

Illinois

STATE GEOLOGICAL SURVEY.

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# The Mineral Production of Illinois in 1907

BY

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URBANA:

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[BY F. B. VAN HORN.]

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### INTRODUCTION.

During the year 1907 the work of gathering statistics of mineral production in Illinois was continued in coöperation with the United States Geological Survey. As in the previous year, the advisability of the State Survey publishing results in advance of the U. S. Survey must lead to slight inaccuracies owing to incompleteness of returns. It is safe to say, however, that any changes necessary in the figures here given will be but minor ones.

There was a remarkable increase in the output and value of mineral products in Illinois in 1907 over that of 1906. The total value in 1906 was \$68,296,908 as compared with \$152,122,648 in 1907. Of the latter figures, however, \$58,842,608 is for pig iron and spelter, which, although actually manufactured in 1906, were not included because the raw material was imported into the State. It has been thought best to include these with Illinois statistics for the year 1907, since similar products are reported by other states. Including pig iron spelter for both years, the increase was \$31,200,422, or 25.8 per cent. Without these items the increase was still more remarkable, amounting to \$24,983,132, or 36.5 per cent.

### COAL.

There was an increase in Illinois coal production in 1907 of 9,837,042 tons, the figures for the year being 51,317,146 tons, valued at \$54,687,382 as compared with 41,480,104 tons valued at \$44,763,062 in 1906, an increase of 24.2 per cent in production.

This large production again advanced Illinois to second among the coal-producing states. The increase was due in large measure to heavier demand for coal, and also to the renewed activity of mining after the recovery from the effects of the suspension in 1906. Illinois suffered more from this suspension than did West Virginia, and it is but natural that after the enforced idleness the output should increase in larger proportion. In 1906 West Virginia outranked Illinois by 1,810,246 tons, but their positions were reversed in 1907 and the Illinois production surpassed that of West Virginia by 3,225,563 tons.

In the pamphlet discussing Mineral Resources of Illinois in 1905 the area underlain by workable coal in the State was given as approximately 40,000 square miles. In May, 1908, the U. S. Geological Survey published a map by Marius R. Campbell\* showing the coal

\*This map may be obtained by remitting 10 cents to the Director, U. S. Geological Survey, Washington, D. C.

areas of the United States, and giving that of Illinois as 35,600 square miles. According to information on this map, the estimated original coal supply of Illinois was 240,000,000,000 short tons. The production for the year 1907 was 51,317,146 short tons, and the total production to January, 1908, was, including waste, 968,000,000 short tons, or .4 of one per cent of the original supply. It is interesting to note, in connection with the recent movement toward the conservation of our natural resources, that, as computed by Mr. E. W. Parker of the U. S. Geological Survey, there still remain in Illinois coal reserves more than 4,660 times the production of the State in 1907, and, allowing one-half ton of waste for each ton mined, more than 3,100 times the exhaustion represented by that production. The Illinois coal production, by inspection districts, for 1907, in order of tonnage, is given below:\*

District.	Tons.
10th .....	8,669,174
8th .....	8,578,590
7th .....	7,349,854
9th .....	6,461,573
6th .....	6,034,628
5th .....	3,243,019
1st .....	3,216,000
2d .....	2,717,177
4th .....	2,534,993
3d .....	2,436,102

Williamson county, of the 10th district, with a production of 5,697,994 tons, was the largest producing county in the State. Sangamon, of the 6th district, was the next largest producer, with 5,160,042 tons. St. Clair county, of the 8th district, was third with an output of 4,511,879. Macoupin, of the 7th district, was fourth, with 4,507,270 tons. Madison, of the 8th district produced 3,927,721 tons; Vermilion, of the 5th district, 2,973,253 tons; Saline, of the 10th district, 2,247,842; Fulton, of the 4th district, 2,113,643 tons; Bureau, of the 2d district, 2,010,762 tons; Grundy and LaSalle counties, of the 1st district, Peoria, of the 3d, Montgomery and Christian, of the 7th, and Clinton, Franklin, Marion and Perry, of the 9th district, mined over 1,000,000 tons.

On account of the additional inspection districts created, thus involving change of the counties comprising them, it is impossible to compare the production by districts with the report for 1908. In 1906 St. Clair county was first in production, Sangamon county second, and Williamson county third. In 1907 Williamson county changed places with St. Clair, the latter moving to third place, Sangamon still remaining in second.

The following table shows the tonnage and value, by counties, of Illinois coal produced in 1907. The figures for 1906 are also given, to afford a means of comparison for the two years. Following the policy of the Federal Survey, in cases where there are less than three producers in one county, the figures are concealed and reported under the heading "Other Counties."

\*In addition to the figures shown, there were 75,036 tons mined from local coal banks. This tonnage was not distributed by counties, but lumped together in the total production.

*Tonnage and Value of Coal in 1906-1907.*

	1906.		1907.		
	Tonnage.	Value.	Tonnage.	Value.	Number of producers.
Bond.....					
Bureau.....	1,580,085	\$2,399,498	2,010,762	\$2,979,557	11.
Calhoun.....					
Christian.....	834,452	1,045,449	1,388,159	1,451,625	7
Clinton.....	515,796	510,351	1,302,391	1,232,664	4
Franklin.....	669,200	607,834	1,306,966	1,384,744	9
Fulton.....	1,579,224	1,909,349	2,113,643	2,337,615	26
Gallatin.....	92,731	93,953	79,055	81,445	8
Greene.....					
Grundy.....	1,162,019	1,764,597	1,327,321	1,945,686	14
Hancock.....					
Henry.....	149,188	298,653	149,721	246,067	16
Jackson.....	646,196	819,174	645,333	819,504	13
Jefferson.....					
Jersey.....					
Kankakee.....					
Knox.....	51,654	85,393	40,996	67,864	12
LaSalle.....	1,467,672	2,366,626	1,677,990	2,660,773	16
Livingston.....	273,831	408,255	303,497	424,659	10
Logan.....	435,559	440,058	477,115	506,971	4
McDonough.....	43,774	81,262	32,199	61,385	7
McLean.....					
Macon.....					
Macoupin.....	3,637,827	3,372,863	4,507,270	4,412,539	11
Madison.....	3,651,296	3,283,826	3,927,721	3,594,068	24
Marion.....	1,042,866	1,077,333	1,185,533	1,150,433	3
Marshall.....	418,904	663,842	482,796	753,430	8
Menard.....	429,971	477,547	389,918	413,864	13
Mercer.....	412,165	540,804	453,621	620,972	8
Montgomery.....	720,415	736,011	1,289,021	1,275,647	6
Morgan.....					
Peoria.....	914,863	1,066,034	1,108,812	1,274,774	34
Perry.....	1,509,716	1,408,789	1,784,469	1,678,054	24
Putnam.....					
Randolph.....	634,270	582,530	824,761	779,745	14
Rock Island.....	52,938	102,333	52,938	86,479	7
St. Clair.....	4,578,372	3,975,717	4,511,879	3,865,756	47
Saline.....	980,864	997,015	2,247,842	2,217,018	7
Sangamon.....	4,543,849	4,568,143	5,160,042	5,022,248	27
Schuyler.....					
Scott.....	12,437	21,797	17,639	28,556	7
Shelby.....	138,257	193,207	155,930	183,897	8
Stark.....	17,661	29,372	25,897	43,628	9
Tazewell.....	189,882	234,123	235,971	276,127	10
Vermilion.....	2,389,285	2,480,586	2,973,253	2,997,416	31
Wabash.....					
Warren.....					
Washington.....					
White.....					
Will.....	154,955	247,917	189,985	290,558	4
Williamson.....	4,417,987	4,341,788	5,697,944	5,541,810	36
Woodford.....					
*All Other counties and small mines.....	1,120,560	1,640,983	1,271,256	1,929,804	
Total.....	41,480,104	\$44,763,062	51,317,146	\$54,687,392	495

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

Of the 1907 production 29.49 per cent was mined by machines as compared with 27.93 per cent in 1906.

## CLAY AND CLAY PRODUCTS.

The value of the clay products of Illinois during the year 1907 was \$13,351,362. This represents an increase over 1906 of \$567,549, or 4.4 per cent. The increase for 1906 over 1905 was \$391,713.

The following table shows the value, by counties, of the different classes of clay products in 1907. Since sand-lime brick are manufactured only in Rock Island county, the value of that product is given with that of other brick.

*Value of Clay and Clay Products in 1907.*

Counties.	*Brick.	†Sewer pipe and drain tile.	Pottery.	Raw clay.	Number of producers.
Adams.....	58,570				7
Alexander.....					1
Bond.....					1
Boone.....					2
Brown.....					1
Bureau.....	16,010	23,260			12
Calhoun.....				\$	1
Carroll.....					1
Cass.....	12,813				6
Champaign.....	66,074	9,500			9
Christian.....	20,325	29,324			11
Clark.....	10,200				5
Clay.....	1,675				4
Clinton.....	4,525				5
Coles.....	9,700	11,500			7
Cook.....	5,167,079		39,475	\$	34
Crawford.....	6,600				3
DeKalb.....					1
DeWitt.....	7,850				4
Douglas.....					1
DuPage.....	3,585				3
Edgar.....	2,700				5
Edwards.....	56,500				6
Efingham.....	11,105				6
Fayette.....	24,600				6
Ford.....		7,747			5
Franklin.....					2
Fulton.....	73,852				12
Gallatin.....	14,500	8,400			6
Greene.....			127,517		8
Grundy.....					2
Hamilton.....	5,263				3
Hancock.....	12,800				5
Henry.....	15,214	12,572			9
Iroquois.....	5,650	30,997			12
Jackson.....					2
Jasper.....					3
Jefferson.....					1
Kane.....	19,264	45,291			4
Kankakee.....	380,378	126,085			7
Kendall.....					2
Knox.....	920,585				4
Lake.....					3
LaSalle.....	202,775	371,627	\$	35,151	20
Lawrence.....					4
Lee.....					9
Livingston.....	246,058	42,355		\$	8
Logan.....	13,555	11,600			9
McDonough.....	17,950	254,175		26,321	17
McHenry.....					2
McLean.....	34,000	51,304			5
Macon.....	61,360				4
Macoupin.....	13,270				4
Madison.....	400,575				11
Marion.....	16,650				5
Marshall.....					2
Mason.....					2

## Value of Clay and Clay Products in 1907—Concluded.

Counties.	*Brick.	†Sewer pipe and drain tile.	Pottery.	Raw clay.	Number of producers.
Massac			\$	\$	2
Menard	20,588	4,840			5
Mercer	\$	\$			2
Monroe	\$				1
Montgomery	27,579	15,127			8
Morgan	9,135				4
Moultrie	2,500				4
Ogle	\$				2
Peoria	46,338				6
Platt		21,100			4
Pike	\$				3
Pulaski					1
Randolph					2
Richland					2
Rock Island	129,123			\$	15
St. Clair	322,408		\$		9
Saline	13,259				6
Sangamon	179,850				13
Schuyler	9,900	7,627			4
Scott	\$			\$	2
Shelby	6,864	11,454			7
Stark	6,470	\$			4
Stephenson	\$				2
Tazewell	82,958	\$	\$		2
Union	\$			\$	2
Vermilion	506,048	13,500			10
Wabash	\$	\$			7
Warren	9,724	294,605	\$		2
Washington	\$				2
Wayne	6,875	\$			5
White	10,740	20,165			6
Whiteside			\$		1
Will	50,547	45,706		\$	8
Williamson	31,900				4
Winnebago	19,446		\$	\$	5
Woodford	8,657	14,400			3
Other counties	521,824	799,441	837,174	44,231	
Total	9,957,791	2,239,702	1,004,166	105,703	435

\* Including architectural terra cotta and fire brick.

† Including fireproofing and tile, not drain.

‡ Including sand-lime brick.

§ Including Alexander, Bond, Boone, Brown, Calhoun, Carroll, Cass, Cook, Crawford, DeKalb, DeWitt, Douglas, DuPage, Edgar, Edwards, Effingham, Fayette, Ford, Franklin, Fulton, Greene, Grundy, Hancock, Jackson, Jasper, Jefferson, Kendall, Knox, Lake, LaSalle, Lawrence, Lee, Livingston, McDonough, McHenry, Macon, Madison, Marion, Marshall, Mason, Massac, Mercer, Monroe, Morgan, Moultrie, Ogle, Platt, Pike, Pulaski, Randolph, Richland, Rock Island, St. Clair, Saline, Sangamon, Scott, Stark, Stephenson, Tazewell, Union, Wabash, Warren, Washington, Wayne, Whiteside, Will and Winnebago.



The increase or decrease of the different products as compared with 1906 is shown in the table below:

	1906	1907
*Brick .....	\$9,898,840	\$9,957,791
Sewer pipe and tile .....	1,772,795	2,288,702
Pottery .....	982,903	1,004,166
Raw clay .....	131,272	105,703
Total .....	\$12,783,813	\$13,351,362

\* Including architectural terra cotta and fire brick.

### STONE.

*Limestone*—The value of limestone produced in 1907 was \$4,333,651 as compared with \$3,476,449 in 1906. This represents a gain of \$857,202, or nearly 25 per cent. Cook county furnished almost half the output, valued at \$2,011,473. The production of limestone, and the uses for which it is quarried are shown in the table below:

#### *Value of Limestone Output in 1907.*

Counties.	Building stone...	Paving, curbing, flagging.....	Broken stone...	Stone for road-making .....	Railroad ballast and concrete..	Lime produced ..	Stone for flux....	Other .....	Number of producers .....
Adams .....	\$11,725		\$ 8,269	\$ 10,482	\$ 3,670	\$130,656	\$ 150		9
Boone .....	*		*	*					2
Carroll .....									1
Coles .....									18
Cook .....	7,663	\$134,946	61,397	579,770	1,227,707	334,412			1
DuPage .....		*	*	*	*			*	2
Greene .....	*	*	*	*	*			*	1
Hancock .....	*	*	*	*	*			*	1
Jersey .....									1
JoDavless .....	1,025		20	275	100			\$ 670	7
Kane .....			*	*				*	2
Kankakee .....	11,420		12,688	34,543	99,604				2
LaSalle .....									2
Lee .....	328		8	14,979	5	*			5
McHenry .....	*								1
Madison .....	8,463	4,320	3,466	21,772	66,133		8,700	36,501	11
Monroe .....	471		14,271		13,825				5
Ogle .....	488	10	62	1,320					4
Pike .....	*		*	*	*			*	2
Randolph .....	*		*	*	*			*	1
Rock Island .....		12,400	3,860	24,980	27,658			10,151	4
St. Clair .....			20,735	19,671	42,237		1,637	4,150	6
Stephenson .....	*								1
Union .....					*			*	1
Vermilion .....			10,702	5,000	1,200			*	6
Whiteside .....	338								6
Will .....	31,587	7,624	217,932	173,323	78,687		84,370		21
Winnebago .....	23,993		1,894	7,351	2,864		17,330	42	20
*Other counties .....	11,919	8,840	85,368	64,566	59,433	76,907	328,416	5,162	
Total .....	\$109,430	\$168,140	\$440,672	\$958,032	\$1,618,123	\$559,305	\$423,315	\$56,634	137

\* Including Boone, Carroll, Coles, DuPage, Greene, Hancock, Jersey, Kane, LaSalle, McHenry, Pike, Randolph, Stephenson, Union and Vermilion.

In 1906 the figures for building stone, flagging, curbing and paving were given under the head of dimension stone, and those for railroad ballast, concrete, rubble and riprap, and broken stone were given under the head of broken stone. In order to conform as nearly as practicable with the tables of the U. S. Survey, these have been sepa-

rated to a certain extent in the accompanying table, which is given for the sake of comparison:

	1906		1907
Dimension stone .....	\$ 318,528	Building stone .....	\$ 109,430
Stone for road making .....	667,195	Paving, curbing and flagging.. }	168,140
Stone for lime .....	594,118	Lime produced .....	958,032
Broken stone .....	1,572,251	Broken stone .....	440,672
Stone for flux .....	384,357	Railroad ballast and concrete.. }	1,618,123
Other .....			423,315
			56,634
Total .....	\$3,476,449		\$4,833,651

*Sandstone*—The production of sandstone in 1907, as in the previous year, showed a considerable decrease. The output for 1907 was valued at \$14,996, as compared with \$19,125 in 1905.

#### SAND AND GRAVEL.

Sand and gravel showed an increase of \$324,612 in 1907 as compared with 1906, a gain of 31 per cent. In 1906 the gain over 1905 was over 50 per cent. The total value in 1907 was \$1,367,653, as against \$1,043,041 in 1906. The following table shows the value of the sand and gravel output, and its various uses:

#### *Value of Sand and Gravel Output in 1907.*

Counties.	Glass sand.....	Molding sand....	Building sand....	Engine sand.....	Furnace sand....	*Other sand.....	Gravel.....	Number of producers.....
Bond.....		†	†			†	†	2
Bureau.....	\$ 10,540	\$ 16,500					6,475	5
Carroll.....		†				†	†	1
Cook.....		†						2
Fayette.....		†						1
Fulton.....			†					1
Hancock.....		†						1
Henderson.....		†		†				2
Jo Daviess.....		†						2
Kane.....		21,545	77,155			175	64,952	12
Kendall.....		†				†		2
Lake.....			51,825	2,500			18,904	4
LaSalle.....	152,619	134,075	9,355	22,519	12,350	29,467	6,572	15
Lee.....		31	5,650				850	4
Logan.....							†	2
McHenry.....		13,507	165,866	600		87,912	67,493	6
Madison.....		†						1
Peoria.....			5,084				9,775	7
Platt.....							†	1
Rock Island.....			20,102	1,150		707	2,768	4
St. Clair.....		†					†	2
Stephenson.....							†	1
Tazewell.....							†	1
Vermillion.....			†					1
Wabash.....			†					1
Whiteside.....		†					†	2
Will.....		675	1,286				68,458	4
Winnebago.....		6,080	29,150				26,010	5
†Other counties.....		50,696	37,477	2,322		17,496	108,930	
Total .....	\$152,619	\$237,149	\$419,450	\$29,091	\$12,350	\$135,757	\$381,237	92

\* Including fine sand and sand for grinding and polishing.

† Including Bond, Carroll, Cook, Fayette, Fulton, Hancock, Henderson, Jo Daviess, Kendall, Logan, Marion, Platt, St. Clair, Stephenson, Tazewell, Vermillion, Wabash and Whiteside.



## OIL AND GAS.

*Oil*—The most notable increase in Illinois mineral production during 1907 was that of the oil output, which increased from 4,397,050 barrels in 1906 to 24,281,973 barrels in 1907. A wonderful showing was made in 1906, when from practically a non-producer in 1905 Illinois took her place as ninth among the oil producing states, with a production of 4,397,050 barrels. The production in 1907 entitles Illinois to third place, Oklahoma and California being first and second.

The average price per barrel declined from 74+ cents in 1906 to 67.7 cents in 1907, the total value of the 1907 output being \$16,432,947. The following table shows the production of oil in Illinois during 1905, 1906 and 1907, by months:

*Production of Oil in 1905-1907.*

Months	Barrels 1905.	Barrels 1906.	Barrels 1907.
January.....		55,680	781,812
February.....		65,209	956,899
March.....		19,352	1,547,323
April.....		102,862	1,574,465
May.....		267,746	2,138,918
June.....	5,489	410,654	1,870,362
July.....	9,208	610,401	2,422,192
August.....	15,092	778,463	5,416,042
September.....	19,591	722,168	2,605,663
October.....	26,443	463,819	2,508,812
November.....	34,766	350,985	2,519,146
December.....	45,913	549,711	2,265,839
Total.....	156,502	4,397,050	24,281,973

*Gas*—The gas in the oil district has been utilized to a considerable extent during the year, but the figures are not available for publication.

## CEMENT.

The production of Portland cement in 1907 was 2,036,093 barrels, valued at \$2,632,576. This is an increase of 177,690 barrels over 1906, when the production was 1,852,403 barrels, valued at \$2,461,494.

The average price dropped from \$1.33 to \$1.29 per barrel. The output of natural and slag cement in 1907 was valued at \$174,282, as compared with \$188,262 in 1906. There were four concerns making Portland cement and two making natural cement during the year. One of the natural cement plants also made slag cement. The new Portland plant at Dixon did not begin operations until late in the year.

## FLUORSPAR.

During the year 1907 the production of fluorspar from Illinois was 25,128 short tons, valued at \$141,971. Complete returns as received by the U. S. Geological Survey give the 1906 figures as 28,268 tons, with a value of \$160,623. Accepting these corrected figures, there was a decrease of 3,140 in tonnage and \$18,652 in value in 1907, as compared with 1906.

## MINERAL WATER.

There were 720,400 gallons of mineral water, valued at \$91,700, marketed in Illinois in 1907. This is an increase of 145,947 gallons in quantity, and \$14,473 in value over 1906, when 574,453 gallons were sold for \$77,287.

## ZINC.

The spelter made at Illinois smelters in 1907 amounted to 56,056 short tons, valued at \$6,614,608. About 298 tons of this was from ores mined in the State.

## LEAD.

Complete returns for lead production are not yet available, but the figures will probably not be far from those for 1906, when 572 short tons were mined, with an average value of about \$80 per ton.

## PIG IRON.

Since some other states include in their value of mineral products the value of pig iron manufactured, it has been decided to include its production in Illinois for 1907.

There were produced 2,457,768 long tons of pig iron in Illinois in 1907, with a value of about \$52,228,000. The output in 1906 was 2,156,866 long tons, valued at about \$47,128,000.

## PYRITE.

In 1907 pyrite was produced in Vermilion county to the amount of 2,000 long tons, with a value of about \$5,700.

## SUMMARY.

The following summary table shows the values of mineral output for 1906 and 1907, and is given to show where the very large increase in value of 1907 over 1906 occurs:

*Total Values of Mineral Output in 1906-1907.*

	1906.	1907.
Coal.....	\$44,763,062	\$54,687,382
Pig iron (estimated).....	47,128,000	52,228,000
Oil.....	3,275,802	16,432,947
Clay.....	12,783,813	13,351,362
Zinc (estimated).....	5,489,508	6,614,608
Limestone.....	3,476,449	4,333,651
Portland cement.....	2,461,494	2,632,576
Sand and gravel.....	1,043,041	1,367,653
Natural and slag cement.....	188,262	174,282
Fluorspar.....	160,623	141,971
Mineral water.....	77,287	91,760
Lead ore (estimated).....	45,760	45,760
Sandstone.....	19,125	14,996
Pyrite.....		5,700
Total.....	\$120,922,226	\$152,122,648