead, 5; solders—2 and 1 wiping, in 8 different plants; 60-40 joint in 9 plants; 45-55 strictly in 12 plants; and 50-50 guaranteed in 10 different establishments.

Of the 22 plants in this group only 2 reported a production valued at more than half a million dollars; 2 other establishments showed an output value of more than a quarter of a million dollars each; 6 others over \$100,000 each; 5 more over \$25,000 each; 4 others over \$10,000 each; while only 3 plants produced less than \$10,000 worth of commodities for sale during the year. Only 1 plant employed more than 100 persons the year round; 1 other plant gave work to more than 50 persons; 3 others more than 25 in each; 2 others between 10 and 25 in each; 5 others between 5 and 10 persons in each, while 8 of the plants employed fewer than 5 hands, each the year round.

Table 49.—Summary Statistics of the Lead, Tin and Zinc Products Industry in Canada, 1921-1925

Year	Number of plants	Capital employed	Number of employees	Salaries and wages	Cost of fuel and electricity	Cost of materials	Selling value of products	Value added by manufacturing
		\$		\$	\$	\$	\$	\$
1921.....	10	3,180,149	501	682,562	33,937	1,654,642	2,886,415	1,231,773
1922.....	19	3,213,867	534	728,502	46,157	2,048,431	3,118,445	1,070,014
1923.....	20	1,749,383	193	246,528	24,277	1,556,716	2,181,273	624,557
1924.....	20	3,229,833	480	557,476	78,214	2,404,827	3,353,910	949,083
1925.....	22	3,782,120	529	619,973	86,894	3,130,257	4,103,732	973,475

*Electricity not included in 1921 and 1922.

Table 50.—Principal Statistics of the Lead, Tin and Zinc Products Industry in Canada, by Provinces, 1924 and 1925

Province	1924				1925			
	Number of plants	Number of employees	Salaries and wages	Selling value of products	Number of plants	Number of employees	Salaries and wages	Selling value of products
			\$	\$			\$	\$
Quebec.....	6	55	84,327	730,121	7	52	94,968	976,551
Ontario.....	8	388	424,021	2,270,090	9	432	469,240	2,671,884
British Columbia.....	3	17	23,398	176,730	3	22	28,449	200,070
*Canada.....	20	480	557,476	3,353,910	22	529	619,973	4,103,732

*Includes also data for 1 plant in New Brunswick and 2 in Manitoba.

Capital Employed.—Capital employed in the white metal alloys industry in 1925 amounted to \$3,782,120 as compared \$3,229,833 in the previous year. Investment in plant and equipment rose to \$1,633,646 from \$1,223,431 in 1924; materials on hand and in process increased in value to \$1,051,702 from \$912,174; and the cash and trading accounts at \$1,096,772 was about the same as in the previous year. Ontario plants accounted for about two-thirds of the total capital employed in the industry and Quebec accounted for the greater part of the remainder.

Table 51.—Capital Employed in the Lead, Tin and Zinc Products Industry in Canada, by Provinces, 1924 and 1925

Province	1924				1925			
	Capital employed as represented by				Capital employed as represented by			
	Lands, buildings, fixtures, machinery and tools	Materials on hand and stocks in process	Cash, trading and operating accounts	Total	Lands, buildings, fixtures, machinery and tools	Materials on hand and stocks in process	Cash, trading and operating accounts	Total
	\$	\$	\$	\$	\$	\$	\$	\$
Quebec.....	243,735	169,301	147,037	560,073	244,765	262,357	231,570	738,692
Ontario.....	876,098	598,706	812,344	2,287,148	1,298,341	635,083	724,673	2,658,097
British Columbia.....	27,098	52,973	65,242	145,313	44,040	56,738	74,556	175,334
Canada*	1,223,431	912,174	1,094,728	3,229,833	1,633,646	1,051,702	1,096,772	3,782,120

*Includes also data for 1 plant in New Brunswick and 2 in Manitoba.

Employment.—Salaried employees in the white metal alloys industry number 127 in 1925 as compared with 117 in the previous year, and the number of wage-earners was 402 as against 363 in 1924. Expenditures in salaries increased to \$226,626 from \$202,422 and payments in wages rose to \$393,347 from \$355,054 in the previous year. Plants in Ontario gave work to an average of 432 people; Quebec concerns employed 52 persons the year round, and in British Columbia there was an average of 22 names carried on the pay-rolls of the various companies.

Monthly figures indicated that employment was fairly steady throughout the year. The year opened with an average of 358 wage-earners employed in the various plants: in February the number was 381 and by June had reached the maximum for the year of 429 and then remained fairly steady during the last half of the year.

Table 52.—Average Number of Employees, Salaries and Wages Paid in the Lead, Tin and Zinc Products Industry in Canada, by Provinces, 1924 and 1925

Province	Average number of employees					Salaries and wages		
	Salaried employees		Wages-earners		Total	Salaries	Wages	Total
	Male	Female	Male	Female				
1924						\$	\$	\$
Quebec.....	13	10	32	.....	55	40,908	34,419	84,327
Ontario.....	55	24	286	23	388	127,124	296,897	424,021
British Columbia.....	2	3	12	.....	17	9,815	13,583	23,398
*Canada.....	76	41	340	23	480	202,422	355,054	557,476
1925						\$	\$	\$
Quebec.....	17	8	27	.....	52	62,951	32,017	94,968
Ontario.....	60	23	313	36	432	133,285	335,955	469,240
British Columbia.....	3	5	14	.....	22	13,880	14,569	28,449
*Canada.....	87	40	366	36	529	226,626	393,347	619,973

*Includes also data for 1 plant in New Brunswick and 2 in Manitoba.

Table 53.—Number of Wage-Earners Employed in the Lead, Tin and Zinc Products Industry in Canada, by Months, 1924 and 1925

Month	1924			1925		
	Male	Female	Total	Male	Female	Total
January.....	345	23	368	330	28	358
February.....	352	24	376	350	31	381
March.....	339	25	364	365	31	396
April.....	344	24	368	354	34	388
May.....	341	22	363	377	32	409
June.....	334	21	355	395	34	429
July.....	343	22	365	345	37	382
August.....	343	23	366	388	37	425
September.....	319	23	342	373	36	408
October.....	340	24	370	370	44	414
November.....	332	25	357	372	45	417
December.....	338	25	363	368	46	414
Average.....	340	23	363	366	36	402

Table 54.—Hours of Labour (In Month of Greatest Employment) in the Lead, Tin and Zinc Products Industry in Canada, by Provinces, 1925

Province	Number of wage-earners working				Hours worked per man per week when working			
	8 hours or less per day	9 hours	10 hours	Over 10 hours	8 hours or less per day	9 hours	10 hours	Over 10 hours
New Brunswick.....	3				48			
Quebec.....	5	25	3		47	49	55	
Ontario.....	49	276	11	32	44	50	58	64
Manitoba.....		9				50		
British Columbia.....	7	7			44	50		

Table 55.—Fuel and Electricity Used in the Lead, Tin and Zinc Products Industry in Canada, 1924 and 1925

Kind	Unit of measure	1924		1925	
		Quantity	Value	Quantity	Value
		No.	\$		\$
Anthracite coal.....	short ton	65	1,140	86	1,479
Bituminous coal.....	short ton	2,057	47,491	1,823	44,924
Coke.....	short ton	176	1,955	148	1,922
Fuel oil.....	gallon	93,687	9,608	151,365	14,620
Gasoline.....	gallon	20,708	5,392	20,859	6,268
Gas.....	M. cu. ft.	4,278	3,775	3,910	3,076
Wood.....	cord	31	233	28	185
Electric power.....	k. w. h.	449,598	8,620	749,283	13,520
Total.....			78,214		86,894

Table 56.—Power Employed in the Lead, Tin and Zinc Products Industry in Canada, 1924 and 1925

Description	1924		1925	
	Number of units	Total h.p. according to manufacturers' rating	Number of units	Total h.p. according to manufacturers' rating
Steam engines and turbines.....	1	20	1	20
Oil and gasoline engines.....	1	25	1	25
Total primary power.....	2	45	2	45
Electric motors operated by purchased power.....	79	525	107	1,815
Total power employed.....	81	570	109	1,860
Total electric motors.....	79	525	107	1,815
Boilers installed.....	4	182	3	132

Materials Used.—Materials used in the manufacture of white metal products cost \$3,130,257 in 1925 as compared with \$2,404,827 in 1924. A general advance was noted in the use of almost every commodity. Over 8.5 million pounds of pig lead were used as compared with 7.3 million pounds in 1924; consumption of tin rose a quarter of a million pounds; antimony regulus showed an appreciable gain; more than twice the quantities of scrap lead and of spelter were used during the year, but the consumption of scrap nickel was considerably lower than in 1924. Other commodities listed showed little change.

Table 57.—Materials Used in the Lead, Tin and Zinc Products Industry in Canada, 1924 and 1925

Material	Unit of measure	1924		1925	
		Quantity	Cost at works	Quantity	Cost at works
Antimony regulus—			\$		\$
From England.....	lb.	110,387	9,875	121,119	18,983
From United States.....	lb.	98,362	8,137	105,000	15,750
From other countries.....	lb.	237,290	19,773	354,009	39,809
Lead, pig—					
From England.....	lb.	18,823	1,293	212,756	20,879
From United States.....	lb.	2,605,788	217,975	3,490,410	313,821
From Canada.....	lb.	4,614,845	401,255	4,884,240	421,315
Lead and tin alloys.....	lb.	931,803	87,976	962,115	115,028
Phosphorus.....	lb.	125	41	326	137
Sputter.....	lb.	104,324	8,754	224,283	10,863
Tin—					
Pig, Straits.....	lb.	1,005,097	534,712	1,119,159	656,502
Pig, other brands.....	lb.	866,877	413,720	999,858	566,171
Block.....	lb.	5,226	2,006	15,303	6,121
Other metal, scrap, etc.—					
Alloys of white metal.....	lb.	1,372,698	171,737	1,469,823	143,289
Aluminium.....	lb.	182,001	36,501	153,843	33,297
Brass.....	lb.	375,738	39,183	346,942	34,754
Copper.....	lb.	718,209	83,218	789,886	97,755
Nickel.....	lb.	524,995	47,076	83,160	20,790
Lead.....	lb.	2,194,741	138,444	4,849,071	350,784
Zinc.....	lb.	434,786	27,652	540,622	38,979
Other.....	lb.	1,626,126	88,004	2,880,418	133,461
Shipping containers, of all kinds.....			25,759		38,206
All other materials.....			44,745		47,453
Total.....			2,404,827		3,130,257

Products.—Production of white metals and their alloys rose in value to \$4,103,732 in 1925, from \$3,353,910 in 1924 and marked the highest point attained since the peak year of 1920 when enhanced prices partially accounted for the high value of output. From the standpoint of quantity of production, 1925 was probably the best year on record.

During 1925, the production of babbitt metal amounted to 4,286,973 pounds worth \$1,044,059, as against 3,086,741 pounds valued at \$869,007 in 1924; lead products including pipe, sheets, etc., were worth \$1,137,793 as against \$675,157 in the previous year; solders of all kinds amounted in value to \$767,008 as compared with \$626,642 in 1924; type metal was worth \$246,794 as against \$278,705 in 1924; the output of refined metals increased to \$20,668 while the output of brass, bronze and other castings were considerably below the figures for 1924.

Table 58.—Products of the Lead, Tin and Zinc Products Industry in Canada, 1924 and 1925

Product	Unit of measure	1924		1925	
		Quantity	Selling value	Quantity	Selling value
Babbitt metal.....	lb.	3,086,741	\$ 869,007	4,286,973	\$ 1,044,059
Castings—					
Alloys, white metal.....	lb.	1,712,245	137,569	29,456	4,566
Aluminium.....	lb.	47,618	56,623	25,439	11,263
Brass and bronze.....	lb.	578,495	149,338	516,375	163,020
Other.....	lb.	65,917	29,003	194,238	68,992
Lead—					
Bars and ingots.....	lb.	1,190,274	114,514	1,237,532	124,862
Pipe.....	lb.	2,972,613	327,743	3,698,209	530,015
Sheet.....	lb.	1,382,000	156,400	1,768,902	199,482
Traps and fittings.....	lb.	500,000	76,500	440,375	73,750
Lead, n.e.s.....	lb.			2,039,437	209,684
Solders—					
2 and 1 wiping.....	lb.	441,871	120,921	317,572	96,065
90-40 joint.....	lb.	323,291	117,078	227,560	68,686
45-55 strictly.....	lb.	781,050	240,851	1,138,380	372,827
50-50 guaranteed.....	lb.	433,579	146,792	444,892	158,391
Solders, n.e.s.....	lb.			202,049	71,039
Refined metals—					
Aluminium.....	lb.	292,754	46,444	205,151	48,547
Copper.....	lb.	733,908	10,396	140,897	21,671
Lead.....	lb.	353,377	32,090	879,811	73,270
Tin.....	lb.	17,958	9,884	50,441	25,945
Zinc.....	lb.	130,988	10,639	375,194	31,235
Scrap sold.....			88,527		40,187
Type and type metal—					
Containing less than 90 per cent lead.....	lb.	1,588,652	182,701	1,465,570	168,257
Containing more than 90 per cent lead.....	lb.	872,774	96,004	776,680	78,537
*All other products including products of 1 or 2 firms.....			334,895		416,382
Total.....			3,353,910		4,103,732

*Includes collapsible tubes, packing metal, phosphor tin and other products.

The following information has been abstracted from the *Annual report on the Mineral Production of Canada*, 1925.

Lead.—**PRIMARY PRODUCTION.**—Production of lead from Canadian ores in 1925 amounted to 253,590,578 pounds (126,795·3 tons) which at the average market price at Montreal for the year of 9·120 cents per pound was valued at \$23,127,460 as against 175,485,499 pounds (87,742·8 tons) valued at \$14,221,345 in 1924 when the average price was 8·104 cents per pound. The increase amounted to 45 per cent in quantity and 63 per cent in value.

Table 59.—Refined Lead Produced in Canada,* 1905-1925

Year	Pounds of refined lead produced	Year	Pounds of refined lead produced	Year	Pounds of refined lead produced
1905.....	15,804,509	1912.....	35,893,190	1919.....	34,330,920
1906.....	20,471,314	1913.....	37,923,043	1920.....	28,720,030
1907.....	26,607,461	1914.....	36,443,706	1921.....	60,949,793
1908.....	36,549,274	1915.....	43,518,618	1922.....	81,412,716
1909.....	41,883,014	1916.....	33,087,474	1923.....	101,096,312
1910.....	32,987,508	1917.....	32,115,114	1924.....	130,471,208
1911.....	21,525,050	1918.....	31,571,112	1925.....	213,217,605

*Includes the electrolytic lead produced from Canadian and foreign ores at Trail, B.C., and also the pig lead from Galletta, Ont.

IMPORTS AND EXPORTS.—Imports of lead and lead manufactures amounted to \$588,304 during the calendar year of 1925 as against \$535,881 in 1924 and \$672,609 in 1923. The value of exports increased to nearly double the 1924 figures. In 1925 pig lead and lead in ores amounting to 197,635,300 pounds with a value of \$14,150,984 were exported as compared with an export of 121,862,000 pounds valued at \$7,650,970 in 1924. These figures in themselves show the results of the operations of the lead properties, that are being developed on such a large scale.

Table 60.—Imports into Canada and Exports of Lead, 1924 and 1925

	1924		1925	
	Pound	Value	Pound	Value
		\$		\$
IMPORTS—				
Old and scrap, pig and block.....	693,244	50,847	505,555	59,606
Bars and sheets.....	115,836	12,082	101,814	10,554
Litharge.....	956,700	89,731	1,515,300	150,576
Acetate and nitrate of lead.....	207,364	19,115	222,535	20,516
Other manufactures.....		234,372		237,717
Pipe lead.....	48,961	4,183	42,502	4,099
Shots and bullets.....	10,529	1,324	6,010	923
Tea lead.....	203,324	22,080	131,402	16,260
Lead pigments—				
Dry white lead.....	193,843	17,778	47,519	4,749
White lead, ground in oil.....	205,824	19,050	127,016	14,705
Dry red lead and orange mineral.....	704,282	64,719	628,648	68,509
Total.....		535,881		588,304
EXPORTS—				
Lead in ore.....	13,152,400	784,750	37,504,500	2,341,679
Pig lead.....	108,709,600	6,866,220	160,130,800	11,809,305
Total.....	121,862,000	7,650,970	197,635,300	14,150,984

PRICES.—The price of lead advanced considerably during 1925 and averaged 9·12 cents per pound at Montreal. High prices for lead have resulted from the increased use of the metal in the automobile and other allied industries which have been growing steadily.

Table 61.—Monthly Average Prices of Lead in Montreal, New York and London, 1924 and 1925

Month	(a) Montreal cents per pound		(b) New York cents per pound		(c) London in £ Sterling per ton of 2,240 pounds	
	1924	1925	1924	1925	1924	1925
January.....	7-84	10-04	7-972	10-169	£ s. d. 31 10 7	£ s. d. 41 8 10
February.....	8-28	9-56	8-554	9-428	34 11 9	37 18 10
March.....	8-79	9-29	9-013	8-914	37 3 3	36 16 1
April.....	7-82	8-29	8-263	8-005	32 16 5	32 15 10
May.....	7-04	8-14	7-269	7-985	29 8 6	32 5 8
June.....	7-32	8-46	7-020	8-321	32 2 9	33 9 7
July.....	7-49	8-74	7-117	8-151	32 18 4	34 13 11
August.....	7-64	9-40	7-827	9-192	32 14 7	38 3 0
September.....	7-74	9-53	8-000	9-508	33 0 5	38 17 8
October.....	8-23	9-55	8-235	9-513	35 14 4	39 0 4
November.....	9-20	9-40	8-689	9-739	39 8 6	36 17 5
December.....	9-86	9-02	9-207	9-310	41 11 8	34 14 9
Average.....	8-10	9-12	8-697	9-620	34 8 5	36 8 7

(a) Prices furnished by Consolidated Mining and Smelting Co. of Canada, Trail, B.C.

(b) Quoted from *Engineering and Mining Journal*.

Tin.—PRIMARY PRODUCTION.—Tin ores have not yet been found in sufficient quantities in Canada to be of economic importance. Ores of tin were formerly imported from South America and reduced by the Electro Tin Products Co. of Brantford, Ontario but this plant is not now in operation.

IMPORTS.—Imports of tin during 1925 were valued at \$4,094,983. Slight increases were noticeable in nearly all commodities listed.

Table 62.—Imports of Tin into Canada, 1924 and 1925

Item	1924		1925	
	Quantity	Value	Quantity	Value
	Pound	\$	Pound	\$
Tin in blocks, pigs and bars.....	4,003,600	1,971,035	4,396,100	2,459,830
Tin foil.....	1,318,168	402,370	558,997	222,657
Strip waste.....	49,973	74	1,000	38
Collapsible tubes.....		19,814		27,500
Dairy tin.....		38,246		64,990
Tinware, etc. (a).....		626,846		593,579
Tin cans and containers.....		545,646		678,718
Tin crystals or bichloride of tin.....	90,749	23,000	149,301	46,671
Total.....		3,627,121		4,094,983

(a) Tinware, plain, japanned or lithographed, and all manufactures of tin, n.e.s.

Zinc.—PRIMARY PRODUCTION.—The production of zinc from Canadian ores during 1925 totalled 109,268,511 pounds which at the average St. Louis price for the year of 7-622 cents per pound was worth \$8,328,446 as against 98,909,077 pounds valued at \$6,274,791 in 1924 at 6-344 cents per pound. The increase amounted to 10-4 per cent in quantity and 32-7 per cent in value.

Table 63.—Production of Zinc in Canada, 1911-1925

Year	*Pound	Total value	Average price per pound
		\$	Cents
1911.....	1,877,479	108,105	5-758
1912.....	4,283,760	297,421	6-943
1913.....	5,640,195	318,558	5-648
1914.....	7,246,063	377,737	5-213
1915.....	9,771,651	1,292,789	13-230
1916.....	23,364,760	2,991,625	12-804
1917.....	29,668,764	2,640,817	8-901
1918.....	35,083,175	2,862,436	8-159
1919.....	32,194,707	2,362,448	7-338
1920.....	39,863,912	3,057,961	7-671
1921.....	53,089,356	2,471,510	4-655
1922.....	56,290,000	3,217,533	5-716
1923.....	60,416,240	3,994,791	6-607
1924.....	98,909,077	6,274,791	6-344
1925.....	109,268,511	8,328,446	7-622

*Estimated smelter recoveries, including for years 1916 to 1922 the actual zinc recovered at Trail, B.C.

IMPORTS AND EXPORTS.—In 1920, imports of zinc and zinc products into Canada reached a total value of \$2,555,168; in the following year the value dropped to \$1,309,272 but in 1922 it rose again to \$1,839,373. In 1923, the value was \$1,716,741, in 1924 it stood at \$1,656,088 and in 1925 the figure was \$1,686,071. Exports of zinc ore during 1925 showed a slight increase over the previous year, but the exports of spelter was 1.2 million dollars above the export value for 1924.

Table 64.—Imports into Canada and Exports of Zinc, 1924 and 1925

Item	1924		1925	
	Pound	Value	Pound	Value
		\$		\$
IMPORTS				
Zinc and Zinc Products—				
Zinc, in blocks, pigs and sheets.....	3,073,644	259,847	4,322,335	407,236
Zinc, as spelter.....	1,230,251	84,486	1,265,510	100,736
Zinc white (80% Zn.).....	16,264,059	1,063,370	13,301,222	923,755
Zinc, dust (90% Zn.).....	359,219	30,668	315,440	28,604
Zinc, sulphate and chloride of (44% Zn.).....	941,039	41,153	1,070,595	47,450
Zinc, manufactures of.....		176,564		178,230
Total.....		1,656,088		1,686,071
EXPORTS				
Zinc—	Ton	\$	Ton	\$
Ore.....	63,931	1,626,031	48,340	1,778,019
Spelter.....	20,016	2,519,755	24,913	3,781,011
Total.....		4,145,786		5,559,030

PRICES.—The price of zinc on the St. Louis market in 1925 averaged 7.622 cents per pound as against 6.344 in 1924. The Canadian market is centred in Montreal and Toronto to which points the Consolidated Mining and Smelting Company is the most important shipper. The average yearly Montreal quotation for zinc was 9.06 cents per pound.

Table 65.—Monthly Average Prices of Zinc (Spelter), 1924 and 1925

Month	(a) Montreal (In cents per pound)		(b) St. Louis (In cents per pound)		Ordinary Brands, in London (Per long ton)	
	1924	1925	1924	1925	1924	1925
					£ s. d.	£ s. d.
January.....	8.024	9.22	6.426	7.738	34 15 3	37 18 4
February.....	8.38	8.93	6.756	7.480	36 10 4	36 10 6
March.....	8.162	8.75	6.488	7.319	35 5 11	35 14 9
April.....	7.72	8.44	6.121	6.985	32 11 9	34 12 10
May.....	7.53	8.40	5.793	6.951	30 12 11	34 4 5
June.....	7.30	8.45	5.792	6.990	31 15 9	34 2 11
July.....	7.40	8.65	5.898	7.206	32 3 10	34 17 10
August.....	7.64	9.01	6.175	7.576	32 10 10	36 13 9
September.....	7.65	9.18	6.181	7.753	32 18 6	37 8 8
October.....	7.79	9.71	6.324	8.282	33 10 3	39 17 8
November.....	8.25	10.10	6.796	8.614	35 0 5	39 0 9
December.....	8.84	9.91	7.374	8.565	36 18 8	38 6 6
Average.....	7.873	9.06	6.344	7.622	33 14 7	36 12 6

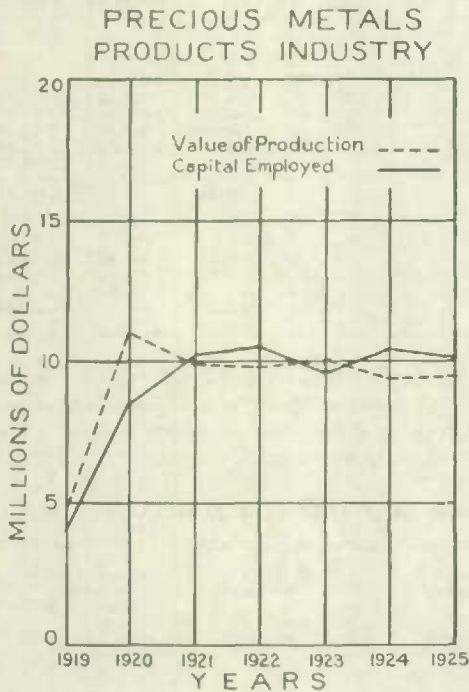
(a) Supplied by Consolidated Mining and Smelting Co. of Canada, Trail, B.C.

(b) Quoted from the *Engineering and Mining Journal*.

CHAPTER FIVE

PRECIOUS METAL PRODUCTS

General.—The precious metal products industry in Canada includes all firms engaged in the manufacture of silverware, the production of dental supplies, the manufacture of jewellery, clocks and watches and other articles of gold, silver and platinum. Manufacturing jewellers come within this scope but the many jewellery shops that conduct a repair business only, are not included in this review.



As thus defined, the industry covered the operations of 108 establishments in 1925 and the total output amounted in value to \$9,581,773. There were thus 4 more firms included in this group than in 1924 and production showed an increase of only 1.4 per cent over the output for the previous year. Of the 108 firms engaged in this line of work 69 were located in Ontario, 26 in Quebec, 4 in each of the provinces of Manitoba and British Columbia, 1 in each of the provinces of Nova Scotia, New Brunswick and Saskatchewan and 2 in Alberta. These plants represented a capital investment in Canada of \$10,130,772, employed a monthly average of 2,556 people to whom \$3,346,867 was paid in salaries and wages, and by manufacturing processes they added \$5,590,667 to the value of purchased materials which cost \$3,991,106.

Dental supplies and refined metals including dental gold were the principal products of 9 plants in Ontario, 3 in Quebec, 1 in Alberta, and 1 in New Brunswick. The total production of these firms amounted to \$1,112,981 and raw materials, chiefly gold, cost \$626,325.

Silverware, including electro-silver-plated ware of all kinds, sterling silver, hollow-ware and flat-ware, stainless steel cutlery and various other such commodities were produced as a major product by 11 different firms in Ontario and by 1 concern in Quebec. The total production of these firms was valued at \$2,918,752.

By far the larger number of firms in this industry were manufacturers of jewellery, clocks and watches. These articles constituted the major product of 1 firm in Nova Scotia, 19 in Quebec, 45 in Ontario, 3 in Manitoba, 2 in Alberta and 5 in British Columbia. The output of these firms had a total selling value of \$5,550,040.

Principal products of these plants included 3.3 million dollars' worth of jewellery; 2.5 million dollars' worth of silver-plated ware; watches and watch cases valued at about three-quarters of a million dollars; refined gold (including dental gold) worth \$730,000; clocks valued at \$404,000; and many other lines such as unplated cutlery, precious stones, glassware, brass and bronze tablets, casket hardware, alloy and gold filled wire, gold leaf, etc.

An examination of the returns for this industrial group shows that gold, including dental gold, was produced in 11 plants; dental supplies (gases, teeth, bridges, etc.) in 6 plants; gold leaf in 1 plant; watch cases in 6 plants; clocks in 4 plants; watches in 5 plants; sterling silver hollowware and flatware in 4 establishments; cutlery of stainless steel in 2 plants; electro-silver-plated hollowware on Britannia metal in 7 and on nickel-silver in 6 plants; silver-plated flatware on Britannia metal in 4 and on nickel-silver in 3 plants; and silver-plated cutlery on Britannia metal in 5 and on nickel-silver in 2 plants.

Table 66.—Summary Statistics of the Precious Metal Products Industry in Canada, 1921-1925

Year	Number of plants	Capital employed	Number of employees	Salaries and wages	Cost of fuel and *electricity	Cost of materials	Selling value of products	Value added by manufacturing
		\$		\$	\$	\$	\$	\$
1921.....	118	10,371,208	3,021	3,781,626	64,851	4,206,957	9,941,635	5,734,678
1922.....	97	10,653,458	2,725	3,464,613	69,975	3,926,116	9,815,697	5,889,581
1923.....	97	9,760,071	2,648	3,572,255	88,911	3,050,186	10,072,672	6,122,486
1924.....	101	10,440,218	2,473	3,235,981	89,041	3,941,706	9,449,284	5,507,578
1925.....	108	10,130,772	2,556	3,346,867	87,973	3,991,106	9,581,773	5,590,667

*Electricity not included in 1921 and 1922.

Table 67.—Principal Statistics of the Precious Metals Products Industry in Canada, by Provinces, 1924 and 1925

Province	1924				1925			
	Number of plants	Number of employees	Salaries and wages	Selling value of products	Number of plants	Number of employees	Salaries and wages	Selling value of products
			\$	\$			\$	\$
Quebec.....	23	623	688,71	12,011,076	26	717	774,930	2,215,944
Ontario.....	68	1,772	2,447,400	7,255,487	69	1,747	2,447,359	7,144,408
Manitoba.....	3	13	17,397	44,026	4	30	47,657	79,554
British Columbia.....	5	39	55,895	90,765	4	36	51,956	92,590
*Canada.....	104	2,473	3,235,981	9,449,284	108	2,556	3,346,867	9,581,773

*Includes also data for 1 plant in Nova Scotia, 1 in New Brunswick, 1 in Saskatchewan and 2 in Alberta.

Capital Employed.—Capital employed in the manufactures of the precious metal industry as represented by the value of lands, plants and equipment, cost of materials on hand and in process and the sum of the cash and trading balances, was \$10,130,772 as compared with \$10,440,218 in 1924. Plants in Ontario employed a capital of \$8,328,416 or 43 per cent of the total for Canada; concerns in Quebec reported the capital employed at \$1,684,166; Manitoba, British Columbia, Nova Scotia, New Brunswick, Saskatchewan and Alberta followed in the order named.

Table 68.—Capital Employed in the Precious Metal Products Industry in Canada, by Provinces, 1924 and 1925

Province	1924				1925			
	Capital employed as represented by				Capital employed as represented by			
	Lands, buildings, fixtures, machinery and tools	Materials on hand and stock in process	Cash, trading and operating accounts	Total	Lands, buildings, fixtures, machinery and tools	Materials on hand and stock in process	Cash, trading and operating accounts	Total
	\$	\$	\$	\$	\$	\$	\$	\$
Quebec.....	712,541	572,840	238,980	1,524,361	754,529	651,229	279,408	1,684,166
Ontario.....	3,675,475	2,846,203	2,298,513	8,820,191	3,734,612	2,667,172	1,924,633	8,328,116
Manitoba.....	10,080	12,449	4,856	27,385	28,823	23,593	4,721	57,137
British Columbia.....	13,304	18,432	8,635	40,371	12,414	18,017	10,074	40,505
*Canada.....	4,424,378	3,458,061	2,557,779	10,440,218	4,544,742	3,364,117	2,221,913	10,130,772

*Includes figures for 1 firm in Nova Scotia, 1 in New Brunswick, 1 in Saskatchewan and 2 in Alberta.

Employment.—The average number of persons employed in the precious metal products industry in 1925 was 2,556 including 488 salaried employees and 2,068 wage-earners; in 1924, there were 510 salaried employees and 1,963 wage-earners or a total of 2,473 people employed in this industry. There was considerable fluctuation in the number of wage-earners on the rolls during the year. The year opened with 1,973 names on the pay-rolls of the various companies, but from this average the number increased to 2,027 in March and then gradually declined to a

low point of 1,890 in July; from this point business improved and increasing numbers of workers were employed until in November the maximum of 2,300 was reached. The average for the year stood at 2,068. Wages paid totalled \$2,349,114 which together with nearly a million dollars paid out for salaries brought the total expenditures for salaries and wages to \$3,346,867.

Concerns in Ontario employed an average of 1,747 people; in Quebec, 717; in Manitoba, 36 and in British Columbia, 36.

Table 69.—Average Number of Employees, Salaries and Wages Paid in the Precious Metal Products Industry in Canada, by Provinces, 1924 and 1925

Province	Average number of employees					Salaries and wages		
	Salaried employees		Wage-earners		Total	Salaries	Wages	Total
	Male	Female	Male	Female				
1924						\$	\$	\$
Quebec.....	55	39	416	113	623	145,955	542,759	688,714
Ontario.....	260	138	1,113	261	1,772	831,951	1,615,449	2,447,400
Manitoba.....	1	1	11	.....	13	3,351	14,043	17,397
British Columbia.....	5	1	32	.....	39	9,947	45,948	55,895
Canada*	328	182	1,587	376	2,473	1,003,933	2,231,988	3,235,981
1925								
Quebec.....	56	42	483	136	717	151,401	622,529	774,930
Ontario.....	238	131	1,105	273	1,747	815,876	1,631,483	2,447,359
Manitoba.....	3	3	28	2	36	11,428	36,229	47,657
British Columbia.....	3	2	31	.....	36	6,337	45,589	51,956
Canada*	308	180	1,657	411	2,556	997,733	2,349,114	3,346,867

*Includes also data for 1 plant in Nova Scotia, 1 in New Brunswick, 1 in Saskatchewan and 2 in Alberta.

Table 70.—Number of Wage-Earners Employed in the Precious Metal Products Industry in Canada, by Months, 1924 and 1925

Month	1924			1925		
	Male	Female	Total	Male	Female	Total
January.....	1,589	382	1,971	1,579	394	1,973
February.....	1,569	383	1,952	1,596	421	2,017
March.....	1,570	377	1,956	1,615	412	2,027
April.....	1,579	374	1,953	1,608	402	2,010
May.....	1,541	365	1,906	1,595	370	1,965
June.....	1,511	347	1,858	1,555	365	1,920
July.....	1,517	348	1,865	1,543	347	1,890
August.....	1,570	347	1,917	1,621	366	1,987
September.....	1,592	372	1,964	1,690	432	2,122
October.....	1,650	384	2,034	1,766	463	2,229
November.....	1,667	395	2,062	1,823	477	2,300
December.....	1,637	385	2,022	1,808	470	2,278
Average.....	1,587	376	1,963	1,657	411	2,068

Table 71.—Hours of Labour (In Month of Greatest Employment) in the Precious Metal Products Industry in Canada, by Provinces, 1925

Province	Number of wage-earners working				Hours worked per man, per week when working			
	8 hours or less per day	9 hours	10 hours	Over 10 hours	8 hours or less per day	9 hours	10 hours	Over 10 hours
Nova Scotia.....	.....	4	.....	.....	.....	50	.....	.....
New Brunswick.....	3	.....	.....	.....	44	.....	.....	.....
Quebec.....	320	227	86	146	44	51	56	60
Ontario.....	904	550	17	69	44	49	57	79
Manitoba.....	32	.....	6	.....	43	.....	56	.....
Alberta.....	.....	5	.....	.....	.....	47	.....	.....
British Columbia.....	24	1	1	5	44	57	61	66

Table 72.—Fuel and Electricity Used in the Precious Metal Products Industry in Canada, 1924 and 1925

Kind	Unit of measure	1924		1925	
		Quantity	Value	Quantity	Value
		No.	\$	No.	\$
Anthracite coal.....	short ton.....	500	5,771	329	5,042
Bituminous coal.....	short ton.....	5,545	37,524	5,347	36,952
Coke.....	short ton.....	66	501	51	438
Fuel oil.....	gallon.....	42,635	4,320	30,209	3,205
Gasoline.....	gallon.....	1,037	232	1,282	351
Gas.....	M. cu. ft.....	13,027	9,523	23,141	8,505
Wood.....	cord.....	85	237	21	220
Other fuel.....			518		470
Electric power.....	k.w.h.....	1,691,369	30,325	2,000,006	32,790
Total			89,041		87,973

Table 73.—Power Employed in the Precious Metal Products Industry in Canada, 1924 and 1925

Description	1924		1925	
	Number of units	Total h.p. according to manufacturers' rating	Number of units	Total h.p. according to manufacturers' rating
Steam engines and turbines.....	4	240	2	90
Total primary power	4	240	2	90
Electric motors operated by purchased power.....	442	2,505	447	2,310
Total power employed	446	2,835	449	2,400
Electric motors operated by power generated by the primary power of the industry.....	17	102	16	335
Total electric motors	459	2,697	463	2,645
Boilers installed.....	21	1,125	17	1,019

Materials Used.—Materials used have been arranged under the three sections of this industry. Gold costing over a half million dollars in 1925 was the chief item on the list of materials used in the manufacture of dental supplies; precious metals and precious stones, together worth nearly 1.5 million dollars, were the more costly materials used in the jewellery section which consumed commodities worth \$2,403,253 in all; silver metal and nickel-silver base metal accounted for the larger part of the cost of materials used in the manufacture of silverware. For the whole precious metal products industry materials used cost \$3,991,106 or only slightly more than in the preceding year.

Table 74.—Materials Used in the Precious Metal Products Industry in Canada, 1924 and 1925

Material	Total cost at works	
	1924	1925
	\$	\$
DENTAL SUPPLIES SECTION, INCLUDING REFINING OF SCRAP		
Precious metals—		
Gold	528,044	519,455
Silver	34,508	47,874
Platinum	13,922	4,461
Other metals	10,454	3,191
Jewellers' waste and scrap	1,152	
Dental sundries	12,238	34,579
Base metals and alloys	19,571	11,484
Rouge and other polishes	29	
Other materials	11,691	5,281
Total	631,609	626,325
JEWELLERY, CLOCKS AND WATCHES SECTION		
Precious metals—		
Gold	563,391	632,663
Silver	208,252	166,154
Platinum	115,241	115,835
Base metals and alloys	144,428	119,725
Solder	2,041	4,082
Precious stones	626,065	595,956
Jewellers' findings	69,926	80,734
Crystals	26,794	14,278
Clock and watch springs	25,966	14,519
Jewels for watch movements	15,931	255
Wheels and other watch parts	52,554	38,417
Rouge and other polishes	4,095	6,415
Boxes, packing materials, etc.	41,216	45,418
All other materials	478,972	568,822
Total	2,374,872	2,403,253
SILVERWARE SECTION		
Precious metals—		
Gold	4,832	3,025
Silver	213,314	186,483
Base metals and alloys—		
Britannia metal, including blanks for plating	86,431	20,301
Nickel-silver, including blanks for plating	231,321	304,286
Cutlery steel	8,507	5,620
Cutlery steel, stainless	14,011	11,054
Brass and copper	3,898	4,397
Tin	31,691	67,043
Solder	2,336	2,531
Other base metals and alloys	22,732	3,170
Other materials—		
Celluloid and liners	3,396	2,722
Glassware and liners	39,906	27,255
Rouge and other polishes	13,163	12,864
Paper, boxes and packing materials	66,041	45,178
All other materials	193,700	265,599
Total	935,225	961,528
Total	3,941,706	3,991,106

Products.—Products have also been shown for each section of the industry. Refined gold, including dental gold, accounted for two-thirds of the entire production in the dental supplies section, which amounted to \$1,112,981 in 1925. Production of refined gold in the precious metals industry was considerably higher than in 1924 but the outputs of silver, platinum and gold leaf were lower than in the previous year. Production of jewellery increased 60 per cent in value to \$3,321,590 which together with clocks, watches, etc., worth 2 million dollars made a total output value of \$5,550,040 for this group. The output values of silver-plated hollowware, flatware and cutlery on Britannia metal base were higher than in 1924 as also was the value of cutlery plated on nickel-silver base. On the other hand, hollowware and flatware plated on nickel-silver showed appreciable declines from the 1924 value.

Table 75.—Products of the Precious Metal Products Industry in Canada, 1924 and 1925

Product	Selling value	
	1924	1925
	\$	\$
DENTAL SUPPLIES SECTION		
Refined metals—		
Gold, including dental gold.....	623,099	730,050
Silver.....	47,102	29,116
Platinum.....	70,776	7,000
Dental supplies (gases, teeth, bridges, etc.).....	105,829	140,612
Gold leaf.....	31,790	2,900
Alloys and gold filled wire.....	2,818	38,726
Job work and repairs.....	55,564	12,829
Other products.....	33,204	142,749
Total.....	970,181	1,112,981
JEWELLERY, CLOCKS AND WATCHES SECTION		
Alloys and gold-filled wire.....	7,332	1,500
Electro-silver-plated ware—		
(a) Hollowware.....	24,510	26,063
(b) Flatware.....	34,673	26,862
Jewellery.....	3,039,241	3,321,598
Watch cases.....	450,137	438,544
Clocks.....	484,860	404,245
Refined metals—		
Gold, including dental gold.....		8,375
Other metals.....		1,200
Sterling silver hollowware and flatware.....	356,970	357,294
Watches.....	109,234	231,297
Other products ¹	318,085	300,841
Repairs.....	437,203	431,320
Total.....	5,262,245	5,550,040
SILVERWARE SECTION		
Electro-silver-plated ware—		
(a) On Britannia metal—		
Hollowware.....	621,553	769,880
Flatware.....	270,855	393,239
Cutlery.....	136,696	300,086
(b) On nickel-silver—		
Hollowware.....	263,695	198,288
Flatware.....	837,521	737,224
Cutlery.....	401,788	58,512
Unplated nickel-silver flatware.....	87,913	85,153
Sterling silver hollowware and flatware.....	165,206	53,600
Cutlery of stainless steel.....	50,827	11,816
Cutlery, other, not plated.....	55,524	55,325
Casket hardware.....	21,573	19,351
Chinaware.....	58,010	15,112
Repairs and job work.....		22,232
Other products ²	159,691	99,514
Total.....	3,216,858	2,918,752
Total.....	9,449,284	9,581,773

¹Includes bronze tablets and castings, flannel rolls and other products.

²Includes paper cups, wax paper, and various other products.

The following information has been abstracted from the *Annual Report on the Mineral Production of Canada, 1925*.

Gold.—PRIMARY PRODUCTION.—Production of gold from all sources in Canada during the calendar year 1925 amounted to 1,735,735 fine ounces which at \$20·671834 per fine ounce, amounted in value to \$35,880,826. This marked an increase of 210,353 fine ounces or 13·7 per cent over the previous year and was the greatest production of gold recorded in any one year in the history of Canada.

Table 76.—Production of Gold in Canada, 1904-1925

Year	Fine ounces*	Value	Year	Fine ounces*	Value	Year	Fine ounces*	Value
		\$			\$			\$
1904	796,374	16,462,517	1912	611,885	12,648,794	1920	765,007	15,814,098
1905	684,951	14,159,195	1913	802,973	16,598,923	1921	926,329	19,148,920
1906	556,415	11,592,120	1914	773,178	15,983,007	1922	1,263,364	26,116,050
1907	405,517	8,382,780	1915	918,056	18,977,901	1923	1,233,341	25,495,421
1908	476,112	9,842,105	1916	930,492	19,234,976	1924	1,525,382	31,532,443
1909	453,805	9,382,230	1917	738,831	15,272,992	1925	1,735,735	35,880,826
1910	403,707	10,205,835	1918	699,681	14,463,689			
1911	473,159	9,781,077	1919	766,764	15,850,423			

*Calculated from the value: one dollar=0·048375 ounces.

IMPORTS AND EXPORTS.—Imports of gold, largely in the form of manufactures, were about the same as in the preceding year, but exports in the form of bullion in gold-bearing quartz, dust, nuggets, etc., obtained direct from mining operations, showed an increase over 1924 and amounted in value to \$31,432,647.

Table 77.—Imports into Canada and Exports of Gold, 1924 and 1925

Item	1924	1925
Imports—	\$	\$
Gold—		
Fringe	40,468	27,215
Coin and bullion—		
Gold coin	3,315,228	49,477,383
Gold bullion	924,644	1,031,597
Manufactures of gold and silver—		
Leaf	69,495	76,364
Sweepings	5,508	2,282
Manufactures, n.o.p.	142,008	147,839
Electroplated ware	604,500	707,726
Exports—		
Gold-bearing quartz, dust, nuggets and bullion obtained direct from mining operations	28,358,449	31,432,647
Gold bullion	6,988,633	333,090

Platinum.—PRIMARY PRODUCTION.—Metals of the platinum group in Canada are derived principally from the nickel-copper ores of the Sudbury district. Precious metals follow the copper and nickel through the smelting operations and are recovered at the various refineries. Small amounts of platinum are also obtained from certain alluvial sands in British Columbia.

Table 78.—Summary of Platinum Statistics, 1924 and 1925

Source	1924			1925	
	Platinum	Palladium	Rhodium, etc.	Platinum	Palladium
Produced by refineries in Canada or elsewhere from Canadian mattes and residues	Fine oz. 9,181 Value \$ 1,090,858	8,923 \$ 811,903	(a) 593 \$ 51,120	8,692 \$ 1,027,477	8,288 \$ 648,969
British Columbia placers	Fine oz. 5 Value \$ 569			6 \$ 715	
Canada	Fine oz. 9,186 Value \$ 1,091,427	8,923 \$ 811,903	593 \$ 51,120	8,698 \$ 1,028,192	8,288 \$ 648,969

(a) 367 oz. rhodium valued at \$27,500; 69 oz. osmium valued at \$4,924; and 78 oz. ruthenium valued at \$2,166; and 79 oz. iridium valued at \$16,590.

IMPORTS AND EXPORTS.—Imports and exports of platinum are small and consist mostly of forms used in the jewellery trade.

Table 79.—Imports into Canada and Exports of Platinum, 1924 and 1925

Item	1924		1925	
	Ounce	Value	Ounce	Value
IMPORTS—		\$		\$
Crucibles		11,567		39,685
Wire and bars, strips, sheets or plates		167,225		157,914
Retorts, pans, condensers, etc.		578		41,006
Total		179,371		238,605
EXPORTS—				
Jewellers' sweepings		344,074		322,205
Ores and concentrates	407	47,723	404	42,489
Old and scrap	237	24,372	655	76,423
Total		416,169		441,207

Table 80.—Monthly Average Prices of Platinum, 1924 and 1925

(From the Engineering and Mining Journal)
(In dollars per fine ounce.)

Month	1924	1925
	\$	\$
January	122-115	117-000
February	124-739	117-000
March	121-602	117-000
April	115-577	118-269
May	115-731	119-850
June	116-000	120-000
July	118-231	120-000
August	120-000	120-000
September	118-923	120-000
October	118-000	120-000
November	117-792	120-000
December	117-000	120-000
Average	118-817	119-093

Silver.—PRIMARY PRODUCTION.—Production of silver from Canadian ores during 1925 amounted to 20,228,988 fine ounces which, at the average price for the year of 69.065 cents per ounce, was valued at \$13,971,150 as against 19,736,323 fine ounces valued at \$13,180,113 in 1924 when the average price was 66.781 cents per ounce. This was an increase of 2.5 per cent in quantity and 6 per cent in value over the totals for 1924.

Table 81.—Production of Silver in Canada, by Provinces, 1904-1925*

Year	Quebec		Ontario		British Columbia		Yukon Territory	
	Fine ounce	Value	Fine ounce	Value	Fine ounce	Value	Fine ounce	Value
		\$		\$		\$		\$
1904	15,000	8,583	206,875	118,376	3,222,181	1,843,935	133,170	76,201
1905	19,620	11,841	2,451,356	1,479,442	3,139,417	2,075,757	89,630	54,093
1906	17,686	11,813	5,401,766	3,607,894	2,990,262	1,997,226	63,665	42,522
1907	16,000	10,452	9,982,363	6,521,178	2,745,448	1,793,519	35,988	23,510
1908	13,299	7,030	10,398,545	10,254,847	2,631,389	1,391,058	63,000	33,304
1909	13,233	6,815	24,822,099	12,781,126	2,649,141	1,364,387	45,000	23,176
1910	7,593	4,061	30,366,360	16,241,755	2,407,887	1,287,883	87,418	46,750
1911	18,435	9,827	30,540,754	16,270,443	1,887,147	1,005,924	112,708	60,078
1912	9,465	5,758	29,214,025	17,772,352	2,651,002	1,612,737	81,008	49,318
1913	34,573	20,672	28,411,261	16,987,377	3,312,343	1,980,463	87,626	52,392
1914	57,737	31,646	25,139,214	13,779,055	3,159,897	1,731,971	92,973	50,959
1915	63,450	31,524	22,748,609	11,302,419	3,595,852	1,771,658	248,049	123,241
1916	98,610	64,748	21,608,158	14,188,133	3,392,872	2,227,704	360,101	236,446
1917	136,194	110,885	19,301,835	15,714,975	2,655,994	2,162,430	119,605	97,379
1918	178,675	172,907	17,198,737	16,643,552	3,921,336	3,794,755	71,915	69,594
1919	140,026	156,680	12,117,878	13,465,628	3,713,547	4,126,556	27,556	30,621
1920	61,003	61,552	9,907,620	9,990,705	3,327,028	3,356,971	19,190	19,363
1921	38,084	23,861	9,701,607	9,116,047	3,350,357	2,099,133	393,092	246,288
1922			10,811,903	7,300,305	7,150,937	4,828,384	663,403	447,997
1923	33,006	21,412	10,540,943	6,838,226	6,113,327	3,965,899	1,914,438	1,241,953
1924	83,814	55,972	11,272,567	7,527,933	8,153,003	5,444,657	226,755	151,429
1925	214,943	148,451	10,529,131	7,271,944	8,579,458	5,925,403	904,893	624,964

*Does not include small production from New Brunswick, Alberta, and Manitoba in 1917, from Manitoba from 1918 to 1924 and from Nova Scotia and Manitoba, in 1923 and 1924.

Imports and Exports.—Imports of silver in the form of bullion, coins and sterling were higher than in 1924 and exports in the form of ore, concentrates and bullion were also a little higher in value than in the preceding year.

Table 82.—Imports into Canada and Exports of Silver, 1924 and 1925

Item	1924	1925
IMPORTS—		
Silver—	\$	\$
Bullions in bars and blocks.....	665,280	1,025,109
Coins.....	1,275	61
Sterling.....	209,430	210,384
Manufacture of gold and silver—		
Leaf.....	69,495	76,364
Sweepings.....	5,508	2,282
Manufactures, n.o.p.....	142,008	147,839
Electroplated ware.....	604,500	707,726
EXPORTS—		
In ore, concentrates, bullion.....	12,082,954	12,882,637
Silver coin.....	50	2,089

Table 83.—Monthly Average Prices of Silver, 1924 and 1925

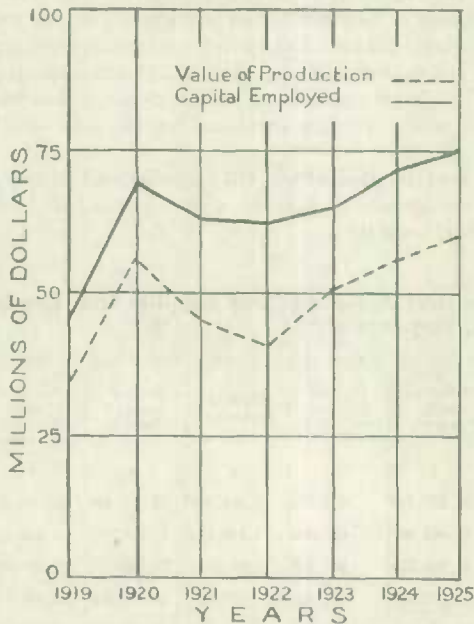
(From the *Engineering and Mining Journal*)

Month	New York (Cents per fine ounce)		London (Pence per standard ounce)	
	1924	1925	1924	1925
January.....	63.447	68.447	33.549	32.197
February.....	64.359	68.472	33.565	32.245
March.....	63.957	67.808	33.483	31.935
April.....	64.139	66.899	33.065	31.372
May.....	65.524	67.580	33.870	31.276
June.....	66.690	69.106	34.758	31.863
July.....	67.159	69.442	34.509	31.954
August.....	68.519	70.240	34.213	32.268
September.....	69.350	71.570	34.832	32.983
October.....	70.827	71.106	35.387	32.972
November.....	69.299	69.223	33.775	32.155
December.....	68.096	68.889	32.620	31.835
Average.....	66.781	69.063	33.969	32.088

CHAPTER SIX

ELECTRICAL APPARATUS AND SUPPLIES

General.—The electrical industry in Canada includes all firms engaged in the manufacture of apparatus and supplies used in the transmission, generation and utilization of electrical energy. Due to increased power developments and the greater use of electrical equipment and to the increasing popularity of radio, the industry has shown a steady growth during the last 4 years,

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and, in 1925, attained a record production. In that year there were 122 firms in Canada engaged principally in the production of electrical equipment. These firms had a working capital of over 75 million dollars, gave employment to 14,112 persons and produced electrical apparatus having a selling value of \$60,158,837. Active plants were distributed as follows: 19 in Quebec, 91 in Ontario, 5 in Manitoba, 4 in Alberta, 2 in British Columbia and 1 in New Brunswick.

The industry is centred in Ontario; the 91 plants in that province produced commodities worth \$40,952,860 or about two-thirds of the total for the Dominion. Concerns in Quebec manufactured goods valued at \$18,568,118 and Manitoba, Alberta, British Columbia and New Brunswick were represented with plants in this industry. Comparison with the previous year shows that there were 13 more plants in operation during 1925, production was higher by 3.6 million dollars, capital employed was up 3 million dollars and the number of persons employed showed a substantial increase over the corresponding number for 1924.

Radio Apparatus.—Production in Canada of radio apparatus including sets, parts and batteries reached a total value of \$6,575,740 in 1925. Six plants in Canada were engaged solely in the manufacture of radio sets or parts, 9 other concerns made sets and parts in conjunction with the manufacture of other electrical apparatus and 12 of the manufacturers of batteries in Canada reported an output for radio purposes.

Statistics for 1925 show a substantial growth in the radio industry during that year and also reveal a tendency toward the production of complete sets rather than in the manufacture of separate parts. In 1925, the number of complete sets manufactured by these companies was 48,531 and the selling value, f.o.b., works was given as \$2,278,252. Production of vacuum tubes amounted in value to \$1,299,684 and was double that of the previous year; output values of all other parts were lower than in 1924.

Imports of wireless apparatus and parts into Canada totalled \$3,552,537 during the calendar year 1925. United States supplied \$3,358,196 worth of these materials. As exports were practically negligible the apparent consumption of radio apparatus in Canada, obtained by adding the imports to production, reached a grand total of \$9,101,196.

Radio licences were issued by the Department of Marine and Fisheries during the twelve months ending March, 1926, to 134,486 persons. Ontario led all provinces with a total of 60,110; Quebec was next with 21,141. Registrations in the other areas were as follows: Saskatchewan, 15,944; Manitoba, 14,503; British Columbia, 9,494; Alberta, 7,152; Nova Scotia, 3,288; New

Brunswick, 2,612; Prince Edward Island, 202; Yukon, 23; and the Northwest Territories, 17. Licensed broadcasting stations, not including amateurs, numbered 55 distributed as follows: Ontario, 24; British Columbia, 10; Saskatchewan, 7; Alberta, 6; Quebec, 4; Manitoba, 2; New Brunswick and Prince Edward Island 1 each.

Batteries.—Production of storage and dry cell batteries in Canada amounted in value to \$6,832,509. The 16 plants in Canada manufacturing storage or dry cell batteries represented a capital investment of \$6,940,670, and gave employment to an average of 1,155 workers throughout the year. Expenditures for raw materials totalled \$3,377,155 and payments in salaries and wages during the year amounted to \$1,330,880. Of the producing companies, 16 in number, 6 had a production valued in excess of half a million dollars; 2 others each exceeded the quarter million mark; 2 more were each above \$100,000, and 6 were below this mark.

Storage batteries were made in 14 different establishments; the total production was valued at \$3,646,405. The output included \$481,237 worth of batteries for radio purposes; \$2,870,097 worth for automobiles and internal combustion engines; and \$254,930 worth for other purposes such as farm plant lighting, etc. Production of dry cell batteries amounted to 26,879,456 individual cells valued at \$3,186,104. Only 4 plants in Canada produced dry cells in 1925 and the output included cells for radio, flashlight and other purposes. Battery parts and supplies were worth \$53,759.

Imports of batteries during the calendar year totalled \$1,064,445 in value and included 23,796 storage batteries worth \$1,026,093 and primary electric batteries valued at \$38,352. Exports are not separately shown in the trade report classification.

Table 84.—Summary Statistics of the Electrical Apparatus and Supplies Industry in Canada, 1921-1925

Year	Number of plants	Capital employed	Number of employees	Salaries and wages	Cost of fuel and *electricity	Cost of materials	Selling value of products	Value added by manufacturing
		\$		\$	\$	\$	\$	\$
1921.....	100	63,699,530	10,610	13,555,712	637,749	19,438,688	45,093,591	25,654,903
1922.....	101	62,436,282	10,630	12,162,607	626,334	17,546,830	41,208,368	23,661,529
1923.....	108	65,077,942	13,268	14,991,550	954,987	26,257,361	51,360,400	25,103,039
1924.....	109	72,301,204	13,670	16,089,492	884,808	24,370,996	56,490,465	32,119,169
1925.....	122	75,375,623	14,112	16,472,357	953,478	25,434,836	60,158,837	34,724,001

*Electricity not included in 1921 and 1922.

Table 85.—Principal Statistics of the Electrical Apparatus and Supplies Industry in Canada, by Provinces, 1924 and 1925

Province	1924				1925			
	Number of plants	Number of employees	Salaries and wages	Selling value of products	Number of plants	Number of employees	Salaries and wages	Selling value of products
			\$	\$			\$	\$
Quebec.....	13	4,574	5,005,066	15,300,028	19	5,104	6,443,677	18,568,118
Ontario.....	87	8,992	10,340,488	40,733,382	91	8,868	9,862,246	40,952,860
Manitoba.....	4	63	87,581	292,647	5	75	99,338	424,498
Alberta.....	3	15	18,712	69,306	4	16	19,334	32,782
Canada*	109	13,670	16,089,492	55,499,465	122	14,112	16,472,357	60,158,837

*Includes also data for 1 plant in New Brunswick and 2 in British Columbia.

Capital Employed.—Capital employed in the plants producing electrical apparatus and supplies in 1925 was 3 million dollars above the figure for 1924 and amounted to \$75,375,623. Investment in lands, buildings and equipment rose to \$37,900,484 from \$36,886,391 in 1924; the value of inventories decreased about half a million to \$19,391,557; and cash, trading and operating accounts at \$18,083,582 was 2.5 millions greater than in the preceding year. Plants in Ontario represented a capital of 53.6 million dollars, Quebec's plants accounted for 21.3 million dollars, Manitoba \$330,678, Alberta \$42,019 and smaller amounts for British Columbia and New Brunswick.

Table 86.—Capital Employed in the Electrical Apparatus and Supplies Industry in Canada, by Provinces, 1924 and 1925

Province	1924				1925			
	Capital employed as represented by				Capital employed as represented by			
	Lands, buildings, fixtures, machinery and tools	Materials on hand, and stocks in process	Cash, trading and operating accounts	Total	Lands, buildings, fixtures, machinery and tools	Materials, on hand, and stocks in process	Cash, trading and operating accounts	Total
	\$	\$	\$	\$	\$	\$	\$	\$
Quebec	10,770,906	6,318,323	2,361,153	19,450,382	11,414,928	6,418,182	3,500,382	21,333,492
Ontario	26,005,211	13,303,118	13,182,013	52,490,372	26,343,716	12,784,502	14,435,355	53,563,573
Manitoba	74,507	89,802	102,251	266,560	78,829	134,751	117,098	330,678
Alberta	15,767	17,570	4,583	37,920	17,241	19,065	5,713	42,019
Canada*	36,886,391	19,736,532	15,658,281	72,301,204	37,900,484	19,391,557	18,083,582	75,375,623

*Includes figures for 2 firms in British Columbia and 1 in New Brunswick.

Employment.—Manufacturers of electrical supplies employed an average of 14,112 people during 1925 and distributed \$16,472,357 in salaries and wages. In the previous year 13,670 persons received \$16,089,492 in salaries and wages.

As indicated by the monthly records the industry showed a seasonal trend and employment fell off slightly during the summer months. In January, there was a total of 11,329 wage-earners employed, and this number gradually declined until in April there were 10,192 names on the rolls. Employment then remained fairly steady until August after which industrial conditions improved and the year closed with 11,723 wage-earners employed.

Of the total number of persons employed in this industry 8,868 worked in Ontario plants, 5,104 in Quebec, 75 in Manitoba and 16 in Alberta.

Table 87.—Average Number of Employees, Salaries and Wages Paid in the Electrical Apparatus and Supplies Industry in Canada, by Provinces, 1924 and 1925

Province	Average number of employees					Salaries and wages		
	Salaried employees		Wage-earners		Total	Salaries	Wages	Tot ..
	Male	Female	Male	Female				
1924						\$	\$	\$
Quebec	856	276	2,308	1,134	4,574	1,950,342	3,654,718	5,605,060
Ontario	1,379	501	5,096	1,416	8,992	3,315,210	7,025,278	10,340,488
Manitoba	15	2	42	4	63	42,186	45,395	87,581
Alberta	8	.....	10	.....	15	8,700	10,012	18,712
Canada*	2,361	779	8,076	2,554	13,670	5,329,878	10,739,614	16,069,492
1925								
Quebec	959	292	2,713	1,140	5,104	2,228,732	4,214,915	6,443,677
Ontario	1,386	530	5,402	1,550	8,868	3,356,722	6,505,524	9,862,246
Manitoba	17	2	52	4	75	39,523	59,815	99,338
Alberta	6	.....	11	.....	16	8,700	10,634	19,334
Canada*	2,374	826	8,286	2,706	14,112	5,648,877	10,823,489	16,472,357

*Includes also data for 1 plant in New Brunswick and 2 in British Columbia.

Table 88.—Number of Wage-Earners Employed in the Electrical Apparatus and Supplies Industry in Canada, by Months, 1924 and 1925

Month	1924			1925		
	Male	Female	Total	Male	Female	Total
January.....	7,933	2,605	10,538	8,460	2,869	11,329
February.....	8,050	2,568	10,618	8,077	2,572	10,649
March.....	8,198	2,587	10,785	7,944	2,478	10,422
April.....	8,216	2,408	10,714	7,806	2,386	10,192
May.....	8,160	2,404	10,564	7,894	2,363	10,257
June.....	7,996	2,329	10,325	7,904	2,370	10,274
July.....	7,762	2,281	10,046	7,872	2,422	10,294
August.....	7,706	2,310	10,016	7,972	2,632	10,604
September.....	7,769	2,414	10,183	8,309	2,967	11,276
October.....	8,143	2,576	10,719	8,673	3,182	11,855
November.....	8,315	2,776	11,121	8,765	3,072	11,837
December.....	8,469	2,936	11,405	8,756	2,967	11,723
Average.....	8,076	2,554	10,630	8,206	2,706	10,912

Table 89.—Hours of Labour (In Month of Greatest Employment) in the Electrical Apparatus and Supplies Industry in Canada, by Provinces, 1925

Month	Number of wage-earners working				Hours worked per man per week when working			
	8 hours or less per day	9 hours	10 hours	Over 10 hours	8 hours or less per day	9 hours	10 hours	Over 10 hours
New Brunswick.....				17				72
Quebec.....	3,142	1,024	53	29	45	50	63	79
Ontario.....	3,735	3,821	414	202	44	52	61	77
Manitoba.....	29	42			41	51		
Alberta.....	6	8			47	54		
British Columbia.....	31				43			

Table 90.—Power Employed in the Electrical Apparatus and Supplies Industry in Canada, 1924 and 1925

Description	1924		1925	
	Number of units	Total h.p. according to manufacturers' rating	Number of units	Total h.p. according to manufacturers' rating
Steam engines and turbines.....	8	6,210	7	6,085
Gas engines.....	5	33	4	8
Oil and gasoline engines.....			1	5
Hydraulic turbines or waterwheels.....	7	3,100	7	4,400
Total primary power.....	20	9,343	19	10,498
Electric motors operated by purchased power.....	2,298	24,530	2,488	27,229
Total power employed.....	2,318	33,873	2,507	37,727
Electric motors operated by power generated by the industry.....	1,659	11,326	1,591	10,408
Total electric motors.....	3,957	35,856	4,079	37,637
Boilers installed.....	76	10,587	58	9,656

Table 91.—Fuel and Electricity Used in the Electrical Apparatus and Supplies Industry in Canada, 1924 and 1925

Kind	Unit of measure	1924		1925	
		Quantity	Value	Quantity	Value
		No.	\$	No.	\$
Anthracite coal.....	short ton	1,971	23,342	1,048	2,270
Bituminous coal.....	short ton	57,818	342,972	59,943	353,020
Lignite coal.....	short ton	20	250		
Coke.....	short ton	2,324	21,512	915	9,961
Fuel oil.....	gallon	891,421	73,052	877,072	70,461
Gasoline.....	gallon	36,075	9,358	56,904	14,003
Gas.....	M. cu. ft.	91,727	91,301	129,988	94,754
Wood.....	cord	646	1,364	65	691
Other fuel.....			2,378		2,248
Electric power.....	k.w.h.	20,648,602	315,349	30,581,141	385,604
Total			881,808		952,478

Materials Used.—Firms in the electrical industry used \$25,434,836 worth of purchased materials which were advanced in value by 137 per cent by the manufacturing processes. Altogether, the industry consumed in the form of pigs, castings, rods, etc., 28,885 tons of iron and steel, 19,750 tons of brass and copper, 8,210 tons of lead, 1,190 tons of zinc, 220 tons of aluminium, and various miscellaneous materials which are shown in detail in the accompanying table.

In addition to the above, 62,836 tons of coal and coke, 933,976 gallons of gasoline and fuel oil, 130 million cubic feet of gas, 65 cords of wood, and \$385,604 worth of electricity were used for heat and power purposes.

Table 92.—Materials Used in the Electrical Apparatus and Supplies Industry in Canada 1924 and 1925

Material	Unit of measure	1924		1925	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Iron—					
Pig and scrap.....	ton	5,048	131,105	2,356	51,192
Iron castings purchased.....	ton	5,463	897,830	3,047	539,581
Steel castings, punchings and forgings purchased.....	ton	17,329	1,881,306	23,482	1,817,154
Iron and steel rods, bars, tubes, pipes, sheets and wire.....	ton				
Copper—					
Pig and scrap.....	lb.	597,340	74,595	726,357	110,717
Brass and copper castings and punchings purchased.....	lb.	436,925	148,070	3,513,371	138,663
Brass and copper rods, bars, tubes, pipe, sheets and wire.....	lb.	32,407,068	5,317,730	35,254,095	5,808,707
Aluminium—					
Pig and scrap.....	lb.	94,462	31,262	116,710	34,940
Castings purchased.....	lb.	216,982	98,000	200,159	105,928
Rods, bars, tubes, sheets and wire.....	lb.	68,456	39,301	129,689	41,327
Lead—					
Pig and scrap.....	lb.	14,265,031	1,105,658	14,191,922	1,331,285
Sheets, bars and tubes.....	lb.	1,080,595	151,055	2,113,110	315,670
Magnesium: bars, sheets and wire.....	lb.	13,600	8,001	11,541	5,423
Manganese.....			8,655		
Zinc—					
Pig.....	lb.	82,763	6,725	1,300,098	147,030
Bars, sheets and wire.....	lb.	1,392,308	160,667	1,086,318	131,579
Resistance wire.....	lb.	517,137	44,913	1,488,514	63,520
Carbon for brushes, electrodes, etc.....	lb.	2,950,282	184,051		180,396
Mica.....	lb.	113,690	148,951	63,107	63,040
Glass and porcelain.....			877,420		833,384
Rubber crude.....	lb.	435,507	123,136	261,341	373,097
Rubber reclaimed or compounded.....	lb.	1,275,351	114,067		162,848
Cotton and linen yarns, sheets, tapes and webbings.....			947,314		998,725
Insulating paints, varnishes, japans, shellacs and lacquers.....			214,262		281,113
Insulating waxes.....	lb.	1,731,138	157,256	2,506,692	129,214
Insulating materials not otherwise specified.....			952,415		805,102
Clays and marls.....	lb.	5,238,000	86,320	1,824,900	10,348
Tungsten, crude or finished.....	metre	4,518,476	88,865	9,883,953	150,179
Nitrogen and argon gas.....	cu. ft.	390,239	25,395		22,941
Copper sulphate.....	lb.	876	89	847	73
Sulphuric acid (66° Bé).....	lb.	1,549,061	32,881	1,641,455	32,791
Ammonium chloride (sal-ammoniac).....	lb.	686,941	42,863	913,845	54,334
Chemicals and acids not otherwise specified.....			283,899		120,975
Electrical apparatus or parts purchased not otherwise specified.....			1,851,772		2,163,443
Electrical supplies or parts purchased, not otherwise specified.....			1,168,789		2,419,992
Shipping containers and packing material.....			713,140		839,713
All other materials.....			6,218,356		5,018,472
Total			24,370,996		25,434,836

Products.—The total output of electrical equipment in Canada in 1925 was valued at \$60,158,837 or 6.5 per cent above the production value of the previous year. The more important products of the industry included 7.8 million dollars' worth of telephone material; about 11 million dollars' worth of copper wire and cable; alternating current generators, with a selling value of 2.7 million dollars; incandescent lamps worth 3.3 million dollars; 4.3 million dollars' worth of radio apparatus; 1.5 million dollars' worth of vacuum cleaners; and to a less extent, meters of all kinds, lighting fixtures, and domestic appliances of various kinds.

Table 93.—Products Made in the Electrical Apparatus and Supplies Industry in Canada, 1924 and 1925

Product	1924			1925		
	Number	Total rating	Selling value, boxed, f.o.b. works	Number	Total rating	Selling value, boxed, f.o.b. works
Alternating current generators.....	156	518,995 k.w.	\$ 4,843,053	174	356,687	\$ 2,741,294
Annunciators, bells, clocks, time recorders, flashers, signalling apparatus.....			8,621			33,603
Alternating current motors—						
Stationary, for power purposes, including control equipment.....	4,697	82,025 h.p.	1,484,002	3,446	54,743 h.p.	1,116,837
Traction, including control equipment and other accessories.....	32	1,120 h.p.	10,976	1,938	41,748 h.p.	1,030,647
Fractional horse power, for domestic and utility appliances.....	21,110	3,923 h.p.	306,150	26,396		436,125
Any types not elsewhere reported, including control equipment and other accessories.....				2	550 h.p.	12,175
Parts and supplies for same.....			341,826			337,196
Batteries—						
Storage for radio:.....						
“A” type for filament lighting.....				32,376		367,480
“B” type for plate supply.....				12,889		165,388
Storage, for internal combustion engine starting and ignition.....	205,069		2,690,627	238,316		2,857,547
Storage, for all other purposes.....			188,947	13,913		255,990
Primary dry cell type for radio.....	15,759,843		2,101,395	19,711,607		1,705,301
Primary dry cell type for all other purposes.....				17,607,154		1,480,803
Any other type.....			175,636			
Parts and supplies.....			65,130			53,759
Baking, tempering and enamelling ovens.....	13	225 k.w.	10,497	12		4,067
Carbon products, including furnace electrodes and generator and motor brushes.....						99,25
Controllers, rheostats, auto-starters, exclusive of any reported with generators and motors or on switch boards.....			20,135			31,774
Cooking and heating apparatus—						
Flat irons.....	77,911		215,629	104,942		341,451
Stoves and ranges.....	8,775		613,188	11,004		474,337
Water heaters and air heaters.....	27,715		205,066	32,980		296,817
Domestic and commercial utility devices not elsewhere reported.....			266,348			253,935
Direct current generators.....	39	797 k.w.	50,395	34	343 k.w.	17,525
Direct current motors—						
All kinds, including control equipment.....	644	10,742 h.p.	612,151	450	5,099 h.p.	297,604
Parts and supplies for same.....			104,509			120,008
Electro-metallurgical muffles and furnaces, with actuating and control equipment and accessories.....			26,320			26,550
Electric-therapeutic apparatus.....			39,050			24,389
Fans, electric.....	1,012		33,070	2,021		51,479
Fuses and fuse wire.....			188,004			252,282
Incandescent lamps—						
Regular, carbon, all other classes.....	307,247		73,390	185,028		41,906
Regular, tungsten, vacuum, for street series lighting.....	11,410		4,611	889,329		162,254
Regular, tungsten, vacuum, all other classes.....	6,924,591		1,460,024	7,382,642		1,556,310
Regular, tungsten, gas filled for street lighting.....	289,750		216,616	427,476		209,706
Regular, tungsten gas filled, all other classes.....	1,917,846		1,058,004	1,830,310		950,597
Automobile, decorative, miniature, and any others not elsewhere reported.....	2,188,419		390,570	2,345,610		356,814
Bulbs, bases, or other parts.....			38,175			4,250
Instruments—						
Ammeters, voltmeters, wattmeters, watt-hour meters, etc., portable type, including accompanying transformers.....			27,339			13,425
Ammeters, voltmeters, wattmeters, watt-hour meters, etc., switch board type, including accompanying transformers.....			19,753			20,289

Table 93.—Products Made in the Electrical Apparatus and Supplies Industry in Canada, 1924 and 1925—Concluded

Product	1924			1925		
	Number	Total rating	Selling value, boxed, f.o.b. works	Number	Total rating	Selling value, boxed, f.o.b. works
Interior conduit and moulding, and fittings for same			\$ 709,314			\$ 721,912
Knobs, cleats, tubes, bushings, wiring insulators			70,083			108,021
Lighting fixtures			920,183			1,224,630
Lightning arresters			98,583			133,559
Line material—						
Light and power, excluding line insulators			376,378			405,715
Telegraph and telephone, excluding line insulators			132,000			130,000
Overhead trolley			45,562			50,665
Line insulators, glass, porcelain, and composition			423,599			120
Meters, gas and water	27,627		372,426	23,082		304,691
Motor-generator sets, dynamotors, rotary converters, double current generators, balancer sets, boosters	63	11,384 k.w.	291,170	60	6,495 k.w.	211,470
Parts and supplies for same			76,089			4,158
Panel boards and cabinets			236,295			228,335
Radio apparatus and supplies—						
Aerial material (wire, insulators, ground clamps, lightning arresters, spreaders)			1,242,505			
Condensers			78,622			41,626
Coils and couplers			15,445			1,017
Panels and parts (switches, dials, knobs, binding posts, keys, sockets)			205,821			88,103
Rheostats and resistances			12,963			918
Telephones (head sets, loud speakers, microphones)			429,021			412,556
Transformers			80,229			36,816
Vacuum tubes			696,151	940,356		1,299,684
Apparatus or parts not elsewhere reported			215,246			178,560
Receiving and transmitting sets, complete			225,000	48,531		2,278,202
Rectifiers for storage battery charging—all types	5,953		13,286	4,089		61,013
Parts and supplies for same			2,878			450
Searchlights, projectors, focussing lamps, headlights			46,856			43,024
Switch boards, light and power			1,898,456			1,895,281
Sockets, receptacles, rosottes, attaching plugs, cutouts			1,196,322			819,298
Switches, all kinds, with plates and other fittings and accessories			305,506			1,146,229
Telephone material, including switch boards, telephones transmitters, receivers, parts and supplies			6,462,778			7,771,933
Transformers—						
Power and service, types, including oil, fuse boxes, etc.—						
50 k.w. and over	2,971	1,024,230 k.w.	3,295,959	2,739		1,694,100
Under 50 k.w.	3,467	41,110 k.w.	434,304	7,704		1,813,374
All other types, including feeder regulators, auto-transformers, etc.			302,839			177,363
Vacuum cleaners	36,429		1,286,845	44,441		1,543,560
Vacuum tubes, X-Ray tubes, glowler lamps, vapour lamps, etc.			44,170			58,038
Watt-hour meters, service type, including any accompanying transformers and other accessories	98,068		1,141,234	90,626		908,129
Washers, floor polishers, refrigerating equipment, and other domestic and utility small motor appliances not elsewhere reported			137,539			119,394
Welding apparatus, with control equipment and accessories	6		18,688	36		38,200
Wires and cables—						
Copper, bare			2,673,449			2,609,710
Copper, insulated			7,176,673			8,336,216
Aluminium, bare						17,202
Wiring material and sundries not elsewhere reported			272,173			50,926
Scrap			112,519			151,469
*Any electrical apparatus or supplies not reported elsewhere			1,312,375			1,011,538
Any other apparatus or supplies not reported elsewhere			1,172,684			336,578
Any repair parts not reported elsewhere, and repairs			735,038			672,790
Pneumatic tools and parts			1,515,302			1,221,002
Total			56,499,465			60,158,837

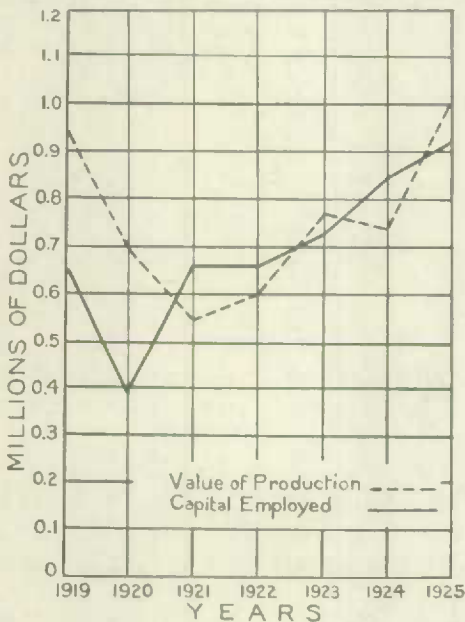
*Includes carbon brushes, spark plugs and other products.

CHAPTER SEVEN

MISCELLANEOUS NON-FERROUS METAL PRODUCTS

General.—This industrial group includes those firms in Canada which manufacture as major products such commodities as lamps, lanterns, lamp and lantern burners, weatherstripping, gasoline irons and stoves and similar products, which do not naturally fall into any of the other groups. Most of the firms in this industry are small but the demand for their goods is steady and the quantity produced annually is fairly constant.

MISCELLANEOUS NON-FERROUS METAL PRODUCTS INDUSTRY



Of the 17 firms listed in the miscellaneous non-ferrous metal products group in 1925, there were 12 located in Ontario, 4 in Quebec and 1 in Manitoba. These plants represented a capital investment in Canada of \$919,733 and employed each month an average of 233 people to whom a total of \$313,145 were paid in salaries and wages during the year. By the manufacturing processes these factories added \$652,759 to the value of purchased materials which cost \$346,518. Production during 1925 reached a new high value for the industry at \$999,277 which was 35 per cent above the output value of \$741,066 reported for the preceding year and 6 per cent above the previous record of \$940,034 established in 1919.

Plants in Ontario produced goods worth \$916,772 while establishments in Quebec made \$81,305 worth of commodities for sale; Manitoba also was represented in this industrial group. During the year 1 new concern in Quebec and 1 in Ontario was added to the Bureau's list of operating plants.

In 1925, there were 9 firms producing weatherstripping only, while 2 other concerns made weatherstripping of all kinds and also small quantities of screens, ventilators, metal tags, etc. One plant produced mine lamps only; another made lamp standards and shades; another made lampburners and lanterns; 1 concern produced gasoline lamps, irons and stoves and gas mantles; while 1 concern made railway and marine lamps, lanterns, car heaters and similar products.

Six of the concerns in this group employed only 1 man the year round; 6 others each gave work to fewer than 10 people; 2 concerns each employed between 10 and 25 persons, while only 3 firms gave work to more than 25 employees. Two plants each showed a production valued at more than \$100,000; output values reported by 2 other concerns exceeded \$50,000 each; 2 others each exceeded \$25,000 in value; 3 others were each above the \$10,000 mark, while 8 were below the latter figure.

Table 94.—Summary Statistics of the Miscellaneous Non-Ferrous Metal Goods Industry in Canada, 1921-1925

Year	Number of plants	Capital employed	Number of employees	Salaries	Wages	Cost of fuel and electricity	Cost of materials	Selling value of products	Value added by manufacturing
		\$		\$	\$	\$	\$	\$	\$
1921	18	665,481	162	80,919	138,740	1,894	250,596	557,420	306,824
1922	16	663,070	169	59,614	138,604	4,821	236,797	607,567	370,770
1923	16	739,457	196	87,372	164,484	6,495	269,557	773,556	503,999
1924	16	853,248	202	100,794	168,029	5,302	322,001	741,066	419,065
1925	17	919,733	233	112,700	200,445	6,378	346,518	999,277	652,759

*Electricity not included in 1921 and 1922.

Table 95.—Principal Statistics of the Miscellaneous Non-Ferrous Metal Goods Industry in Canada, by Provinces, 1924 and 1925

Province	1924				1925			
	Number of plants	Number of employees	Salaries and wages	Selling value of products	Number of plants	Number of employees	Salaries and wages	Selling value of products
Quebec.....	2		\$	\$	4	37	\$ 53,160	\$ 81,305
Ontario.....	13	177	226,398	692,120	12	106	259,985	916,772
Canada*	16	202	268,823	741,066	17	233	313,145	999,277

*Includes also data for 1 plant in Manitoba.

Capital Employed.—Capital employed in the miscellaneous non-ferrous metal products group in 1925, amounted to \$919,733 of which \$793,680 was invested in plants in Ontario. Lands, buildings, machinery and tools were valued at \$472,242; the value placed on materials on hand and stocks in process was \$224,599 and the cash, trading, operating accounts and bills receivable amounted in value to \$222,892.

Table 96.—Capital Employed in the Miscellaneous Non-Ferrous Metal Goods Industry in Canada, by Provinces, 1924 and 1925

Province	1924				1925			
	Capital employed as represented by				Capital employed as represented by			
	Lands, buildings, fixtures, machinery and tools	Materials on hand, and stocks in process	Cash, trading and operating accounts	Total	Lands, buildings, fixtures, machinery and tools	Materials on hand, and stocks in process	Cash, trading and operating accounts	Total
Quebec.....	\$	\$	\$	\$	\$	\$	\$	\$
Ontario.....	374,086	195,967	163,632	733,685	60,757	29,975	34,331	125,063
					410,835	194,544	188,311	793,680
Canada*	432,491	229,752	191,065	853,308	472,242	224,599	222,892	919,733

*Includes also data for 1 plant in Manitoba.

Employment.—Plants in this group employed 46 salaried employees, and 187 wage-earners throughout the year and paid out \$313,145 in salaries and wages. In the previous year, 42 salaried employees and 160 wage-earners received \$268,823 in salaries and wages.

As indicated by the monthly records of employment, the industry showed steady improvement during the year. In January, there were 166 wage-earners on the rolls of the various companies and this number increased gradually to 186 in August, 211 in October, and 226 in December; the average for the year was 187.

Plants in Ontario employed an average of 196 employees or 84 per cent of the total for Canada.

Table 97.—Average Number of Employees, Salaries and Wages Paid in the Miscellaneous Non-Ferrous Metal Products Industry in Canada, by Provinces, 1924 and 1925

Province	Average number of employees					Salaries and wages		
	Salaried employees		Wage-earners		Total	Salaries	Wages	Total
	Male	Female	Male	Female				
1924						\$	\$	\$
Quebec.....	5	2	18		25	23,335	19,090	42,425
Ontario.....	33	2	94	48	177	77,459	148,939	226,398
Canada	38	4	112	48	202	100,794	168,029	268,823
1925								
Quebec.....	8	2	27		37	28,027	25,133	53,160
Ontario.....	34	2	105	55	196	84,673	175,312	259,985
Canada	42	4	132	55	233	112,700	200,445	313,145

Table 98.—Number of Wage-Earners Employed in the Miscellaneous Non-Ferrous Metal Products Industry in Canada, by Months, 1924 and 1925

Month	1924			1925		
	Male	Female	Total	Male	Female	Total
January.....	113	44	157	122	44	166
February.....	112	45	157	112	45	157
March.....	109	41	150	112	46	158
April.....	109	41	150	115	44	159
May.....	106	44	150	122	44	166
June.....	103	42	145	125	46	171
July.....	107	42	149	126	47	173
August.....	105	45	150	131	55	186
September.....	109	51	160	132	63	195
October.....	123	61	184	138	73	211
November.....	123	63	186	146	77	223
December.....	122	63	185	146	80	226
Average.....	112	48	160	132	55	187

Table 99.—Hours of Labour (In Month of Greatest Employment) in the Miscellaneous Non-Ferrous Metal Products Industry in Canada, by Provinces, 1925

Province	Number of wage-earners working				Hours worked per man per week when working			
	8 hours or less per day	9 hours	10 hours	Over 10 hours	8 hours or less per day	9 hours	10 hours	Over 10 hours
Quebec.....	2	7	25	.....	44	49	55	.....
Ontario.....	68	115	12	12	45	50	60	71
Manitoba.....	1	.....	.....	.....	44	.....	.....	.....

Table 100.—Fuel and Electricity Used in the Miscellaneous Non-Ferrous Metal Products Industry in Canada, 1924 and 1925

Kind	Unit of measure	1924		1925	
		Quantity	Value	Quantity	Value
		No.	\$	No.	\$
Anthracite coal.....	short ton	20	310	52	302
Bituminous coal.....	short ton	336	2,351	429	2,894
Coke.....	short ton	.....	.....	5	25
Gasoline.....	gallon	.....	.....	316	358
Gas.....	M. cu. ft.	399	423	201	231
Wood.....	cord	6	32	1	8
Electric power.....	k.w.h.	128,700	2,186	154,826	2,560
Total.....			5,302		6,378

Table 101.—Power Employed in the Miscellaneous Non-Ferrous Metal Products Industry in Canada, 1924 and 1925

Description	1924		1925	
	Number of units	Total h.p. according to manufacturers' rating	Number of units	Total h.p. according to manufacturers' rating
Electric motors operated by purchased power.....	25	148	29	417
Total power employed.....	25	148	29	417
Total electric motors.....	25	148	29	417
Boilers installed.....	.....	.....	2	150

Materials Used.—Materials used in this industry included quite a variety of articles which are shown in detail in the table below.

Table 102.—Materials Used in the Miscellaneous Non-Ferrous Metal Products Industry in Canada, 1924 and 1925

Material	Unit of measure	1924		1925	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Alloyed metals.....			97,915		
Brass and bronze.....			18,530		25,714
Fringes, tassels, cords, etc.....			55,479		30,921
Iron, galvanised.....	lb.	9,767	550	12,823	784
Iron, n.e.s.....			2,187		2,685
Lenses.....	pieces.		1,783	9,428	3,130
Lumber.....			19,108		6,419
Metal stampings.....	lb.	11,300	5,438		1,225
Moulding.....			5,811		2,905
Nails and hardware, n.e.s.....			21,772		1,072
Paint and varnishes.....	gal.			1,000	2,760
Rubber.....			20,726		
Silk.....			10,110		26,163
Solder.....	lb.	838	252		368
Tin andterne plate.....	lb.		4,558	4,491	3,055
Wire and wire frames.....			1,903		5,514
Zinc.....	lb.	119,345	11,463	85,579	11,870
Shipping containers, of all kinds.....			6,801		4,857
All other materials.....			37,600		217,070
Total.....			322,001		346,518

Products.—Lamps and lanterns worth \$353,015, lamp and lantern burners valued at \$27,868, metal screens worth \$39,888 and weatherstripping valued at \$109,254, were the most important of the products listed in this industry.

Table 103.—Products of the Miscellaneous Non-Ferrous Metal Products Industry in Canada 1924 and 1925

Product	1924		1925	
	Quantity	Selling value	Quantity	Selling value
		\$		\$
Lamps and lanterns.....		222,107		353,015
Lamp and lantern burners.....	35,210 doz.	33,076	31,000 doz.	27,868
Screens.....		48,629		39,888
Weatherstripping (metal).....		84,374		109,254
Shades.....		97,072		121,426
Other products*.....		190,362		260,094
Receipts for custom and repair work.....		65,446		80,832
Total.....		741,066		999,277

*Includes headlights, car heaters, train signals, arm trays, cushions, gasoline irons and stoves, mantles, lamp standards, etc.

DIRECTORY OF FIRMS IN THE INDUSTRIES CLASSIFIED UNDER MANUFACTURES OF NON-FERROUS METALS

Aluminium and Aluminium Ware

Name of Firm	Head Office Address	Location of Plant
Quebec— Aluminium Co. of Canada.....	Canada Life Bldg., 46 King St., Toronto, Ont...	Shawinigan Falls.
Ontario— Aluminium Co. of Canada.....	Canada Life Bldg., 46 King St. W., Toronto....	158 Sterling Road, Toronto.
Aluminium Last and Metal Foundry Co.....	88 Ontario St. S., Kitchener.....	Kitchener.
Aluminium Ware Manufacturing Co., Ltd.....	Colborne St., Oakville.....	Oakville.
Aluminium Steel Products, Ltd.....	18th St. and 3rd Ave. E., Owen Sound.....	Owen Sound.
Clark, Geo. C., Metal Last Co.....	1304 Harper Ave., Detroit, Mich.....	782 McDougall St., Windsor.
Duro Aluminium Ltd.....	80 Park St. N., Hamilton.....	Hamilton.
Hamilton Aluminium Ware Co.....	13 Ferguson Ave., N., Hamilton.....	Hamilton.
Ideal Aluminium Products, Ltd.....	2480 Dundas St. W., Toronto.....	Toronto.
Metal and Thermit Co.....	120 Broadway, New York, N.Y., U.S.A.....	13 Emily St., Toronto.
Metal Stampings, Ltd.....	20-22 Hayter St., Toronto.....	Toronto.
Veribest Aluminium Co. of Canada.....	349 Carlaw Ave., Toronto.....	Toronto.

Brass and Copper Products

Nova Scotia— Collings, Wm. & Son.....	711-713 Barrington St., Halifax.....	Halifax.
New Brunswick— McAvity, T. & Sons, Ltd.....	Rothessay Ave., St. John.....	St. John.
Quebec— Archambault Brass Foundry.....	3520 Henri Julien Ave., Montreal.....	Montreal.
Bessette, Ernest.....	470 Ontario St. E., Montreal.....	Montreal.
Booth Coulter Copper Smithing Co., Limited.....	195 Wellington St., Montreal.....	Montreal.
Bradford Bros.....	22 St. Louis St., Granby.....	Granby.
Canada Brass Products, Ltd.....	162 Craig St., W., Montreal.....	Montreal.
Canadian Bronze, Ltd.....	999 Delorimier Ave., Montreal.....	Montreal.
Clarke, C. O., & Bro.....	1510 St. Patrick St., Montreal.....	Montreal.
Cuthbert, W. R., & Co.....	36 Duke St., Montreal.....	11 Duke St., Montreal.
Eastern Brass Foundry Co.....	514 Harbour St., Montreal.....	Montreal.
Empire Brass Foundry.....	121 Nazareth St., Montreal.....	Montreal.
Exxel Brass & Aluminium Works.....	107 Nazareth St., Montreal.....	Montreal.
Flaves, Richard.....	21 Fleuve St., Quebec.....	Quebec.
Hzzel, James.....	128-130 Grant St., Quebec.....	Quebec.
Jonkins Bros., Ltd.....	103 St. Remi St., Montreal.....	Montreal.
Johnson Wire Works.....	50 Dagenais St., St. Henry, Montreal.....	Montreal.
Mcnaught, F. B.....	22 Jarois St., Montreal.....	Montreal.
Miller's Brass Foundry.....	259 Hertel St., Three Rivers.....	Three Rivers.
Mitchell, Robert Co., Ltd.....	64 Belair Ave., Montreal.....	Montreal.
New Brassware Company.....	2320 Aird Ave., Montreal.....	Montreal.
Union Screen Plate Co. of Canada, Limited.....	146 Water St., Fitchburg, Mass., U.S.A.....	Main St., Lennoxville.
Ontario— Anaconda American Brass Ltd.....	Box 8, corner 8th St. and Birmingham Ave., New Toronto.....	New Toronto.
Balfour & Sheratt.....	2 Frederick St., Toronto.....	Toronto.
Beaver Brass Mfg. Co. Ltd.....	83 Ryerson Ave., Toronto.....	Toronto.
Boag, John.....	308 Keele St., Toronto.....	Toronto.
Booth Coulter Copper & Brass Co., Ltd.....	115 Sumach St., Toronto.....	Toronto.
Brilliant Brass Works.....	26 Mariposa Ave., Toronto.....	Toronto.
Bunker, Geo.....	363 Parliament St., Toronto.....	Toronto.
Canada Smelting & Refining Works.....	3444 Richmond St., London.....	London.
Canadian Brass Co., Ltd.....	415 Dundas St., Galt.....	Galt.
Canadian Gasket Co.....	Courtwright St., Bridgeburg.....	Bridgeburg.
Capital Brass Works.....	207 Booth St., Ottawa.....	Ottawa.
Capital Wire Cloth & Mfg. Co., Limited.....	Hinton Ave., Ottawa.....	Ottawa.
Cole Manufacturing Co.....	Wellington St., Lindsay.....	Lindsay.
Cornwall Brass and Iron Foundry.....	424 Pitt St., Cornwall.....	Cornwall.
Dean Bros.....	187 Richmond St. W., Toronto.....	Toronto.
Dodd and Struthers.....	Des Moines, Iowa.....	105 Sandwich St. E., Walkerville.
Dominion Brass Products, Ltd.....	33-5 Sherburne St., Toronto.....	Toronto.
Dominion Lightning Rod Co.....	Queen St., Dundas.....	Dundas.
Edmunds, J. H., & Co.....	225 Richmond St. W., Toronto.....	Toronto.
Engravers Metal Co., Ltd.....	115 Sumach St., Toronto.....	Toronto.
Empire Brass Mfg. Co.....	1100-1120 Dundas St. E., London.....	London.
Galt Brass Co.....	471 Dundas St., Galt.....	Galt.
Guelph Brass and Aluminium Works.....	47 Division St., Guelph.....	Guelph.
Huhn Brass Co., Limited.....	Waterloo St., New Hamburg.....	New Hamburg.
Jeune Mfg. Co.....	1260 Queen St. W., Toronto.....	Toronto.
Keating, Wm.....	266 Macdorell Ave., Toronto.....	Toronto.
Lauder and Company.....	109½ Adelaide St. W., Toronto.....	Toronto.
Malcolm Fittings, Ltd.....	64 Lombard St., Toronto.....	Toronto.

DIRECTORY OF FIRMS IN THE INDUSTRIES CLASSIFIED UNDER MANUFACTURES OF NON-FERROUS METALS

Brass and Copper Products—Concluded

Name of Firm	Head Office Address	Location of Plant
<i>Ontario—Concluded</i>		
McCulloch, A. F.	37-41 Ritson Road N., Oshawa	Oshawa.
Mitchell Brass Foundry	400 Hanna St. E., Windsor	Windsor.
Monarch Brass Mfg. Co., Limited	71 Browns Ave., Toronto	Toronto.
Monarch Metal Co., Ltd.	Main St. W., Hamilton	Hamilton.
Morrison, James Brass Mfg. Co., Ltd.	91 Adelaide St. W., Toronto	Toronto.
Mueller, H. Mfg. Co., Ltd.	Clifford St., Sarnia	Sarnia.
National Brass and Aluminium Foundry	117 St. Patrick St., Toronto	Toronto.
Niagara Wire Weaving Co.	Robinson St., Niagara Falls	Niagara Falls.
Ottawa Car Mfg. Co., Ltd.	301 Slater St., Ottawa	124 Slater St., Ottawa.
Potter Brass Works	163 Sterling Road, Toronto	Toronto.
Penberthy Injector Co., Ltd.	Corner Pitt and Windsor Sts., Windsor	Windsor.
Phillips, Eugene F., Electrical Works, Limited	De Gaspé and Mariner St., Montreal, Que.	Brookville.
Porter, A. D. Mfg. Co., Ltd.	Hobson St., Galt	Galt.
Quality Brass Foundry	Rossin House Lane, Toronto	Toronto.
Queen City Brass Foundry	28 Dalhousie St., Toronto	Toronto.
Robertson, Jas., Co., Limited	144 Wilham St., Montreal, Que.	207 Spadina Ave., Toronto.
Schirmer's A., Son, Inc.	470 Vanderbilt Ave., Brooklyn, N.Y.	334 King St., Toronto.
Shinn Mfg. Co. of Canada, Ltd.	2024 N. Racine Ave., Chicago, Ill.	133 Woolwich St., Guelph.
Standard Brass Foundry	Catherine St. N., Hamilton	Hamilton.
Stratford Brass Co., Ltd.	Corner Erie and Gore St., Stratford	Stratford.
Sully Brass Foundry, Ltd.	2388 Dundas St. W., Toronto	Toronto.
St. Catharines Brass Works	62 George St., St. Catharines	St. Catharines.
St. Thomas Bronze Co., Ltd.	1st Ave., St. Thomas	St. Thomas.
Tallman Brass & Metal Company	Corner Wilson and Sanford Ave., Hamilton	Hamilton.
Teeswater Lightning Rod Co.	Teeswater	Teeswater.
Tickell, J. G., and Sons	500 King St. W., Toronto	Toronto.
Universal Lightning Rod Co.	Tunnery St., Hespeler	Hespeler.
Vacuettes, Ltd.	48 York St., Toronto	530 Parkdale Ave., Ottawa.
Wahl Co., Limited	100 Sterling Road, Toronto	Toronto.
Wallaceburg Brass & Iron Mfg. Co., Ltd.	Walkoe St., Wallaceburg	Wallaceburg.
Wilson & Cousins	33-35 McCaul St., Toronto	Toronto.
<i>Manitoba—</i>		
Ames Baker, Ltd.	601-9th St., Brandon	Brandon.
Derby Specialty Mfg. Co.	197 Princess St., Winnipeg	Winnipeg.
Northwestern Brass, Ltd.	Bury St., Winnipeg	Winnipeg.
Winnipeg Brass & Fixture Company	1259 Riddle Ave., Winnipeg	Winnipeg.
<i>Alberta—</i>		
Northwestern Brass, Ltd.	Bury St., Winnipeg, Man.	1609-24th Ave. E., Calgary.
<i>British Columbia—</i>		
Elbert Copper and Brass Co.	334 Alexander St., Vancouver	Vancouver.
Hastings Brass Foundry	2559 Pender E., Vancouver	Vancouver.
Smith, Thos. Wm.	632 Pembroke St., Victoria	Victoria.
Sunmer Brass Foundry, Ltd.	620 Bidwell St., Vancouver	Vancouver.
Vancouver Brass Works	1304 Keefer St., Vancouver	Vancouver.
Victoria Brass and Iron Works	Pioneer St., Esquimalt	Esquimalt.
Wilson's Brass Foundry	22 Second Ave. E., Vancouver	Vancouver.

Lead, Tin and Zinc Products

<i>New Brunswick—</i>		
James Robertson Co., Ltd.	142 William St., Montreal, Quebec	1-29 Sheffield St., St. John.
<i>Quebec—</i>		
Dominion Metal Co.	108-110 Frontenac St., Sherbrooke	Sherbrooke.
Eagle Smelting & Refining Works, Ltd.	248 Richmond St., Montreal	Montreal.
Magnolia Metal Company	Room 4—304 St. James St., Montreal	Montreal.
Metal Smelters & Refiners, Ltd.	41-55 Prince St., Montreal	Montreal.
Mount Royal Metal Co.	145 Mill St., Montreal	Montreal.
Robertson, Jas., & Co., Ltd.	142 William St., Montreal	Montreal.
Robertson, Thomas, & Co., Ltd.	134 Craig St. W., Montreal	207 Common St., Montreal.
<i>Ontario—</i>		
Canada Metal Co., Ltd.	35-53 Fraser Ave., Toronto	Toronto.
Canadian Collapsible Tube & Containers, Ltd.	95 Sterling Road, Toronto	Toronto.
Canadian Hanson & Van Winkle Co., Ltd.	54 Silver St., Toronto	15-25 Morrow Ave., Toronto.
Canadian Type Foundries, Ltd.	74 Market St., Toronto	Toronto.
Crane Packing Co., Ltd.	422 Bruce Ave., Windsor	Windsor.
Dominion Smelting Works	McKay St., Ottawa	Ottawa.

DIRECTORY OF FIRMS IN THE INDUSTRIES CLASSIFIED UNDER MANUFACTURES OF NON-FERROUS METALS

Lead, Tin and Zinc Products—Concluded

Name of Firm	Head Office Address	Location of Plant
Ontario—concluded		
Hoyt Metal Company.....	721 Eastern Ave., Toronto.....	Toronto.
Modern Machine Co.....	344 Queen St., Ottawa.....	Ottawa.
Frankel Bros., Ltd. (National Metal Co.).....	Don and Eastern Ave., Toronto.....	Toronto.
Spooner, Copperine Co., Ltd.....	Port Hope.....	Port Hope.
Manitoba—		
Canada Metal Co.....	35 Fraser Ave., Toronto, Ont.....	301 Chambers St., Winnipeg.
Union Metal Co.....	405 Langside St., Winnipeg.....	Winnipeg.
British Columbia—		
Canada Metal Co., Ltd.....	35 Fraser Ave., Toronto, Ont.....	1428 Granville St., Van- couver.
Great Western Smelting & Refining Co.....	146 Second St. E., Vancouver.....	Vancouver.
Shivlock-Jackson, Ltd.....	341 Pender St. W., Vancouver.....	Vancouver.

Precious Metal Products

Nova Scotia—		
Eastwood, Jas.....	107 Archimedes St., New Glasgow.....	Dalhousie St., New Glasgow.
New Brunswick—		
Maritime Dental Laboratory.....	117 Union St., St. John.....	St. John.
Quebec—		
Acme Gold Co.....	89c Galt St., Sherbrooke.....	Sherbrooke.
Bramley, Wm., & Co.....	4 Dollard Lane, Montreal.....	Montreal.
Birks, Henry & Sons, Ltd.....	Phillips Square, Montreal.....	Montreal.
Caron Brothers, Inc.....	Caron Bldg., Montreal.....	Montreal.
Canadian Sturdy Chain Co.....	Richmond St., Sherbrooke.....	16 George St., Sher- brooke.
Coffee, J. G.....	119 St. Alexander, Montreal.....	Montreal.
Elite Metal Novelty Mfg. Co.....	141 St. Paul St. W., Montreal.....	Montreal.
Farmer Bros.....	40 St. Lawrence Blvd., Montreal.....	Montreal.
Grothe, Theodore A., & Fils.....	157 St. Lawrence, Montreal.....	Montreal.
Helmsley, Geo. T., Co.....	907 Bleury St., Montreal.....	18 Juror St., Montreal.
Hoehsberg & Soltanoff.....	Room 404, 46 St. Alexander, Montreal.....	Montreal.
Ingersoll Watch Co., Inc.....	194 St. Catherine St. E., Montreal.....	Montreal.
Lariviere, J. L. H.....	684 Lartigue, Montreal.....	Montreal.
Lasker, Moses.....	907 Bleury St., Montreal.....	Montreal.
Lemaitre, Paul, Ltée.....	12 Jeannotte St., Montreal.....	Montreal.
Mappin & Webb (Canada), Ltd.....	353 St. Catherine St. W., Montreal.....	Montreal.
Marion, Aly.....	222 Craig St. West, Montreal.....	Montreal.
McRae Stone Co., Ltd.....	54 Ball St., Sherbrooke.....	Sherbrooke.
Montreal Dental Supply & Mfg. Co.....	406 Birks Bldg., 14 Phillips Sq., Montreal.....	Montreal.
Popau, Paul.....	2789 Rue Droblet, Montreal.....	Montreal.
Roughlon & Skelton.....	32 McGill College Ave., Montreal.....	Montreal.
Smith, F. W., Manfg. Co.....	90 Main St., Hull.....	Hull.
Smith Patterson Co., Ltd.....	124 St. Antoine St., Montreal.....	Montreal.
Stephenson-Robillard Co.....	907 Bleury St., Montreal.....	Montreal.
Sleves, Annie.....	275 Craig St. W., Montreal.....	Montreal.
Wallace, R. & Sons Mfg. Co.....	Cookshire.....	Cookshire.
Whiting & Davis Co.....	Laurier Ave., Sherbrooke.....	Sherbrooke.
Ontario—		
American Watch Case Co. of Toronto, Ltd.....	511 King W., Toronto.....	Toronto.
Allport, Herbert R.....	3604 Richmond St., London.....	London.
Allport Pros.....	284 Adelaide St. E., Toronto.....	Toronto.
Animal Trap Co. of America, Ltd.....	Onelia, N. Y., U.S.A.....	Niagara Falls.
Anthony Bros.....	31 Lombard St., Toronto.....	Toronto.
Arrowsmith Co.....	45 Richmond St. E., Toronto.....	Toronto.
Artistic Jewellery Mfg. Co.....	70 Victoria St., Toronto.....	Toronto.
Baker Geo. L.....	101 John St., Hamilton.....	Hamilton.
Baker, T. H., and Co., Ltd.....	115 Carling St., London.....	London.
Benedict Proctor Mfg. Co., Ltd.....	East Syracuse, N. Y., U.S.A.....	Trenton.
Berlin & Raveyle Mfg. Co., Ltd.....	53 Frederick St., Kitchener.....	Kitchener.
Breadner Mfg. Co.....	1002 Somerset St. W., Ottawa.....	Ottawa.
Butterworth, L. R.....	176 Richmond St. W., Toronto.....	Toronto.
Canadian Seamless Wire Co., Ltd.....	198 Clinton St., Toronto.....	Toronto.
Canadian Silversmiths, Ltd.....	110 Adelaide St. W., Toronto.....	Toronto.
Canadian Wm. A. Rogers, Ltd.....	330 Bay St., Toronto.....	570 King St. W. Toronto.
Capp, T. W., Company.....	176 Richmond St. W., Toronto.....	Toronto.
Caulk, L. D., Co. of Canada, Ltd.....	172 John St., Toronto.....	Toronto.
Cope, C. H.....	51 Richmond St. E., Toronto.....	Toronto.
Cowdrill, S.....	39 Lombard St., Toronto.....	Toronto.
Davis Mfg. Co.....	21 Wilton Sq., Toronto.....	Toronto.

DIRECTORY OF FIRMS IN THE INDUSTRIES CLASSIFIED UNDER MANUFACTURES OF NON-FERROUS METALS

Precious Metal Products—Concluded

Name of Firm	Head Office Address	Location of Plant
Ontario—Concluded		
Donnelly, L., & Co.	116 Church St., Toronto	Toronto.
Eaton, T. Co., Ltd.	100 Yonge St., Toronto	Toronto.
Electric Chain Co. of Canada	23 River St., Toronto	Toronto.
Elliott & Bishop Co.	120 Adelaide St. W., Toronto	Toronto.
Ellis, P. W., & Co., Ltd.	31 Wellington St. E., Toronto	Toronto.
Excelsior Jewellery Mfg. Co.	36 Lombard St., Toronto	Toronto.
Fort William Jewellery Co.	114 Cuthbertson Block, Fort William	Fort William.
Fremes, S., & Co., Ltd.	333 Adelaide St. W., Toronto	Toronto.
Friedman & Hurwitz	176 Richmond St. W., Toronto	Toronto.
Goldsmith Bros. Smelting & Refining Co., Ltd.	21 Wilton Sq., Toronto	Toronto.
Goldstein Jewellery Manufacturing Co., Ltd.	12-18 Beverley St., Toronto	Toronto.
Gray and Pullen	45 Richmond St. E., Toronto	Toronto.
Howard & Gardner	18 Ferguson Ave., Hamilton	Hamilton.
Imperial Refining & Smelting Works	34 Beverly St., Toronto	Toronto.
International Silver Co., Ltd.	375 Madison Ave. N., Toronto	Toronto.
International Silver Co. of Canada, Ltd.	145 River Road, Niagara Falls	Niagara Falls.
Jackson, Howe and Brooks	11 Temperance St., Toronto	Toronto.
Jones Chas. F.	380 Clarence St., London	London.
Knox, J. A., & Co.	159 Richmond St. W., Toronto	Toronto.
Lackie, Milton	106 Lombard St., Toronto	Toronto.
Laes, Geo. H., & Co., Ltd.	47 Main St. E., Hamilton	Hamilton.
Levy Bros. Co., Ltd.	58-60 King St. E., Hamilton	Hamilton.
Manufacturing J. B. Co.	176 Richmond St. W., Toronto	Toronto.
McEltheran and Plant	66 Dundas St. W., Toronto	Toronto.
McClashan Clarke Co., Ltd.	Palmer Ave., Niagara Falls	Niagara Falls.
Milroy, S. K.	234 Dundas St., London	London.
Mitchell, W. J.	84 Victoria St., Toronto	Toronto.
Murphy, Bruce	180 North St., Orillia	Orillia.
National Refining Co., Ltd.	34 Ross St., Toronto	Toronto.
Nolan & Strachan	39 Lombard St., Toronto	Toronto.
Purkinson, F. A.	443 Colborne St., Toronto	Toronto.
Platinum Art Co.	70 Lombard St., Toronto	Toronto.
Pugh, William Co.	159-161 Richmond St. W., Toronto	Toronto.
Riordon Plating Works	131 Market St., Hamilton	Hamilton.
Roden Bros., Ltd.	345 Carlaw Ave., Toronto	Toronto.
Rogal, A.	23 Adelaide St. W., Toronto	Toronto.
Royal Mint	8 Sussex St., Ottawa	Ottawa.
Sunders, H. & A.	Corner King & John Sts., Toronto	Toronto.
Sunders, Lorie & Co., Ltd.	200 Adelaide W., Toronto	Toronto.
Sterling Craft	107 Richmond St. E., Toronto	Toronto.
Toronto Watch Case Repair Co.	404 Colborne St., Toronto	Toronto.
Trumb Mfg. Co. of Canada, Ltd.	28 London St. W., Windsor	Windsor.
Unity Jewellery Mfg. Co.	60 Bond St., Toronto	Toronto.
Vallier & Millard	1 Duchess St., Toronto	Toronto.
Wade Manufacturing Co.	Cross St., Dundas	Dundas.
Wellings Mfg. Co. of Toronto, Ltd.	67 Richmond St. E., Toronto	Toronto.
Western Clock Company	Hunter St. E., Peterborough	Peterborough.
White, T., & Son	11 Richmond St. W., Toronto	Toronto.
Williams Gold Refining Co. of Canada, Ltd.	Courtwright St., Bridgeburg	Bridgeburg.
Zack & Co.	171 Mutual St., Toronto	Toronto.
Manitoba—		
Armstrong, J. R.	279 Garry St., Winnipeg	Winnipeg.
Birks, Henry, & Sons, Ltd.	Phillips Square, Montreal, Que.	Smith & Portage Ave., Winnipeg.
Cutler, S., & Co.	512 Avenue Block, Winnipeg	Winnipeg.
Dingwell, D. R., Ltd.	251 Portage Ave., Winnipeg	62 Albert St., Winnipeg.
Lewis, R.	490 Main St., Winnipeg	Winnipeg.
Saskatchewan—		
Harrington, E. & J.	1755 Scarth Ave., Regina	Regina.
Alberta—		
Birks, Henry, & Son	Phillips Square, Montreal, Que.	Herald Bldg., Calgary.
Calgary Dental Laboratory	608 Leeson-Lineham Bldg., 8th Ave. W., Calgary	Calgary.
British Columbia—		
Birks, Henry & Sons, Ltd.	Phillips Square, Montreal, Que.	710 Grenville St., Vancouver.
Boris, Cecil Peetz	654 Yates St., Victoria	Victoria.
Fliewelling, E. R.	Room 12, 18 Hastings St. W., Vancouver	Vancouver.
Jacoby Bros.	423 Hamilton St., Box 492, Vancouver	Vancouver.
Pettigrow, J. D.	Bernard Ave., Kelowna	Kelowna.

DIRECTORY OF FIRMS IN THE INDUSTRIES CLASSIFIED UNDER MANUFACTURES OF NON-FERROUS METALS

Electrical Apparatus and Supplies

Name of Firm	Head Office Address	Location of Plant
<i>New Brunswick—</i>		
Diamond Battery Co.	47 Canterbury St., St. John.....	St. John.
Energy Electric Co., Ltd.	Pond St., St. John.....	St. John.
<i>Quebec—</i>		
Black & Decker Mfg. Co., Ltd.	10 St. Sophie Lane, Montreal.....	Montreal.
Canadian Lamp Lamps, Ltd.	401 York Bldg. Montreal.....	23 Dowd St., Montreal.
Devoo Electric Switch Co.	414 Notre Dame St., W., Montreal.....	161 St. Maurice St., Montreal.
Duncan Electrical Co., Ltd.	2 Inspector St., Montreal.....	Montreal.
Economy Fuse & Mfg. Co. of Canada, Ltd.	511 Unity Bldg., Montreal.....	16 St. Alexander St., Montreal.
Electrolite Mfg. Co., Ltd.	1025 Boyer St. Montreal.....	Montreal.
Haliburton & White Ltd.	314 Notre Dame W. Montreal.....	Montreal.
Hart Battery Co., Ltd.	St. Georges St., St. John.....	St. John.
Hughes, Benj., Electric Co.	298 LaGauchetière St., W., Montreal.....	Montreal.
I. & N. Co., Ltd.	3 Richelieu St., St. John.....	St. John.
Ledue Electrical Co.	55 Cote St. Montreal.....	Montreal.
Lorimer Radio Electrics.	271 Main St. Farnham.....	Farnham.
Magnocal Electric Firms (Canada) Ltd.	291 Mountain St. Montreal.....	Montreal.
Canadian Marconi Co.	11 St. Sacrament St., Montreal.....	173 William St., Montreal.
Monarch Electric Co., Ltd.	Waterman St., St. Lambert.....	St. Lambert.
Northern Electric Co., Ltd.	121 Shearer St., Montreal.....	Montreal.
Phillips, Eugene P., Electrical Works, Ltd.	De Gaspé & Marinier, Box 729, Montreal.....	Montreal.
Safety Car Heating & Lighting Co.	122 Versailles St. Montreal.....	Montreal.
Solex Co., Ltd.	1202 St. Lawrence St., Montreal.....	Montreal.
<i>Ontario—</i>		
Apex Electrical Manufacturing Co., Ltd.	1067 East 152nd St., Cleveland, Ohio, U.S.A.	102 Atlantic Ave., Toronto.
Banfield, W. H. & Son, Ltd.	732 Pape Ave., Toronto.....	Toronto.
Bakelite Corporation of Canada, Ltd.	372 Dufferin St., Toronto.....	Toronto.
Bacon Electric Mfg. Co., Ltd.	41 Stuart St. W. Hamilton.....	Hamilton.
Belleville Electric & Stampings Ltd.	105 Pinnacle St., Belleville.....	Belleville.
Benjamin Electric Mfg. Co. of Canada, Ltd.	11 Charlotte St. Toronto.....	Toronto.
Boston Insulated Wire & Cable Co.	118 Shaw St., Hamilton.....	Hamilton.
Bramston, Charles A., & Co.	126 Wellington St., W., Toronto.....	Toronto.
Brock Snyder Mfg. Co.,	17 John St., Grimsby.....	Grimsby.
Burgess Batteries, Ltd.	209 Battery St., Niagara Falls.....	Niagara Falls.
Canada Wire & Cable Co., Ltd.	Leaside.....	Leaside.
Canadian Armature Works.	88-90 Queenston St., St. Catharines.....	St. Catharines.
Canadian Brackets Ltd.	243 Church St., Toronto.....	Toronto.
Canadian Coil Co., Ltd.	Walker Power Bldg., Walkerville.....	Walkerville.
Canadian Cracker-Wheeler Co., Ltd.	George St., St. Catharines.....	St. Catharines.
Canadian Drill & Electric Box Co.	1402 Queen St. E., Toronto.....	Toronto.
Canadian General Electric Co., Ltd.	212 King St. W., Toronto.....	Peterborough.
Canadian General Electric Co., Ltd.	212 King St. W., Toronto.....	245 Downie St., Strat- ford.
Canadian General Electric Co., Ltd.	212 King St. W., Toronto.....	Lansdowne Ave., Toronto.
Canadian General Electric Co., Ltd.	212 King St. W., Toronto.....	Cor. Wurd St. & Wallace Ave., Toronto.
Canadian General Electric Co., Ltd.	212 King St. W., Toronto.....	Park St., Peterborough.
Canadian General Electric Co., Ltd.	212 King St. W., Toronto.....	Cannon and Ashley Sts., Hamilton.
Canadian General Electric Co., Ltd.	212 King St. W., Toronto.....	Edison Works, 221 Dufferin St., Toronto.
Canadian Meter Co., Ltd.	88-90 Caroline St. N., Hamilton.....	Hamilton.
Canadian National Carbon Co., Ltd.	16 King St. W. Canada Life Building, Toronto.....	Hillcrest Park, Toronto
Canadian Triangle Conduit Co., Ltd.	21 Prescott Ave., Toronto.....	Toronto.
Canadian Westinghouse Co., Ltd.	Sanford Ave., N., Hamilton.....	Hamilton.
Cansfield, Chas. E.	260 Geary Ave., Toronto.....	Toronto.
Chidwick, F., Brass Co.	1024 Bolus St. Hamilton.....	Hamilton.
Champion Spark Plug Co. of Canada, Ltd.	1416 Howard Ave., Windsor.....	Windsor.
Christian Electric Co. of Canada, Ltd.	15 Ferry St., Windsor.....	Windsor.
Clements Manufacturing Co., Ltd.	78 Duchess St., Toronto.....	Toronto.
Commercial Fixture Co., Ltd.	122 Adelaide St. W., Toronto.....	Toronto.
Continental Electric Co., Ltd.	507 King St. E., Toronto.....	Toronto.
Crouse-Hinds Co. of Canada, Ltd.	7 Labatt Ave., Toronto.....	Toronto.
Crown Electrical Mfg. Co., Ltd.	21 Sydenham St., Brantford.....	Brantford.
Dalyte Electric Ltd.	Surrey St., Guelph.....	Guelph.
Davis Slat & Mfg. Co. of Canada Ltd.	131 Shaftesbury Ave., Toronto.....	88 Hogarth Ave., Toronto.
De Forest Radio Corporation Ltd.	335 Carlaw Ave., Toronto.....	Toronto.
Dominion Dry Cells Co., Ltd.	20 Trinity St., Toronto.....	Toronto.
Dominion Carbon Brush Co.	350 Richmond St., W., Toronto.....	Toronto.
Dominion Electric Mfg. Co., Ltd.	60 Sumach St., Toronto.....	Toronto.
Dominion Gas Meter Works.	328 Wortley Road, London.....	London.
Dominion Oil Cut Outs Co.	250 Richmond St. W. Toronto.....	Toronto.
Eagle Star Battery Co., Ltd.	382 Queen St., Ottawa.....	Ottawa.
Exide Batteries of Canada, Ltd.	153 Dufferin St., Toronto.....	Toronto.

DIRECTORY OF FIRMS IN THE INDUSTRIES CLASSIFIED UNDER MANUFACTURES OF NON-FERROUS METALS

Electrical Apparatus and Supplies—Concluded

Name of Firm	Head Office Address	Location of Plant
Ontario—Concluded		
Factory Products, Ltd.	220 King St. W., Toronto.	Toronto.
Ferranti Meter & Transformer Mfg. Co., Ltd.	26 Noble St., Toronto.	Toronto.
Galt Electric and Gas Fixtures Co.	59 Queen St. E., Galt.	Galt.
Hamilton Lamp Co.	146 York St., Hamilton.	Hamilton.
Hessco Electric Mfg. Co.	65 Frederick St., Toronto.	Toronto.
Hoover Co., Ltd.	Gage & Barton Sts., Hamilton.	Hamilton.
I. X. L. Mfg. Co.	Norman and Daly Sts., Palmerston.	Palmerston.
Jones & Moore Electric Co., Ltd.	298 Adelaide St. W., Toronto.	Toronto.
Keith Electric Refrigerator Co., Ltd.	287 Campbell Ave., Toronto.	Toronto.
Kelvinator of Canada Ltd.	London.	London.
LaSalle Lead Products Ltd.	630 Wyandotte St. E., Windsor.	Windsor.
Lincoln Electric Co. of Canada, Ltd.	136 John St., Toronto.	Toronto.
Live Wire Co., Ltd.	Metcalfe St., Guelph.	Guelph.
Mack Storage Battery Co. of Canada Ltd.	296 Greenwood Ave., Toronto.	Toronto.
Maloney Electric Co. of Canada Ltd.	313 Sterling Road, Toronto.	Toronto.
Marr, W. P.	66 Wallace Ave., Toronto.	Toronto.
Metal Studios, Ltd.	21 Walnut St., N., Hamilton.	Hamilton.
Metropolitan Engineering Co. of Canada, Ltd.	20 Hayer St., Toronto.	Toronto.
Mis-Car-Aid Mfg. Co.	12 Chamberlain Ave., Ottawa.	Ottawa.
Monarch Battery Co., Ltd.	275 Ontario St., Kingston.	Kingston.
National Electric Heating Co., Ltd.	544 Queen St. E., Toronto.	Toronto.
Neptune Meter Co.	315 Sorauren Ave., Toronto.	Toronto.
Nesbitt Electric Mfg. Co., Ltd.	60 Duchess St., Toronto.	Toronto.
Parkard Electric Co., Ltd.	13 Rae St., St. Catharines.	St. Catharines.
Phoenix Art Metal Mfrs.	1102 Ossington Ave., Toronto.	Toronto.
Pierce Fuse Corporation of Canada, Ltd.	8 Lewis St., Bridgeburg.	Bridgeburg.
Premier Vacuum Cleaner Co., Ltd.	233 Richmond St. W., Toronto.	Toronto.
Prest-O-Lite Company of Canada, Ltd.	Canada Life Bldg., 45 King St. W., Toronto.	Hillcrest Park, Toronto.
Radio Valve Co. of Canada, Ltd.	212 King St. W., Toronto.	221 Dufferin St. Toronto
Renfrew Electric Products, Ltd.	Bonnechere St., Box 641, Renfrew.	Renfrew.
Robbins & Myers Co.	Morrell St., Brantford.	Brantford.
Sangamo Electric Co., of Canada, Ltd.	420 Power Bldg. Montreal, Que.	183-185 George St., Toronto.
Sepco Automatic Electric Heaters.	39 Richmond St. E., Toronto.	Toronto.
Service Lamp Co.	197 King St., London.	London.
Smith, Peter, Heater Co.	6200 Hamilton Ave., Detroit, Mich.	Walkerville.
Smith & Stone, Ltd.	Georgetown.	Georgetown.
Square D. Company, Canada, Ltd.	6000 Rivard St., Detroit, Mich.	Walkerville.
Standard Bronze Co., Ltd.	Rear 1 Trafalgar Ave., Toronto.	Toronto.
Standard Meter Co., Ltd.	10 Morrow Ave., Toronto.	Toronto.
Standard Radio Mfg Co.	90 Chestnut St., Toronto.	Toronto.
Standard Underground Cable Co. of Canada, Ltd.	Sherman Ave., Hamilton.	Hamilton.
Superior Electric Co., Ltd.	497 John St., Pembroke.	Pembroke.
Supreme Water Heater Mfg. Co.	1 Carlton St., Toronto.	Toronto.
Taylor Electric Mfg. Co., Ltd.	526 Adelaide St., London.	London.
Thermo Electric Ltd.	Morrell St., Brantford.	Brantford.
Toronto and Hamilton Electric Co.	99-103 McNab St. N., Hamilton.	Hamilton.
United Electric Co. of Canada, Ltd.	14 Breachbune St., Toronto.	Toronto.
U. S. Light & Heat Ltd.	Niagara Falls.	Niagara Falls.
Volta Mfg. Co., Ltd.	Alexander St., Welland.	Welland.
Walker, Hiram & Sons, Metal Products Ltd.	Kilbuck Road, Walkerville.	Walkerville.
Walsh Electrical Co., Ltd.	465 Church St., Toronto.	Toronto.
Willard Storage Battery Co., of Canada, Ltd.	269 Campbell Ave., Toronto.	Toronto.
Wondler Reehmger Corporation Ltd.	41 Balzac Ave., Toronto.	Toronto.
Manitoba—		
Burgess Dry Cells, Ltd.	14 Bury St., Winnipeg.	Winnipeg.
Electric Heating Co., Ltd.	677 Notre Dame Ave., Winnipeg.	Winnipeg.
Gerry Mfg. Co., Ltd.	120 Lombard St., Winnipeg.	Winnipeg.
Globe-lite Battery Co., Ltd.	117 Pacific Ave., Winnipeg.	Winnipeg.
Langley, G. E., Electrical Mfg. Co.	677 Notre Dame Ave., Winnipeg.	Winnipeg.
Saskatchewan—		
Arro Lite Co., Ltd.	433 Athabaska St., E., Moose Jaw.	Moose Jaw.
Alberta—		
Alberta Battery Co.	420-9th Ave. E., Calgary.	Calgary.
Blais Bros. Battery Co., Ltd.	10161-100A St., Edmonton.	Edmonton.
Champion Battery Co.	410 S. Railway St., Medicine Hat.	Medicine Hat.
Smith's Battery Station.	211-10th Ave. W., Calgary.	Calgary.
British Columbia—		
Cope & Son, Ltd.	450 Hastings St. W., Vancouver.	Vancouver.
Farr, Robinson & Bird.	546 Howe St., Vancouver.	Vancouver.

DIRECTORY OF FIRMS IN THE INDUSTRIES CLASSIFIED UNDER MANUFACTURES OF NON-FERROUS METALS

Miscellaneous Non-Ferrous Metal Products

Name of Firm	Head Office Gddress	Location of Plant
<i>Quebec—</i>		
Canada Metal Weatherstrip Co.....	121 St. Henry St., Montreal.....	Montreal.
Piper, Hiram L., Co., Ltd.....	75 St. Remi St., Montreal.....	Montreal.
White Bros	1234 Van Horne Ave., Montreal.....	Montreal.
Window Strip and Supply Co., Ltd.....	66 McGill St. W., Montreal.....	Montreal.
<i>Ontario—</i>		
Baetz Bros. Specialty Co., Ltd.....	264 Victoria St., Kitchener.....	21 Gaukel St., Kitchener.
Best Weather Strip Co., Ltd.....	28-32 James St., Hamilton.....	Hamilton.
Chamberlain Metal Weather Strip Co.....	Kingsville	Kingsville.
Coleman Lamp Co., Ltd.....	Queen St. E. and Davis Ave., Toronto.....	Toronto.
Dewar Mfg. Co.....	34-35th St. Brooklyn, N.Y.....	77 York St., Toronto.
Ford's Golden Weather Strip Co.....	111 Prospect St., Hamilton.....	Hamilton.
Furber, C. J. & Co.....	Queen St., Durham.....	Durham.
Golden All-Metal Weather Strip Co.....	417 Margueretta St., Toronto.....	Toronto.
Hamilton Weatherstrip & Screen Co.....	224 Balsam Ave. S. Hamilton.....	Hamilton.
Higgin Manufacturing Co.....	Newport, Kentucky, U.S.A.....	33-35 McCaul St., Toronto.
Moore Weatherstrip Co.....	882 Palmerston Ave., Toronto.....	Toronto.
Peace William Co., Ltd.....	Gerrard St., Hamilton.....	Hamilton.
Schultz Manufacturing Co., Ltd.....	156 York St., Hamilton.....	Hamilton.
<i>Manitoba—</i>		
Dennis, H. J.....	284 Stradbrook Ave., Winnipeg.....	Winnipeg.

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