
MINERAL PRODUCTION IN IOWA

IN 1906

BY

S. W. BEYER

VALUE OF MINERAL PRODUCTION

1904

Coal.....	\$10,439,496
Clay.....	3,487,376
Stone.....	542,170
Gypsum.....	469,432
Lead.....	2,619
Sand-lime brick.....	13,907
Total.....	\$14,955,000

1905

Coal.....	\$10,495,593
Clay.....	3,408,547
Stone.....	533,509
Gypsum.....	589,055
Lead.....	1,500
Sand-lime brick.....	38,642
Mineral water*.....	36,200
Total.....	\$15,103,046

1906

Coal.....	\$11,619,455
Clay.....	3,477,237
Stone including lime.....	577,782
Gypsum.....	573,498
Lead and zinc.....	26,300
Sand-lime brick.....	38,255
Mineral water*.....	27,540
Sand and gravel.....	74,380
Total.....	\$16,414,447

* Mineral paint is combined with mineral water.

MINERAL PRODUCTION IN IOWA FOR 1906.*

BY S. W. BEYER.

The mineral production for 1906 totals considerably over a million dollars more than for 1905. The principal gain is in the value of the coal output which shows not only an increased tonnage but also an increase in price for the year. The production

*The policy of co-operation practiced during the past ten years between the Federal and State Surveys was materially modified for 1906. All, or practically all, of the correspondence was carried on from the central office at Washington. A list of the producers who could not be called up by letter was furnished the local office and these, as far as practicable, were visited by a representative of the State Survey. Tabulation sheets were supplied by the U. S. Geological Survey for Coal, Clay, Stone, Gypsum, Mineral paints, Sand-lime brick and Sand and gravel. The Statistics for lead and zinc, cement products, and iron ore were collected and compiled by the local office. It is a matter of regret that the data supplied will not permit tabulation by counties for all of the mineral products.

of sand and gravel is included in mineral production for the first time in a report of the Iowa Geological Survey. As in the case of quarry products it is almost impossible to secure accurate figures on account of the large number of small operators who produce only for their own use. The aggregate output is undoubtedly much greater than the figures show.

Coal.

The production of coal for 1906 shows a healthy growth in the industry for the year. This growth represents more than simply increased tonnage. Many of the larger companies installed during the year betterments in the surface equipment and mechanical haulage underground. The Consolidation Coal Company has in addition installed coal cutting machinery, greatly increasing the efficiency of the plants.

The subjoined table shows the growth in tonnage, value, average price per ton, average number of days worked and average number of men employed during the past eight years, according to the authority of the U. S. Geological Survey:

YEAR	TOTAL TONS	VALUE	AVERAGE PRICE	AVERAGE NUMBER OF DAYS WORKED	AVERAGE NUMBER OF MEN EMPLOYED
1899	5,177,479	\$ 6,397,338	\$ 1.24	229	10,971
1900	5,202,939	7,155,341	1.38	228	11,608
1901	5,617,499	7,822,805	1.39	218	12,653
1902	5,904,766	8,660,287	1.47	227	12,434
1903	6,365,233	10,439,139	1.64	232	13,583
1904	6,507,655	10,439,496	1.60	213	15,373
1905	6,798,609	10,586,381	1.56	209	15,113
1906	7,266,224	11,619,455	1.60	224	15,260

The output, disposition, value, average price per ton, average number of days worked and average number of men employed by counties is given in tabulated form below.

COAL PRODUCTION OF IOWA IN 1906, BY COUNTIES.

COUNTY	Loaded at mines for shipment	Sold to local trade and used by employees	Used at mines for steam and heat	Total quantity	Total value	Average price per ton	Average number of days active	Average number employees
	Short Tons	Short Tons	Short Tons	Short Tons	\$	\$		
Adams	200	11,488	36	11,724	27,154	2.32	150	67
Appanoose	1,039,610	47,842	14,143	1,101,595	2,112,169	1.92	199	3,254
Boone	213,677	14,767	4,666	233,110	436,497	1.87	179	844
Greene	2,400	16,306	1,110	19,816	40,377	2.04	178	62
Guthrie	2,128	9,895	40	12,063	31,307	2.60	140	68
Jasper	353,914	16,193	18,475	388,582	627,653	1.62	224	835
Keokuk	1,000	15,504	640	17,144	32,067	1.87	174	46
Mahaska	551,392	31,167	19,928	602,487	876,041	1.45	229	1,126
Marion	339,445	22,894	10,411	372,750	530,847	1.42	208	640
Monroe	2,369,445	37,458	51,570	2,458,473	3,345,264	1.36	248	3,712
Polk	1,095,573	238,410	35,523	1,369,506	2,363,393	1.73	252	2,793
Taylor	12,255	6,777	20	19,052	40,909	2.15	177	82
Van Buren	9,825	2,209	103	12,137	24,418	2.01	174	39
Wapello	166,757	72,443	4,056	243,256	378,072	1.55	198	578
Wayne	117,850	18,744	100	136,694	260,178	1.90	214	433
Webster	98,118	8,868	2,536	109,522	218,180	1.99	224	323
Other counties (a) and small mines	87,619	62,687	8,007	158,313	274,929	1.74	209	358
Total	6,461,208	633,652	171,364	7,266,224	\$ 11,619,455	\$ 1.60	224	15,260

a Dallas, Jefferson, Lucas, Page, Scott and Warren.

COAL PRODUCTION.

It is apparent when the above table is compared with the corresponding table for 1905 that of the leading coal producing counties, Appanoose, Jasper, Marion, Monroe, Polk and Wapello show good increases while Boone, Mahaska, Wayne and Webster show a decline. Keokuk and Lucas have dropped out of the list of large producers. Considerable exploratory work has been done in the latter county during the past few years with encouraging results and it may be confidently predicted that Lucas will regain its place with the large producers in the near future.

According to the authority of the U. S. Geological Survey, Iowa ranked ninth in production and eighth in value of the bituminous coal output for 1905. The ten leading producers for the year were as follows:

STATE	TONNAGE	VALUE
1 Pennsylvania.....	118,413,637	\$ 113,390,507
2 Illinois.....	38,434,363	40,577,592
3 West Virginia.....	37,791,580	32,341,790
4 Ohio.....	25,552,950	26,486,740
5 Indiana.....	11,895,252	12,492,255
6 Alabama.....	11,866,069	14,387,721
7 Colorado.....	8,826,429	10,810,978
8 Kentucky.....	8,432,523	8,385,232
9 Iowa.....	6,798,609	10,586,381
10 Kansas.....	6,423,979	9,350,542

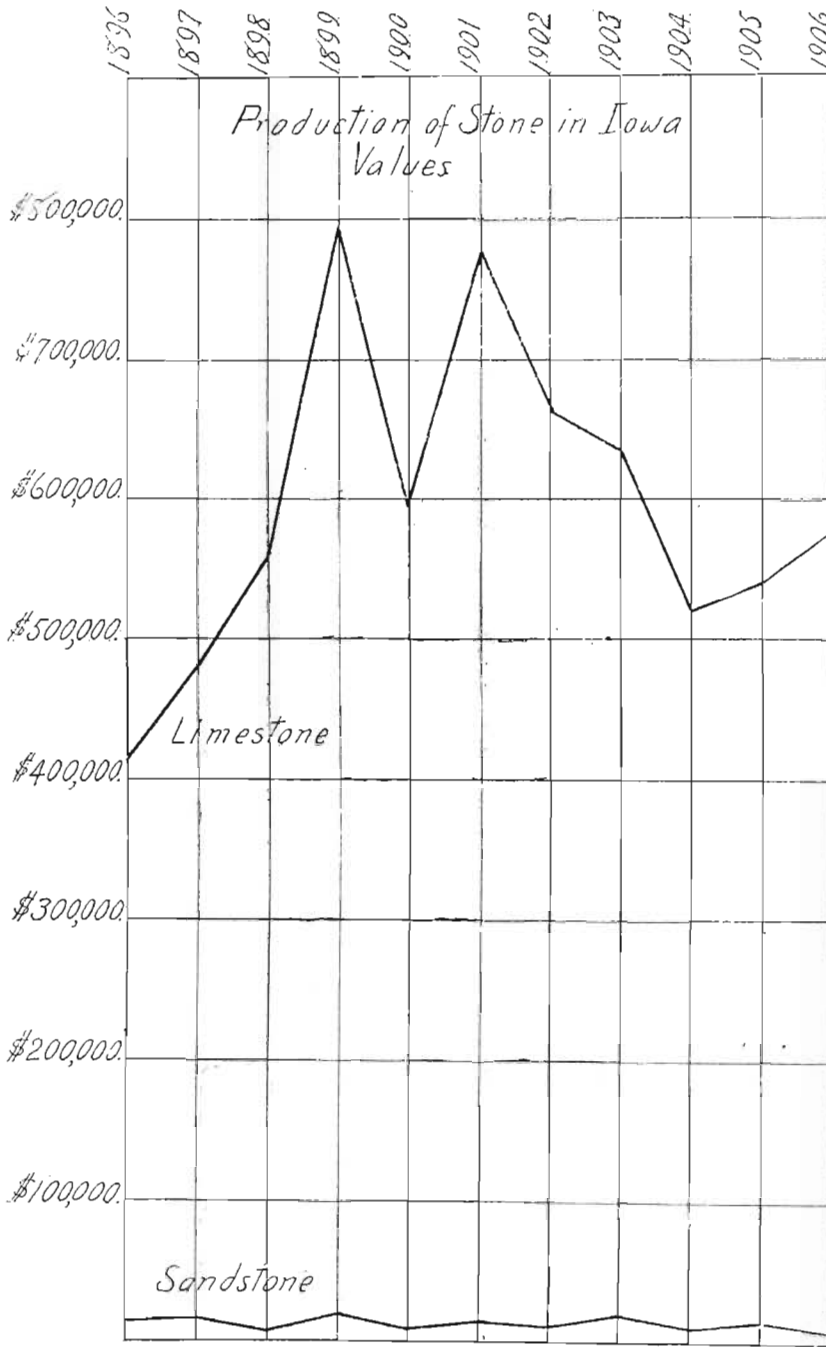
The outlook for 1907 is for a continuance of the high price per ton with possibly a slight decrease in output.

Clay.

Iowa Clay products sold during the year 1906 were distributed as follows:

	THOUSANDS	VALUE
Common brick.....	169,771	\$ 1,125,009
Vitrified paving brick.....	16,930	185,990
Front brick.....	8,871	101,795
Fire brick.....	57	930
Drain tile.....		1,721,614
Sewer pipe.....		114,241
Hollow building tile or block.....		162,664
Miscellaneous.....		5,084
Total.....		\$ 3,417,327

STONE PRODUCTION.



	VALUE	
POTTERY		
Red earthen ware.....	\$	10,100
Stone ware.....		44,500
Miscellaneous.....		3,400
Total.....	\$	58,000
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	TONS	VALUE
CLAY MINED		
Fire clay.....	355	\$ 560
Miscellaneous.....	1,650	1,350
Total.....		\$ 1,910

The state still maintains her lead in the manufacture of drain tile, Indiana and Ohio being her closest competitors.

Stone.

The value of stone produced for 1906 shows a slight increase over the preceding year. The output was distributed as follows:

Limestone:		
Rough building.....	\$ 105,203	
Dressed building.....	31,350	
Paving.....	6,527	
Curbing.....	8,030	
Flagging.....	7,632	
Rubble.....	84,553	
Riprap.....	35,810	
Crushed stone:		
Road making.....	38,189	
Railroad ballast.....	26,268	
Concrete.....	142,124	
Miscellaneous.....	8,129	
Lime burned.....	78,366	
		\$ 572,181
Sandstone.....		5,601
Total.....		\$ 577,782

GYPSUM AND LIME.

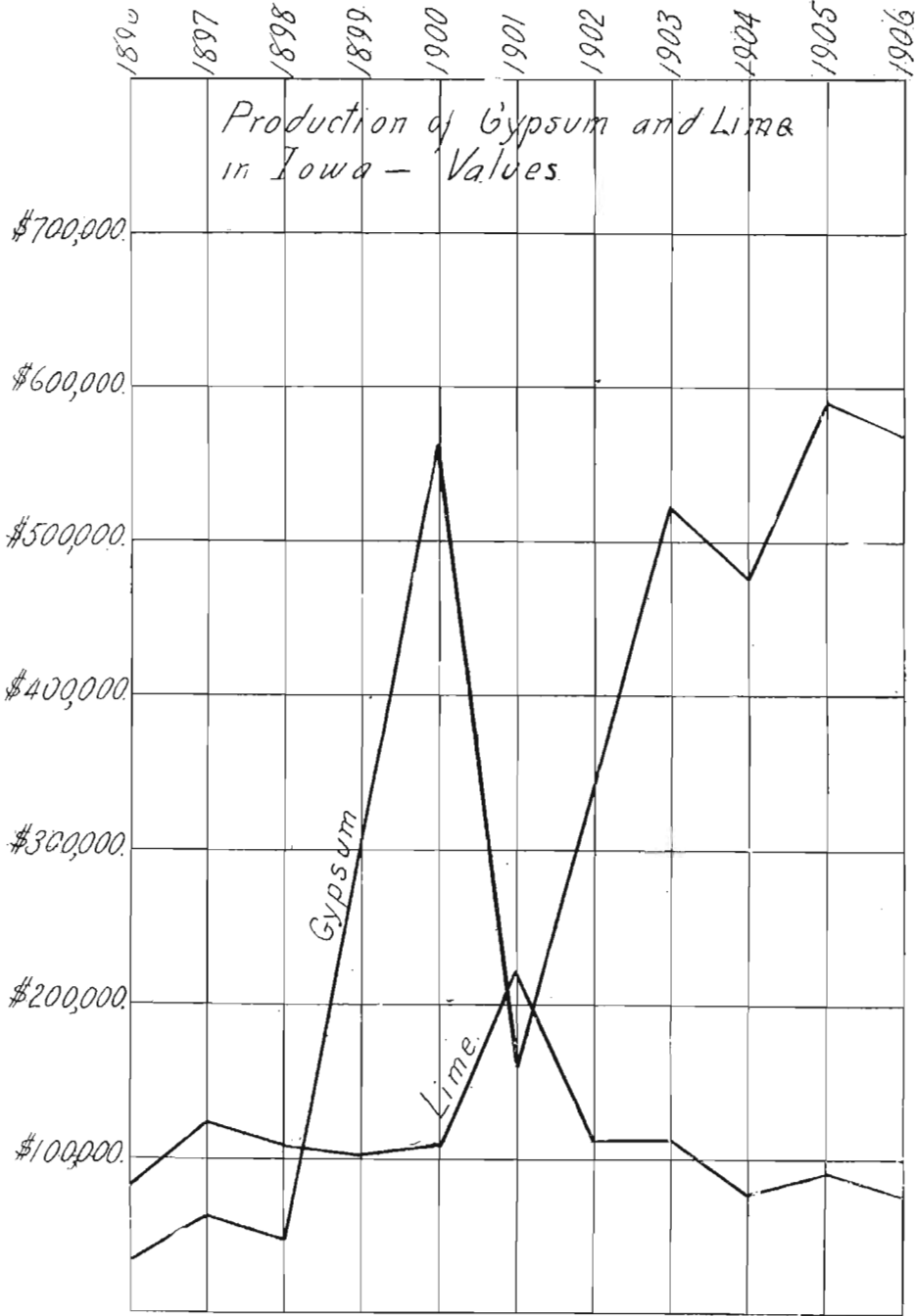


PLATE III. — Production of Gypsum and Lime in Iowa from 1896 to 1906.

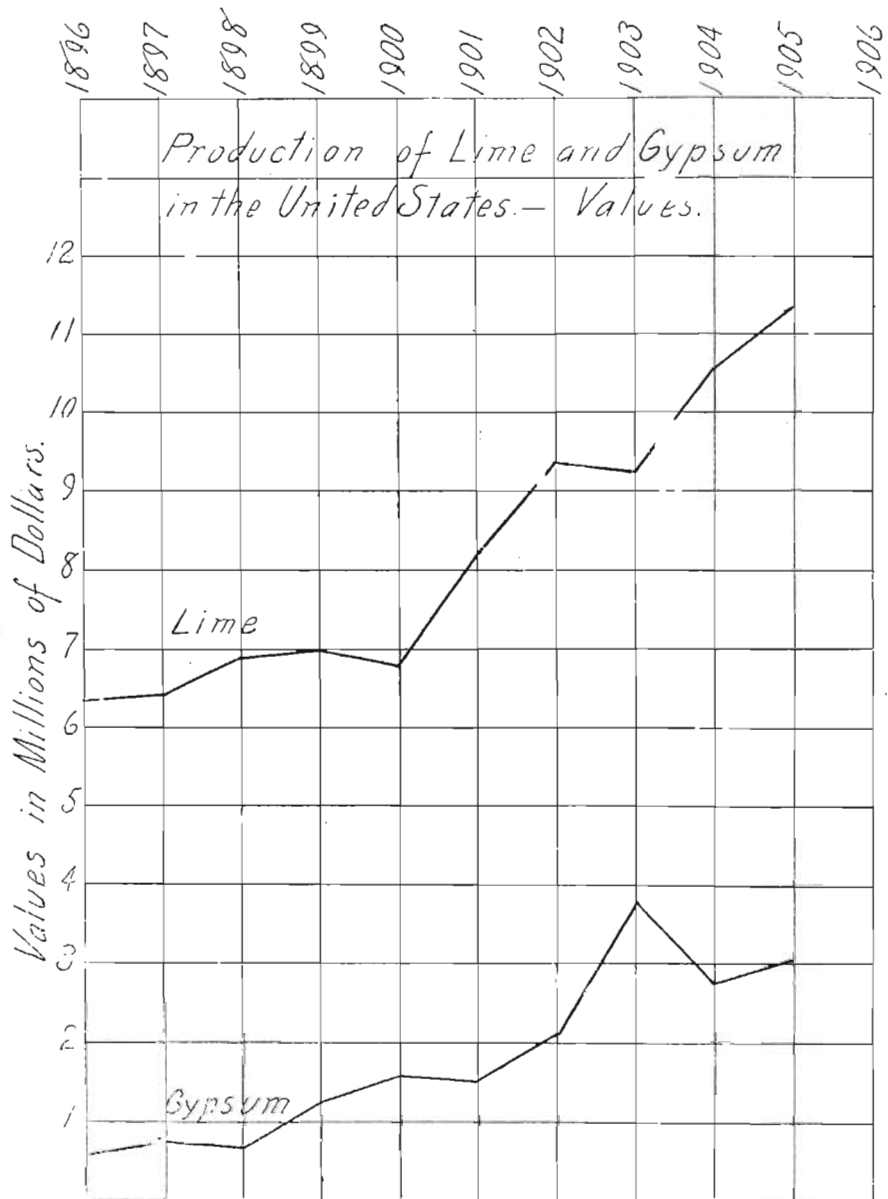


PLATE IV.—Production of Lime and Gypsum in the United States from 1896 to 1905.

Gypsum.

The total production shows a slight decline when compared with the preceding year. Two new plants were built but were not put in operation until early in 1907. The statistics of the industry for the year 1906 are as follows:

	TONS	VALUED AT
Quantity crude gypsum mined.....	286,857	\$ 199,222
Distributed as follows:		
Sold crude—		
To Portland cement mills	8,390	11,973
As land plaster.....	3,751	6,922
Miscellaneous uses.....	1,472	3,441
Sold as Plaster-of-Paris, Wall Plaster, etc.....	146,526	551,162
Total.....	160,139	\$ 573,498

Sand and Gravel.

The Survey publishes for the first time since its organization statistics of production for sand and gravel. Of necessity, reports could be secured only for the commercial pits. The pit products may be classified as follows, calculated in short tons:

	QUAN- TITY	VALUE
Molding sand.....	4,952	\$ 5,152
Building sand.....	127,271	45,158
Fire sand.....	1,800	1,400
Engine sand.....	8,550	2,100
Other sand.....	14,975	4,863
Gravel.....	27,125	15,707
Total.....	184,673	\$ 74,380

Lead and Zinc.

Mining and exploratory operations were carried on with more than the usual vigor during the year in the Dubuque region. This was due largely to the greater demand for both lead and zinc. The price of lead ore reached \$42.50 per thousand during the year, the highest in more than a third of a century.

LEAD.

About 600,000 pounds of lead ore were produced in Iowa during the year and were sold at an average price of \$33.00 per thousand pounds. The price at the end of the year was on the advance and a consequent increase in output for 1907 is expected.

ZINC.

For a number of years no zinc ore has been marketed from the Dubuque region. The year 1906 marks the rejuvenation of the industry. About 500 tons of "dry bone" were sold at an average of \$13.00 per ton. While no "jack" was shipped a considerable quantity of the disseminated zinc sulphide ore was mined and is now held in stock ready to be milled. A fifty-ton mill is now in process of construction by the Avenue Top Mining Company and will be ready for operation September 1, 1907. The mill is so arranged that its capacity can be doubled easily. It is reported that the Superior Mining Company contemplates building a mill in the near future.

Several companies have discovered and are now opening up extensive ore bodies and are only awaiting better facilities for cleaning and handling the output before mining on a large scale is undertaken. The outlook for the immediate future of the district is brighter than for many years and a greatly increased output for 1907 may be predicted with confidence.

SUMMARY OF PRODUCTION FOR 1906.

Lead (Galena) 600,000 pounds.....	\$ 19,800
Zinc (Dry Bone) 500 tons.....	6,500
Total.....	\$ 26,300

Iron.

Iowa marketed no iron ore during the year 1906. The year was not, however, without results as to the future of the iron industry in the state. The Missouri Iron Company with headquarters in Saint Louis has for more than eighteen months been exploring Iron Hill near Waukon, and neighboring well known iron ore bodies with the result that they are at the present time installing a modern washer to handle six hundred tons of finished

ore per day. The plant will be supplied with power by a 400-horse power gas producer engine direct connected to D. C. generators and all crushers and other machinery will be direct connected to motors. It is believed that by washing, jigging and roasting the metallic iron content of the ore can be brought up to between 55 and 60 per cent. The ore will probably be shipped by rail to the river and then by boat to Saint Louis for reduction.

Mineral Water.

The bottling and shipping of mineral water has become an established industry in Iowa. The most important producers are the springs at Colfax in Jasper county. The amount sold for 1906 was 227,500 gallons valued at \$23,700 or at an average price of eleven cents per gallon. It was distributed as follows:

Medicinal water.....	\$ 23,150
Table water.....	550
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Total.....	\$ 23,700

PORTLAND CEMENT.

The year 1906 was important in the history of the development of the mineral resources of the state in the fact that two Portland cement companies were organized and commenced the building of plants at Mason City and Des Moines, respectively. The former plant will reach completion on or about November 1, 1907. The Des Moines plant will not be in operation before the middle of 1908. A third company has been organized recently and is planning to erect a plant at Harvey, in Marion county.

Cement Products.

The increase in the use of Portland cement is little less than phenomenal. The manufacture of cement products has become a recognized industry in a large proportion of the towns of the state, especially throughout the north central portion, where structural materials are scarce. The principal products are building block, cement brick and drain tile. The industry is yet

MINERAL PRODUCTION OF IOWA.

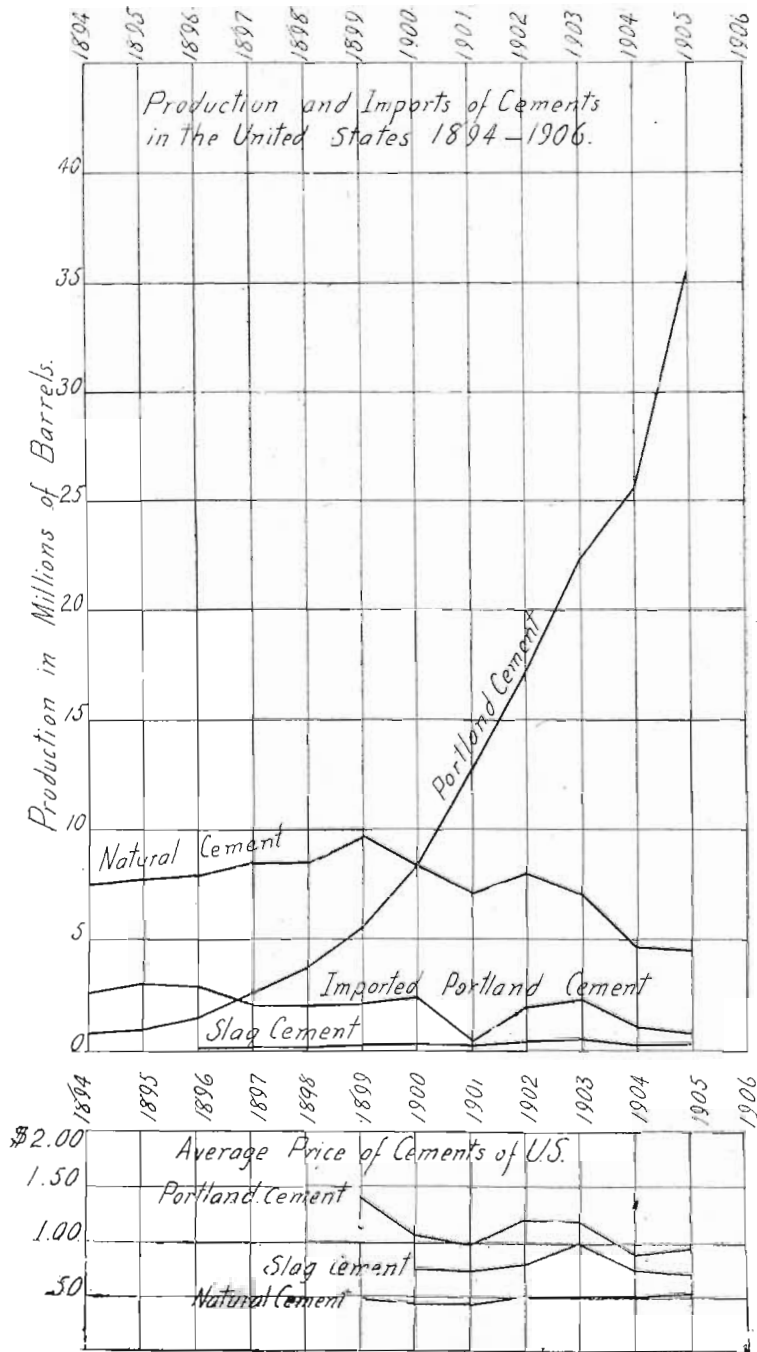


PLATE V.—Production, imports and prices of cements in the United States from 1894 to 1906.

in its infancy. The leading products marketed during the year were as follows:

Building block.....	\$ 207,195
Cement brick.....	24,379
Drain tile.....	102,535
Fence posts.....	11,497
Roof tile.....	5,215
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Total.....	\$ 350,821

A much larger amount of cement was used in the building of sidewalks, floors, foundations, chimneys, water tanks and fire-proofing.

