

STATE GEOLOGICAL SURVEY.

Governor C. S. Deneen, T. C. Chamberlin, E. J. James, Commissioners.

H. Foster Bain, Director.

8
14.65
6.05
4.3

CIRCULAR NO. 5.

The Mineral Production of Illinois in 1908

BY

R. S. BLATCHLEY.

URBANA:
University of Illinois.
June, 1909.

The Mineral Production of Illinois in 1908.

(By E. S. BLATCHLEY.)

INTRODUCTION.

The statistics of the mineral production in Illinois for the calendar year 1908 have been gathered by the State Geological Survey, in co-operation with the United States Geological Survey. The plan differed from that of previous years since the inquiry blanks were returned to the State Survey for tabulation before being forwarded to the U. S. Geological Survey in Washington. The mailing lists included over 2,000 producers of one or more of the following materials: Coal, coke, clay, pottery, brick, tile, stoneware, sandstone, sand-lime brick, sand, gravel, mineral waters, limestone, gas and oil.

The methods employed in gathering statistics and the hearty co-operation of the Illinois producers in sending in their statements, gave the work an efficiency of 98 per cent. This shows that the producers have a keen interest in an annual statement of the mineral output, which in the last four years has increased over 60 per cent. The unutilized mineral wealth of the State is vast, and promises a much greater increase in production in the future.

While the collection of statistics was placed in the hands of the writer, valuable contribution was made by Mr. E. F. Lines and Mr. Jon Udden of the survey, who made personal visits to get reports not sent in by mail.

The mineral production of Illinois for the year 1908 shows the decrease which was general throughout the United States in comparison with that for 1907. It was due mainly to the financial depression of that year. Illinois suffered perhaps less than any other state with a loss in values of 14.2 per cent, while that of the majority of other states was from 20 to 25 per cent. The yield of certain particular minerals of the various states decreased as much as 40 to 50 per cent, while in a few instances there was a slight increase.

The total value of Illinois mineral products in 1908 was \$130,576,694, a decrease from 1907 of \$21,644,590 or 14.2 per cent. This report includes \$36,063,792 for pig iron and spelter which were produced from minerals, in part, shipped into the State. The total value in 1907 was \$152,221,284 of which \$58,843,608 was for pig iron and spelter. Without pig iron or spelter, the total value of products was \$94,512,902 in 1908, as compared to \$93,377,676 in 1907. This is an increase of \$1,135,226 or 1.22 per cent. Thus, the depression in the iron and steel business alone was sufficient to cause a net loss for the year.

COAL.

The production of coal in Illinois for 1908, was 47,608,161 tons, valued at \$49,936,159. This was a decrease from 1907 of 3,708,985 tons, and in value of \$4,751,223 or of 7.2 per cent and 8.7 per cent, respectively. This percentage of decrease was less by far than in any of the other states, Illinois being almost alone in holding its production. The State, in rank of production, remains in second place and well ahead of West Virginia.

The coal of each inspection district in 1908 and in 1907 is given in order of tonnage in the table below. The order of the five leading districts was the same in both years, but the position of the remaining districts was completely changed.

Coal Output by Inspection Districts in 1907 and 1908.

1907.			1908.			
Order.	District No.	Tons.	Order.	District No.	Tons.	Value.
1.....	10	8,669,174	1.....	10	8,901,501	\$3,669,059
2.....	8	8,578,590	2.....	8	7,124,560	6,395,777
3.....	7	7,349,854	3.....	7	6,883,987	6,882,190
4.....	9	6,461,573	4.....	9	6,086,776	6,412,854
5.....	6	6,034,628	5.....	6	5,759,046	5,601,452
6.....	5	3,243,019	6.....	1	2,831,848	4,306,047
7.....	1	3,216,000	7.....	5	2,693,922	2,778,102
8.....	2	2,717,177	8.....	4	2,352,985	2,755,855
9.....	4	2,534,993	9.....	3	2,244,127	3,085,984
10.....	3	2,436,102	10.....	2	2,129,406	3,169,725

A notable change took place in the rank of the largest producing counties from 1907 to 1908. In 1907, eighteen counties produced over 1,000,000 tons, while in 1908, only sixteen reached that mark and Marion and Peoria counties fell back. In 1907, Franklin county produced 1,306,966 tons and ranked fifteenth. In 1908, it jumped to eighth place with a production of 2,187,383 tons. In 1907, Bureau county stood ninth, but in 1908, it dropped to twelfth place, the production falling off nearly one-half million tons. The other changes were merely differences of one or two hundred tons as indicated in the following table:

Counties Producing Over One Million Tons of Coal in 1907 and 1908.

1907.				1908.			
Order.	County.	District.	Tons.	Order.	County.	District.	Tons.
1.....	Williamson.....	10	5,697,944	1.....	Williamson.....	10	5,670,474
2.....	Sangamon.....	6	5,160,042	2.....	Sangamon.....	6	5,014,488
3.....	St. Clair.....	8	4,511,879	3.....	Macoupin.....	7	3,891,850
4.....	Macoupin.....	7	4,507,270	4.....	St. Clair.....	8	3,697,611
5.....	Madison.....	8	3,927,721	5.....	Madison.....	8	3,386,820
6.....	Vermilion.....	5	2,975,253	6.....	Saline.....	10	2,543,257
7.....	Saline.....	10	2,247,842	7.....	Vermilion.....	5	2,457,885
8.....	Fulton.....	4	2,113,643	8.....	Franklin.....	8	2,187,333
9.....	Bureau.....	2	2,010,762	9.....	Fulton.....	4	2,054,400
10.....	Perry.....	9	1,784,469	10.....	Perry.....	8	1,576,891
11.....	LaSalle.....	1	1,677,990	11.....	LaSalle.....	1	1,537,172
12.....	Christian.....	7	1,368,159	12.....	Bureau.....	2	1,512,972
13.....	Grundy.....	1	1,327,321	13.....	Montgomery.....	7	1,410,978
14.....	Franklin.....	9	1,306,966	14.....	Christian.....	7	1,377,167
15.....	Clinton.....	9	1,302,391	15.....	Grundy.....	1	1,081,443
16.....	Montgomery.....	7	1,289,021	16.....	Clinton.....	9	1,078,849
17.....	Marion.....	9	1,185,533				
18.....	Peoria.....	3	1,103,312				

The following table shows by counties the tonnage and value of Illinois coal produced in 1908. Figures are shown for 574 producers representing fifty-four counties in the State. The tonnage is divided into three classes, of which the first is coal shipped from the mines. The second class shows coal sold to local trade, including brick plants and that used by employes, and the last or miscellaneous class, includes coal used for steam and heat at the mines, and in one case, for the manufacture of coke. The figures for 1907 are also given, in order to provide a means of comparison for the two years. Since reports of individual operators are confidential, the method of the Federal Survey has been adopted to conceal productions. If there are less than three operators in one county or if there are only three and one of them has an exceptionally large output, the county production is hidden by putting it under the item of "other counties." The average price per ton in 1908, was \$1.048 as against \$1.065 in 1907.

COAL.

The production of coal in Illinois for 1908, was 47,608,161 tons, valued at \$49,936,159. This was a decrease from 1907 of 3,708,985 tons, and in value of \$4,751,223 or of 7.2 per cent and 8.7 per cent, respectively. This percentage of decrease was less by far than in any of the other states, Illinois being almost alone in holding its production. The State, in rank of production, remains in second place and well ahead of West Virginia.

The coal of each inspection district in 1908 and in 1907 is given in order of tonnage in the table below. The order of the five leading districts was the same in both years, but the position of the remaining districts was completely changed.

Coal Output by Inspection Districts in 1907 and 1908.

1907.			1908.			
Order.	District No.	Tons.	Order.	District No.	Tons.	Value.
1.....	10	8,669,174	1.....	10	8,901,501	\$3,609,059
2.....	8	8,578,590	2.....	8	7,124,560	6,395,777
3.....	7	7,349,854	3.....	7	6,883,987	6,882,196
4.....	9	6,461,573	4.....	9	6,086,776	6,412,854
5.....	6	6,034,628	5.....	6	5,759,046	5,601,432
6.....	5	3,243,019	6.....	1	2,831,848	4,306,047
7.....	1	3,216,000	7.....	5	2,693,922	2,778,162
8.....	2	2,717,177	8.....	4	2,352,988	2,755,822
9.....	4	2,534,993	9.....	3	2,244,127	3,085,081
10.....	3	2,436,102	10.....	2	2,129,406	3,109,723

A notable change took place in the rank of the largest producing counties from 1907 to 1908. In 1907, eighteen counties produced over 1,000,000 tons, while in 1908, only sixteen reached that mark and Marion and Peoria counties fell back. In 1907, Franklin county produced 1,306,966 tons and ranked fifteenth. In 1908, it jumped to eighth place with a production of 2,187,383 tons. In 1907, Bureau county stood ninth, but in 1908, it dropped to twelfth place, the production falling off nearly one-half million tons. The other changes were merely differences of one or two hundred tons as indicated in the following table:

Counties Producing Over One Million Tons of Coal in 1907 and 1908.

1907.				1908.			
Order.	County.	District.	Tons.	Order.	County.	District.	Tons.
1.....	Williamson...	10	5,697,944	1.....	Williamson...	10	5,670,474
2.....	Sangamon...	6	5,160,042	2.....	Sangamon...	6	5,014,488
3.....	St. Clair...	8	4,511,879	3.....	Macoupin...	7	3,891,850
4.....	Macoupin...	7	4,507,270	4.....	St. Clair...	8	3,697,611
5.....	Madison...	8	3,927,721	5.....	Madison...	8	3,366,820
6.....	Vermillion...	5	2,973,253	6.....	Saline...	10	2,513,257
7.....	Saline...	10	2,247,842	7.....	Vermillion...	5	2,457,885
8.....	Fulton...	4	2,113,643	8.....	Franklin...	8	2,187,383
9.....	Bureau...	2	2,010,762	9.....	Fulton...	4	2,054,400
10.....	Perry...	9	1,784,469	10.....	Perry...	8	1,576,891
11.....	LaSalle...	1	1,677,990	11.....	LaSalle...	1	1,557,172
12.....	Christian...	7	1,368,159	12.....	Bureau...	2	1,512,972
13.....	Grundy...	1	1,327,321	13.....	Montgomery...	7	1,410,978
14.....	Franklin...	9	1,306,966	14.....	Christian...	7	1,377,167
15.....	Clinton...	9	1,302,391	15.....	Grundy...	1	1,081,443
16.....	Montgomery...	7	1,289,021	16.....	Clinton...	9	1,078,849
17.....	Marion...	9	1,185,533				
18.....	Peoria...	3	1,103,312				

The following table shows by counties the tonnage and value of Illinois coal produced in 1908. Figures are shown for 574 producers representing fifty-four counties in the State. The tonnage is divided into three classes, of which the first is coal shipped from the mines. The second class shows coal sold to local trade, including brick plants and that used by employes, and the last or miscellaneous class, includes coal used for steam and heat at the mines, and in one case, for the manufacture of coke. The figures for 1907 are also given, in order to provide a means of comparison for the two years. Since reports of individual operators are confidential, the method of the Federal Survey has been adopted to conceal productions. If there are less than three operators in one county or if there are only three and one of them has an exceptionally large output, the county production is hidden by putting it under the item of "other counties." The average price per ton in 1908, was \$1.048 as against \$1.065 in 1907.

Tonnage and Value of Coal in 1907 and 1908.

Counties.	1908.						1907.		
	Loaded at mine for shipping.	Sold to local trade and used by employes.	Used at mines for steam heat and coke.	Total tonnage	Total value.	Number of producers.	Tonnage.	Value.	Number of producers.
Bond	*	*				2	*	*	
Bureau	1,398,990	40,701	73,281	1,512,972	\$2,205,827	9	2,010,762	\$2,979,557	11
Calhoun	*	*				1	*	*	
Christian	1,214,217	94,511	68,439	1,377,167	1,478,887	7	1,368,159	1,451,625	7
Clinton	1,009,470	21,504	47,875	1,078,849	985,296	5	1,302,391	1,232,664	4
Edgar	*	*				1	*	*	
Franklin	2,102,026	28,832	57,025	2,187,883	2,231,145	9	1,306,966	1,334,744	9
Fulton	1,961,024	54,465	38,911	2,054,400	2,351,700	39	2,113,643	2,387,615	26
Gallatin	42,700	12,498	4,469	59,667	59,879	7	78,055	81,445	8
Greene	*	9,506		9,506	18,135	3	*	*	
Grundy	1,008,324	46,438	26,681	1,081,443	1,603,153	14	1,327,321	1,945,686	14
Hamilton	*	*				1	*	*	
Hancock	*	*				1	*	*	
Henry	67,810	67,409	2,327	137,546	235,124	15	149,721	246,057	16
Jackson	528,630	42,132	57,341	628,103	861,112	13	645,333	819,504	12
Jefferson	*	*				2	*	*	
Jersey	*	*				1	*	*	
Kankakee	*	*				1	*	*	
Knox	*	39,162	823	39,985	64,198	18	40,996	67,864	12
LaSalle	1,197,641	297,953	61,578	1,557,172	2,418,097	20	1,677,990	2,660,773	16
Livingston	204,554	36,267	24,815	265,636	389,185	8	303,497	424,659	10
Logan	288,190	65,206	19,584	372,980	408,836	4	477,115	509,971	7
McDonough	736	13,829	1,624	16,189	29,779	9	32,199	61,335	4
McLean	*	*				2	*	*	
Macon	95,320	134,717	5,200	235,237	325,191	3	*	*	
Macoupin	3,696,056	60,080	135,714	3,891,850	3,813,057	11	4,507,270	4,412,539	11
Madison	3,175,734	108,278	82,808	3,366,820	3,037,941	24	3,927,721	3,594,068	24
Marion	905,086	84,562	41,646	991,294	898,555	4	1,185,553	1,150,493	3
Marshall	354,188	27,683	16,455	398,326	613,421	8	482,796	753,430	8
Menard	311,133	34,010	11,166	356,309	364,663	14	389,918	413,864	13
Mercer	343,201	20,286	12,978	376,435	565,925	10	453,621	620,972	8
Montgomery	1,335,297	38,875	36,805	1,410,978	1,344,693	10	1,289,021	1,275,647	6
Morgan	*	*				2	*	*	
Moultrie	*	*				1	*	*	
Peoria	766,417	132,980	22,572	921,969	1,076,429	37	1,103,312	1,274,774	34
Perry	1,487,283	41,759	47,845	1,576,891	1,484,969	22	1,784,469	1,678,054	24
Putnam	*	*				2	*	*	

Randolph.....	687,016	47,685	16,904	751,605	685,370	14	\$24,761	779,745	14
Rock Island.....	16,950	33,062	769	50,781	74,889	9	52,993	89,479	7
St. Clair.....	3,418,517	171,359	107,635	3,697,611	3,285,221	49	4,511,879	3,805,756	47
Saline.....	2,459,489	36,601	47,167	2,543,257	2,402,453	12	2,247,842	2,217,018	7
Sangamon.....	4,606,995	259,179	149,404	5,014,488	4,804,986	29	5,160,012	5,022,248	27
Schuyler.....	13,547	1,722	1,722	15,269	22,947	8	*	*	*
Scott.....	3,427	3,427	3,427	8,427	6,655	3	17,639	23,552	7
Shelby.....	139,176	32,989	9,198	181,363	211,739	6	155,939	169,897	8
Stark.....	2,580	17,124	647	20,351	35,558	8	25,897	42,628	9
Tazewell.....	130,474	50,885	3,786	185,145	212,144	9	235,971	276,127	19
Vermilion.....	2,256,203	160,613	41,069	2,457,885	2,451,771	36	2,973,253	2,997,416	31
Warren.....	*	11,572	115	11,687	23,765	4	*	*	*
Washington.....	*	*	*	*	*	2	*	*	*
White.....	*	*	*	*	*	1	*	*	*
Will.....	148,007	9,772	4,460	162,239	257,604	4	183,985	290,558	4
Williamson.....	5,433,909	72,713	163,852	5,670,474	5,285,615	38	5,697,944	5,541,810	36
Woodford.....	*	*	*	*	*	2	*	*	*
Other Counties.....	747,745	154,237	45,470	947,452	1,375,230	2	1,271,256	1,620,804	2
Total.....	43,539,998	2,577,909	1,490,254	47,608,161	\$49,936,159	574	51,317,146	\$54,687,682	495

*Including, (for 1907), Bond, Calhoun, Greene, Hancock, Jefferson, Jersey, Kankakee, McLean, Macon, Morgan, Putnam, Schuyler, Wabash, Warren, Washington, White and Woodford.

*Including, (for 1908), Bond, Calhoun, Edgar, Hamilton, Hancock, Jefferson, Jersey, Kankakee, McLean, Morgan, Moultrie, Putnam, Washington, White and Woodford.

†One production estimated in Fulton county.

PIG IRON.

In 1907, 2,457,768 long tons of pig iron were produced with an estimated value of \$52,229,000. In 1908, there was a decided decrease in the production in all states manufacturing iron. The Illinois production for 1908, was 1,691,944 long tons valued at \$30,135,000. The decrease in quantity from 1907, was 765,824 tons or 31.16 per cent and in value \$22,094,000 or 43.3 per cent. The output of practically all of the remaining states which produce iron fell off 50 per cent.

OIL.

The most notable increase of Illinois mineral products for the last four years has been that of petroleum. In 1904, there was no record of any oil in commercial quantities. In 1905, the Eastern Illinois field was tapped at Casey and during that year there was shipped by tank cars 155,502 barrels, at an approximate value of \$116,561. In 1906, a rush to the field took place and the rapid development to the south of Casey brought in a production of 4,397,050 barrels, with a value of \$3,275,802, which raised Illinois to ninth place among petroleum producing states. Pipe lines were extended into the field that year and production was further aided by quick reliefs of the tankage on the surface. In 1907, the development extended to deeper fields around Robinson and Bridgeport where the sands were more constant in production. Individual wells brought as high as 700 to 2,000 barrels per day on initial tapping, and dropped to a steady daily production of 150 to 250 barrels. Other pipe lines were introduced and the production in 1907 reached 24,281,973 barrels with a value of \$16,432,947. This was an increase in output over 1906 of 19,884,923 barrels or 452.0 per cent and placed Illinois third in rank of oil producing states, Oklahoma and California being first and second.

The production of oil in 1908 amounted to 33,685,106 barrels valued at \$22,648,881. This was an increase over 1907 of 9,403,133 barrels or 39 per cent. Had the pipe lines been able to receive the entire supply, the production could easily have reached 40,000,000 barrels. As a matter of fact, however, the output increased beyond the capacity of the pipe lines, which at one time during the summer, were pumping over 102,000 barrels daily, and the surface tanks on all leases became full. Thus production was discouraged and checked.

The average price per barrel in 1906 was 74 + cents. In 1907 it dropped to 67.7 cents and in 1908 to 67.2 cents. The table below shows the production of oil in Illinois from 1905 to 1908, by months:

Production of Oil from 1905 to 1908.

Month.	1905 Barrels.	1906 Barrels.	1907 Barrels.	1908 Barrels.
January		55,680	781,812	2,610,065
February		65,209	956,399	2,607,630
March		19,532	1,547,323	2,734,617
April		102,852	1,874,465	3,232,123
May		297,746	2,138,918	3,227,322
June	5,489	410,634	1,879,362	3,103,492
July	9,208	810,401	2,422,132	2,722,683
August	15,032	778,463	5,146,042	2,835,637
September	19,591	722,168	2,605,663	2,698,377
October	26,443	463,849	2,863,812	2,723,267
November	31,766	350,985	2,510,146	2,499,092
December	45,913	549,711	2,255,839	2,655,411
Total	156,502	4,397,050	21,281,973	33,685,106

CLAY AND CLAY PRODUCTS.

The value of the clay products of Illinois in 1908 was \$11,425,575 as against \$13,220,489 for 1907. This is a decrease of \$1,794,914 or 13.5 per cent. There were 425 producers of clay products representing ninety-four counties of the State.

The following table gives the detailed production of clay and clay products as far as possible. There are listed in it; (1) common brick, giving number of brick in units of a thousand, also the values; (2) drain tile values; (3) pottery values; (4) raw clay, in tons and value; (5) front; (6) vitrified, and (7) fire brick in thousands of brick, with values; (8) architectural terra cotta and fire proofing or terra cotta lumber with values; (9) fancy brick, tile not drain, and values; (10) sewer pipe values, and (11) wall coping and stove lining with values. The reference marks given are used in cases where there are less than three producers of a particular material in a given county.

The average price of common brick per thousand in Illinois in 1908, was \$4.34; of front brick, \$13.19; of vitrified brick, \$11.71; and of fire brick, \$16.17. The average value of clay in 1908 was 98 cents per ton.

Production of Clay and

COUNTY.	COMMON BRICK.		DRAIN TILE.	POT-TERY.	RAW CLAY.		FRONT BRICK.	
	Quantity thousands.	Value.	Value.	Value.	Tons.	Value.	Quantity thousands.	Value.
Adams	5,650	\$36,840					*	*
Alexander	*	*			*	*		
Bond	*	*						
Boone					*	*		
Brown								
Bureau	2,170	12,820	\$22,700					
Calhoun							*	*
Carroll	300	6,350						
Cass	1,566	11,011	4,550					
Champaign	7,786	54,001	9,221					
Christian	2,975	19,475	29,376					
Clark	1,650	9,175			*	*		
Clay								
Clinton	325	2,241						
Coles			15,000					
Cook	759,398	2,768,304		\$31,965	*	*		
Crawford	*	*						
Cumberland								
DeKalb	*	*						
De Witt	*	*						
Douglas	*	*						
DuPage	*	*						
Edgar	*	*						
Edwards								
Efingham	1,635	9,355						
Fayette	4,010	25,520						
Ford	*	*	12,676					
Franklin							*	*
Fulton	9,362	55,044						
Gallatin	560	2,300	11,700					
Greene			*	178,806	30,766	\$29,654		
Grundy	*	*			*	*		
Hamilton								
Hancock	300	5,980						
Henry	2,116	14,279	10,053					
Iroquois	1,191	8,260	57,396				*	*
Jackson	*	*	*					
Jasper	560	3,235						
Jefferson	*	*						
Jersey							*	*
Kane	4,272	26,309	62,749				*	*
Kankakee	*	*	*					
Kendall	*	*	*					
Knox	*	*						
Lake								
LaSalle	3,671	27,262	68,252	*	33,818	43,068		*
Lawrence			*					
Lee								
Livingston	6,133	46,024	141,124				*	*
Logan	1,656	9,458	12,569					
Macon	*	*						
Macoupin	1,820	11,320	*					
Madison	17,581	131,916	*		*	*	*	*
Marion	2,010	12,280	*					
Mason	*	*			*	*		
Massac					*	*		
McDonough	1,925	13,373	28,915		40,347	31,932		
McHenry			*					
McLean	3,600	10,475	48,663					
Menard	2,367	14,216	5,182					
Mercer	*	*	25,218					
Monroe	*	*	*					
Montgomery	4,990	29,960	23,275					
Morgan	565	4,448	53,220					
Moultrie	*	*	*					
Ogle	*	*	*					
Peoria	6,025	36,850	*					
Platt	*	*	*					
Pike	1,230	8,070	*					
Pulaski	*	*	*					
Randolph	*	*						

Products of Clay and Clay

COUNTY.	COMMON BRICK.		DRAIN TILE.	POT-TERY.	RAW CLAY.		FRONT BRICK.	
	Quantity thousands.	Value.	Value.	Tons.	Tons	Value.	Quantity thousands.	Value.
Richland	*	*	*	*				
Rock Island.....	10,125	\$54,700	*	*	994	\$1,888	*	*
Saline	2,700	23,200	*				*	*
Sangamon	12,413	81,044	\$16,497				*	*
Schuyler	1,800	11,400	10,748				*	*
Scott	*	*	*		*	*	*	*
Shelby	417	2,980	14,730				*	*
Stark	*	*	*				*	*
St. Clair	39,499	260,223					*	*
Stephenson.....	*	*	*				*	*
Tazewell	15,340	81,950	24,000	*			*	*
Union	*	*	*				*	*
Vermilion	*	*	15,500				*	*
Wabash	*	†	*				*	*
Warren	1,800	15,600	92,200	*			*	*
Washington	*	*	*				*	*
Wayne	1,296	9,012	*				*	*
White	1,502	5,040	21,130				*	*
Whiteside	*	*	*				*	*
Will	3,873	19,285	62,699				*	*
Williamson	*	*	*	*	*	*	*	*
Winnebago	2,150	12,450		*	*	*	*	*
Woodford.....	*	*	*	*	*	*	*	*
*Other counties.....	169,126	869,582	534,031	587,183	10,812	8,539	22,851	\$301,515
Total.....	1,122,095	\$4,873,122	\$1,413,424	\$797,954	116,732	\$114,481	22,851	\$301,515
Grand total clay and clay products.....	11,540,056							

*Including all productions marked with star for given materials.

The value of clay products and clay as compared with 1907 are shown in the table below:

Value of Clay and Clay Products in 1907 and 1908.

Material.	1907.	1908.	Decrease per cent.	Increase per cent.
Brick	\$8,412,876	\$6,997,657	16.8	
Sewer pipe and drain tile	1,693,679	1,025,764		39.7
Pottery	935,312	797,954	14.6	
Miscellaneous	2,178,622	1,704,200	21.7	
Total	\$13,220,489	\$11,425,575	13.5	
Raw clay	105,703	114,481		8.3

ZINC.

In 1908 there was manufactured in the State, 50,244 short tons of spelter, valued at \$5,928,792. In 1907, the output was 56,056 short tons valued at \$6,614,008. The loss in 1908, was 5,812 short tons and \$685,816 or 10.3 per cent for both items. Amount 4,468 tons of the 1908 production was from ores mined in Illinois, having a value of \$101,500. The value of Illinois ore in 1907 was \$37,728.

LIMESTONE.

The value of limestone produced in Illinois in 1908 amounted to \$3,122,552 as compared to \$3,774,346 in 1907. This was a decrease of \$651,794 or 17.3 per cent. Cook county furnished over half of the production, valued at \$1,892,321. Will county came next with \$427,605 and Kankakee third with \$180,740. There were 117 producers of limestone operating in twenty-nine counties of the State. The production of limestone and the uses for which it is quarried are shown in the following table:

Value of Limestone Output in 1908.

Counties.	Building stone.	Paving, curbing, flagging,	Broken stone....	Stone for road making.....	Railroad ballast and concrete..	Lime	Stone for flux..	Other purposes.	Producers
Adams.....	\$11,116		\$ 5,975	\$ 5,684	\$ 10,244	\$108,513	\$ 338		6
Boone.....	*			*					1
Carroll.....	*			*					1
Clark.....				*					1
Cook.....	12,113	\$2,479	175,818	514,785	918,870	208,707	60,240	*	16
DuPage.....		*	*	*	*			*	1
Greene.....		*	*	*	*			*	1
Hancock.....	*	*	*	*	*			*	2
Henderson.....	*	*	*	*	*			*	1
Jersey.....	*	*	*	*	*			*	2
Jo Daviess.....	150		75			600		\$ 9	3
Kane.....	700		12,483	3,584					3
Kankakee.....	750	300	61,323	41,322	72,635	4,410		75	7
LaSalle.....	*			*	*	*			2
Lee.....		1,500		19,500					3
Madison.....	11,970	600	5,913	7,800	19,460	32,750	1,150	7,424	9
McHenry.....	*	*	*	*	*	*	*		1
Monroe.....	*		*	*	*	*	*		2
Montgomery.....			*	*	*	*	*		1
Orle.....	512		20	1,260				*	1
Pike.....		*						*	1
Randolph.....	2,716		4,326	19,683	7,323		12	1,828	1
Rock Island.....			1,350	10,250	17,244	12,150		3,893	4
St. Clair.....	*		19,425	5,438	34,901		3,600	1,270	3
Stephenson.....	*				*			*	2
Vermilion.....							*	*	1
Winnebago.....	360		215	2,700		20,868			4
Will.....	10,015	3,387	220,339	63,080	47,155	4,400	79,183		19
Winnebago.....	11,061		2,291	5,640	6,556		38		7
*Other counties.....	8,983	1,387	13,040	20,005	103,489	1,553	396,157	3,425	
Total.....	\$70,446	\$9,653	\$519,072	\$726,817	\$1,237,916	\$393,951	\$540,718	\$17,930	117

Grand total—\$3,516,503—Limestone, \$3,122,552—Lime, \$393,951.

* Including Boone, Carroll, Clark, DuPage, Greene, Hancock, Henderson, Jersey, LaSalle, McHenry, Monroe, Montgomery, Pike, Stephenson and Vermilion counties.

The value of limestone production as compared with 1907 is shown in the following table:

Value of Limestone Production in 1907 and 1908.

Material.	1907.	1908.	Decrease per cent.	Increase per cent.
Building stone.....	\$ 109,430	\$ 70,446	35.6	
Paving, curbing, flagging	168,140	9,653	94.2	
Broken stone	440,672	519,072		17.7
Stone for road making	918,082	726,817	24.1	
Railroad ballast and concrete	1,618,123	1,237,916	23.5	
Lime.....	559,305	393,951	29.5	
Stone for flux.....	423,315	540,718		27.7
Other purposes.....	66,634	17,930	68.3	
Total.....	\$4,833,851	\$3,516,503	18.8	

CEMENT.

The production of Portland cement in 1908 reached 3,211,168 barrels valued at \$2,707,044. This is an increase over 1907 in quantity of 1,175,075 barrels, or 57.7 per cent and in value \$74,468 or 2.8 per cent.

The average price per barrel dropped from \$1.33 in 1906 to \$1.29 in 1907 and to 84 cents in 1908. As there was only one producer of natural and slag cement in 1908, the production is concealed in the "summary" table under the head of "other products." There were five companies producing Portland cement.

SAND AND GRAVEL.

The value of the production of sand and gravel in 1908 was \$1,533,020 as compared with \$1,367,653 for 1907. This increase of \$185,367 or 13.6 per cent, with the exception of petroleum, was the largest of any of the mineral products.

In 1908, 1,730,826 yards of sand and 3,318,278 yards of gravel were produced. The greatest increase was in the use of gravel for railroad and wagon road construction. The increase over 1907 was \$360,462 or 94.5 per cent. There were 124 producers of sand and gravel operating in thirty-three counties. The following tables show the details of the industry, and the comparative values in 1907 and 1908:

Production and Value of Sand and Gravel in 1908.

	GLASS SAND.		MOULDING SAND.		BUILDING SAND.		GRAVEL.		ENGINE SAND.		FURNACE SAND.		GRINDING AND FIRE SAND.		OTHER USES.		PRODUCERS.
	Yds.	Value.	Yds.	Value.	Yds.	Value.	Yds.	Value.	Yds.	Value.	Yds.	Value.	Yds.	Value.	Yds.	Value.	
Alexander					*	*	*	*									1
Bond			*	*	*	*	*	*									2
Bureau			4,952	\$ 2,700	*	*	35,341	\$ 13,312									3
Carroll			*	*	*	*	*	*									4
Cook					123,742	\$104,971	49,903	40,262	*	*							5
DuPage					*	*	*	*									6
Fulton					*	*	*	*									7
Hancock			*	*	*	*	*	*									8
Henderson			*	*	*	*	*	*									9
Jackson			*	*	*	*	*	*									10
JoDavies			*	*	*	*	*	*									11
Kane			16,078	10,987	99,051	44,778	550,461	161,158							*	*	12
Keudall	5,500	\$ 4,125	9,000	4,400	4,750	2,375					*	*	*	*			13
Lake					120,928	56,510	75,499	35,021	*	*			*	*	*	*	14
LaSalle	189,222	135,047	65,042	33,383	9,773	7,783	13,550	9,825			80,593	\$13,109	*	*	10,000	\$ 6,075	15
Lee			*	*	2,900	2,000	1,141,026	81,635									16
Logan			*	*	*	*	*	*							*	*	17
Madison			*	*	*	*	*	*							*	*	18
McHenry			*	*	252,292	108,521	159,024	51,608			*	*	*	*			19
Peoria					10,868	7,010	111,324	44,345							*	*	20
Piatt			*	*	*	*	*	*									21
Randolph			*	*	*	*	*	*									22
Rock Island					44,600	13,600	*	*							*	*	23
Shelby			*	*	*	*	*	*			*	*					24
St. Clair			*	*	*	*	*	*									25
Stephenson							*	*									26
Tazewell							*	*									27
Vernilion							*	*									28
Wabash					*	*	*	*							*	*	29
Warren			*	*	*	*	*	*							*	*	30
Whiteside			*	*	43,269	15,570	42,922	12,474									31
Will			*	*	27,251	13,303	452,618	84,317							*	*	32
Winnebago			*	*	88,472	36,036	66,989	26,450	*	*							33
*Other counties			184,203	33,743	249,611	80,743	612,515	181,092	37,010	\$8,952	41,892	5,295	32,985	\$24,145	31,500	28,157	34
Total	194,722	\$139,172	229,275	\$85,213	1,082,507	\$501,200	3,318,278	\$741,699	37,010	\$8,952	72,827	\$18,404	32,985	\$24,145	31,500	\$34,235	124

Grand total, 1,730,826 yards sand and 3,318,278 yards gravel. Value, \$1,553,020.

* Includes productions marked with star under given material.

Value of Sand and Gravel Production in 1907 and 1908.

Material.	1907	1908	Decrease per cent.	Increase per cent.
Glass sand	\$152,619	\$139,172	8.8	.....
Moulding sand	237,149	85,213	64.07	.....
Building sand	419,450	501,200	.....	19.4
Engine sand	29,091	8,952	69.2	.....
Furnace sand	12,330	18,404	.....	49.0
Other sands	145,757	58,380	56.9	.....
Gravel	381,237	741,699	.....	91.5
Total	\$1,367,653	\$1,553,020	.....	13.6

LIME.

There were 927,168 barrels of lime produced in Illinois in 1908, valued at \$393,951 or 42 cents per barrel. This was a decrease in value from 1907 of \$165,354 or 29.5 per cent. There were nineteen producers of lime operating in ten counties.

NATURAL GAS.

During the early stages of the oil development, all gas available was used in field operations, but in 1907 a production valued at \$143,577 was reported. In 1908, the value of gas produced in the State was \$270,360. This was an increase over 1907 of \$126,783 or 88.3 per cent. Of the 1908 production \$275,046 was for natural gas from oil bearing sands. The balance of \$13,314 was for a gas found in the surface formations or drift. This is a "marsh gas," which is colorless, and odorless, and is found with lower pressure than that of the petroleum gases.

FLUORSPAR.

There were 34,918 short tons of fluorspar produced in 1908 with a valued of \$192,179. In 1907, the production was 25,128 tons valued at \$141,971. Thus the increase for 1908 is 9,790 tons and \$50,208 or 38.9 per cent and 35.3 per cent, respectively. The extension of the open-hearth method of making steel is calling for a larger supply of spar and hence an increased production of this mineral is probable.

MINERAL WATERS.

In 1908, there were 685,763 gallons of water sold at a value of \$58,904. The figures for 1907 were 720,400 gallons, valued at \$91,760 showing a loss in 1908 of 34,637 gallons and a value of \$32,856 or 4.8 per cent and 35.8 per cent, respectively. The 1908 value includes \$23,930 for water used for medicinal purposes, and \$34,974 for table water.

LEAD.

The returns for the lead ore production for 1908 show 573 tons at a value of \$21,578. The value of 1907 production was \$61,628.

SILICA OR TRIPOLI.

In Union and Alexander counties of southern Illinois are found silica beds, probably derived from decomposed siliceous limestones. In 1908, 2,142 tons of silica was mined and sold at a value of \$17,884. There are four companies producing the material.

SANDSTONE.

There was a continued fall in the sandstone production in 1908, the value being \$12,218 as compared to \$14,996 in 1907 and \$19,125 in 1906. The decrease in 1908 was 18.5 per cent and in 1907, 21.5 per cent. The following table shows the values and uses for which sandstone was quarried:

Value of Sandstone Production.

Building Stone.	Curbing.	Rubble.	Riprap.	Roadmaking.	Other Uses.
\$3,430	\$75	\$538	\$122	\$1290	\$754

SILVER.

The lead ore, when desilverized produced 2,055 fine ounces of silver with an estimated value of \$1,356. In 1907, 2,852 fine ounces were produced with a value of \$1,900.

MISCELLANEOUS.

Under the head of miscellaneous mineral resources are included pyrite, coke and by-products, sand-lime brick and natural and slag cement, inasmuch as there are only one or two companies producing each of these products. The total value for 1908 amounts to \$2,033,760. The most of this value is for coke.

SUMMARY.

The following summary table shows comparable values of mineral production for the years 1905 to 1908, and gives the percentages of change:

Total Value of Mineral Output from 1905 to 1908.

Material.	1905	1906	1907	1908
Coal	\$40,577,592	\$40,763,062	\$54,637,392	\$49,560,459
Pig iron (estimated)	37,040,000	27,128,000	52,220,000	30,150,000
Petroleum	116,561	3,274,818	16,432,917	22,610,891
Clay	12,482,196	12,763,453	13,220,489	11,540,676
Lime (estimated) .....	.....	3,499,503	6,614,603	5,220,792
Limestone	3,511,852	2,942,531	3,774,316	3,120,552
Portland cement	1,741,160	2,461,494	2,632,576	2,700,041
Sand and gravel	693,772	1,043,041	1,307,653	1,530,020
Lime	421,559	534,118	359,395	320,751
Natural gas	7,223	87,211	143,577	200,360
Fluorspar	220,266	160,623	141,971	122,179
Mineral water	47,905	77,287	91,760	65,304
Lead ore (estimated)	48,000	65,208	61,628	55,578
Silica or tripoli .....	.....	.....	.....	10,584
Sandstone	29,133	19,125	14,996	10,218
Silver (estimated) .....	.....	.....	1,800	1,356
Natural and slag cement	166,555	188,262	174,282	.....
Pyrite .....	.....	.....	5,700	.....
*Other products	2,510,215	5,643,869	67,164	2,000,760
Total	\$99,614,059	\$126,653,410	\$152,221,284	\$120,570,694
Comparative values—				
Including pig iron and spelter ..				
Gain, per cent		27.1	20.2	14.2
Loss, per cent				
Excluding pig iron and spelter ..	\$62,574,059	\$74,025,902	\$93,377,676	\$94,512,902
Gain, per cent		18.2	26.1	1.2

* Includes in 1905: Coke with by-products and sand lime brick.

* Includes in 1906: Coke with by-products alum and aluminium sulphate, infusorial earth, sand-lime brick, Venetian red and white lead.

* Includes in 1907: Infusorial earth, metallic paint, quartz, sienna, umber and sand lime brick.

* Includes in 1908: Coke and by-products, pyrite, sand-lime brick and natural cement.