

CANADA'S WEALTH OF STRUCTURAL PRODUCTS

SHOW PRODUCTION OF STRUCTURAL MATERIALS

Revised Figures are Given in Annual Report of Department of Mines Which Has Just Been Published
---Detailed Values Given

Revised figures showing the production of structural materials and clay products in the Dominion, as given in the annual report on the Mineral Production of Canada, for 1917, just issued by the Department of Mines, are taken from the report, as follows:—

The subjects included under this heading comprise, in the order treated: cement, clay products of various kinds, such as brick, sewerpipe and tile, pottery, etc., lime, sand-lime brick, sand and gravel, slate, and stone for building and other purposes; including granite, marble, limestone, sandstone, etc. The statistics of stone production do not include the stone used in making cement or lime, but are as complete as possible for all other established stone quarries; nevertheless there is undoubtedly a large production of stone for foundation work, road-making, and railway construction, of which no record is available.

The total value of the production of these structural products in 1917 was \$19,837,311, as compared with \$17,467,186 in 1916, and \$17,920,759 in 1915, the increase in 1917 being \$2,370,125, or 13.6 per cent, as compared with the previous year.

The total value of imports of the same class of products in 1917 was \$7,901,398, as against \$5,562,220 in 1916, and \$3,912,946 in 1915.

The total exports were valued at \$647,369 in 1917, as against \$631,239 in 1916, and \$519,676 in 1915.

The apparent total consumption of these structural products based upon the record of production, imports and exports, was in 1917 valued at \$27,091,340, as compared with \$22,348,167 in 1916, and \$21,314,029 in 1915, the increase in value of consumption in 1917 being \$4,743,187.

The total quantity of cement made in 1917 according to returns received from manufacturers was 4,987,255 barrels of 350 pounds net each (872,769 tons), as compared with 4,753,033 barrels (831,781 tons) made in 1916, an increase of 134,222 barrels (23,489 tons) or nearly 3 per cent.

The total quantity of Canadian portland cement sold in 1917, was 4,768,488 barrels (834,485 tons) as compared with 5,369,560 barrels (939,671 tons) sold in 1916, a decrease of 601,072 barrels (105,107,290 tons), or 11.4 per cent.

The total consumption of cement in 1917 including Canadian and imported cement was 4,777,068 barrels of 350 pounds each (835,987 tons) as compared with 5,390,156 barrels (943,252 tons) in 1916, a decrease of 613,088 barrels (97,290 tons), or 11.4 per cent.

The production of cement in Canada since 1909 though all classed as portland, has included an output of puzzolan cement, made from blast furnace slag at Sydney, N.S., and a small production "natural portland," made at Babine, Manitoba. The slag cement plant at Sydney has, however, been idle during the past three years.

The average number of men employed in Canadian cement plants during 1917 was 1,396, and total wages paid \$1,424,215. In 1916 the average num-

ber of men employed was 1,695 and wages paid \$1,307,224.

The production of cement in 1917 was derived from nine plants; seventeen other plants were idle throughout the year. The total capacity of the twenty-six completed plants is reported as 50,230 barrels the details of which are shown by provinces in the following table. As compared with 1916 the total number of plants shows a decrease of three, two plants having been reported as dismantled and a third abandoned.

CLAYS AND CLAY PRODUCTS.

For a number of years a small quantity of fireclay has been produced and sold as such, and during the past few years there has been a small, but increasing production of kaolin, or china-clay from a deposit in the Province of Quebec. With these exceptions, practically all of the clay production in Canada consists almost altogether of the manufactured product.

Special investigations of the clay and shale resources of Canada have been undertaken by the Department of Mines for a number of years, and several reports giving the results of these investigations have been published.

Information is now available regarding these materials on almost every portion of the settled part of the Dominion and may be obtained on application to the Director of the Mines Branch at Ottawa.

The clay products made in Canada comprise brick of various kinds, including common and pressed, ornamental and fancy building brick, paving brick, firebrick, porous fireproofing brick and blocks, sewerpipe and drain tile, pottery and sanitary ware, the last two products chiefly from imported clays.

The total value of the clay products sold or marketed in 1917 was \$4,779,038, as compared with a value of \$4,120,805 in 1916; \$3,914,488 in 1915; \$6,871,957 in 1914; \$9,504,314 in 1913, and \$10,575,869 in 1912.

The value of the production in 1917 was greater than that of 1916 by \$658,233, or an increase of about 16 per cent. The production in 1917, however, was only 45 per cent of the maximum production, which was reached in 1912.

For a few years previous to 1913 the annual production of clay products increased very rapidly, having more than doubled in that period. In 1913, however, the financial stringency affected building operations to such an extent as to greatly reduce the demand for building brick. There was actually a considerable increase in the quantity of common and pressed building brick manufactured during the year, but a large falling off in sales, so that large stocks of brick must have remained in manufacturers' hands at the close of the year. In 1914 there was a large falling off both in quantities of brick made and in quantities sold, and the stocks of common and pressed brick on hand at the end of the year were reported at 242,106,000 or about 44 per cent of the number sold during the year. In 1915, there was again a large decrease both in quantity of brick made and in the quantities sold. Sales, however, exceeded actual output, stocks having been depleted to a considerable extent to supply demand. Stocks of common and pressed brick on hand at the end of the year were reported as 147,817,000, or about 61 per cent of the stocks reported at the end of 1914. All classes of clay products showed a falling off in production, with the exception of firebrick, pottery and kaolin.

During 1916 and 1917, however, the total quantity of brick sold was about the same as that manufactured, and at the end of 1917 stocks had fallen to about 75,000,000.

STRUCTURAL MATERIALS, CALENDAR YEAR, 1917.

	Production.	Imports.	Exports.	Consumption.
	\$	\$	\$	\$
Cement, Portland.....	7,724,246	28,356	16,857	7,735,745
Clay products.....	4,779,038	6,610,837	138,143	11,251,732
Line.....	1,558,487	78,251	74,523	1,562,215
Sand-lime brick.....	201,355			201,355
Sand and gravel.....	2,326,249	312,403	290,964	2,347,688
Slate.....	7,789	106,893		114,682
Stone.....	3,240,147	764,658	126,882	3,877,923
	19,837,311	7,901,398	647,369	27,091,340

The average number of men employed in 1917 was 3,915, as compared with 4,164 in the previous year, and the total wages paid were \$2,174,167, as against \$1,740,900 in 1916.

Of the total value of the sales in 1917, building brick and fireproofing contributed \$3,101,585, or about 64.8 per cent. Sewerpipe and tile production in 1917 were valued at \$1,218,470, or 25.5 per cent of the total. The total value of the production of pottery was \$604,495, of which \$122,878 only is estimated as attributable to Canadian clays, the balance being credited to imported clays.

The value of the production of fireclays and firebricks from domestic clay, was \$326,511, and the production of kaolin was 533 tons valued at \$9,594.

The imports of clays and clay products reached a total value during the calendar year 1917 of \$6,610,837, which exceeded the domestic production by \$1,831,804. The total imports in 1916 were valued at \$4,554,167.

Clay imports are classified by the Department of Customs under three main divisions, including: brick and tile; earthenware and chinaware; and clays. The imports of clays in 1917 were valued at \$416,209, and included chiefly china-clay and fireclay, with a small quantity of pipe clay, and other clays not classified. The value of china-clay imported was \$97,856, and of fireclay, \$283,746.

The total value of the exports of clay products in 1917 was \$138,143, and included 4,464 M. building brick, valued at \$40,039; manufactures of clay, valued at \$83,600, and earthenware, valued at \$14,504.

The annual value of clay products from 1899 to 1917 is shown in the following table:—

Calendar Year.	Value.
1899.....	\$ 2,988,099
1900.....	3,195,105
1901.....	3,382,706
1902.....	3,625,489
1903.....	4,034,289
1904.....	3,841,560
1905.....	4,709,842
1906.....	5,072,635
1907.....	5,772,117
1908.....	4,500,702
1909.....	6,450,840
1910.....	7,629,956
1911.....	8,359,933
1912.....	10,575,869
1913.....	9,504,314
1914.....	6,871,957
1915.....	3,914,488
1916.....	4,120,805
1917.....	4,779,038

The imports classified under brick and tile which apparently include products other than clay products, such as refractory silica brick, and magnesite brick, were valued in 1917 at \$3,599,046, as compared with a value in 1916 of \$2,048,259. A large portion of these imports is made up of firebrick, about 75 per cent of the total in 1917. The imports of magnesite brick during the last nine months of the year were valued at \$470,801.

The imports of earthenware and chinaware, of which the most important is tableware, were valued in 1917 at \$2,595,582, as compared with a value of \$2,180,414 in 1916. These imports are chiefly of a class of goods not manufactured in Canada and for which the raw materials are not as yet obtainable from Canadian sources.

CONSUMPTION OF CLAY PRODUCTS.

An approximate estimate of the annual value of the consumption of

clay products in Canada may be deduced from the available records of production—exports and imports. The total value of the consumption for the year 1917 estimated on this basis was \$11,251,732, of which 42.5 per cent was of domestic production. The approximate value of consumption in 1916 was \$8,594,860, of which 48 per cent was of domestic production. The following table shows the annual value of consumption of clay products since 1909 as well as the percentage of the total obtained from domestic sources. It will be observed that the maximum value of consumption was reached in 1912, but that in 1915 the consumption had fallen to but little more than one-third of this maximum. In 1916 and 1917, however, the value of consumption has again showed a substantial increase, though a much larger percentage of the total is now obtained outside of Canada than formerly. This increased consumption has been made up largely of refractory brick, including firebrick, silica brick, and magnesite brick, used as furnace linings.

KAOLIN PRODUCTION.

The shipments of kaolin in 1917 were 533 tons, valued at \$9,594, as compared with 1,750 tons, valued at \$17,500, in 1916.

The production was chiefly from the deposits in the township of Amherst, Ottawa County, Quebec, operated by the Canadian China Clay Company, of Montreal.

The plant for refining the clay is situated two miles from St. Remi d'Amherst, and 7 miles from Huberdeau, the terminus of the Canadian Northern Quebec Railway, 46 miles northwest of Montreal.

The imports of china-clay ground and unground, into Canada during the twelve months ending December, 1917, were 11,596 tons, valued at \$97,856, or \$8.44 per ton, as against imports 19,062 tons, valued at \$114,110, or \$5.99 per ton in 1916.

The annual production of pottery since 1888 is shown in the following table:—

Calendar Year.	Value.
1888.....	\$ 27,750
1889.....	195,242
1890.....	253,844
1891.....	265,811
1892.....	213,186
1893.....	162,144
1894.....	151,588
1895.....	163,427
1896.....	129,629
1897.....	214,675
1898.....	185,000
1899.....	200,000
1900.....	200,000
1901.....	200,000
1902.....	200,000
1903.....	200,000
1904.....	140,000
1905.....	120,000
1906.....	150,000
1907.....	253,809
1908.....	200,541
1909.....	285,285
1910.....	250,924
1911.....	102,493
1912.....	43,955
1913.....	53,533
1914.....	35,371
1915.....	64,900
1916.....	61,069
1917.....	122,878

SEWER PIPE AND DRAIN TILE.

The total value of the sales of sewerpipe in 1917 was \$783,762, as compared

[Continued on page 9.]