

State inspector of coal mines reports

Section 10, Pages 271 - 300

These reports of the Kansas State Mine Inspector mostly concern coal mining, though by 1929 the scope of the reports broadens to include metal mines. The content of individual reports will vary. The reports address mining laws and mining districts; industry production and earnings; fatal and non-fatal accidents; accident investigations and transcripts of oral interviews; labor strikes; mine locations; mining companies and operators; and proceedings of mining conventions. The reports document the political, economic, social, and environmental impacts of more than seventy years of mining in southeastern Kansas.

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including blacksmiths, carpenters and topmen, working an average number of 210 days during the year.

GIDEON M'DOWELL'S

Is a horsepower plant, located between Scranton and Burlingame, with post-office address at Scranton. This mine, being small and the trade purely local, has no railroad connection. It is ventilated by a furnace, and has two openings, employing 5 miners, principally members of the owner's family, and 2 day hands, working an average number of 200 days during the year.

SUPERIOR COAL AND MINING COMPANY.

Mine No. 2 is a horsepower plant, located at Osage City, and has no railroad connection. The mine is ventilated by a furnace, and has two openings. I have had no complaints from it. It employed 33 miners, including boys, and 6 day hands, who worked an average number of 220 days during the year.

Mine No. 3 is a horsepower plant, located at Osage City, and has railroad connection with the main line of the Atchison, Topeka & Santa Fé. It is ventilated by a furnace. This mine generally is in very poor condition, the equipment being of such a character as would have been considered of poor construction 50 years ago. Everything about the mine seemed to be in a worn-out and dilapidated condition. There was not a foot of iron rail in the mine, and in places no rails of any description. There has been considerable trouble in this mine, arising from black-damp, which would occasionally flow into it from an old abandoned mine close by. I requested the pit boss to make some improvements at once, more particularly with regard to the ventilation. The mine employed 37 miners, including boys, and 5 day hands, who worked an average number of 220 days during the year.

Mine No. 4 is a horsepower plant, located near Osage City, without railroad connection, but does a local and shipping business, hauling the coal to the railroad for shipment. The mine is ventilated by a furnace, and has two openings, employing 20 miners, including boys, and 2 day hands, who worked an average number of 200 days during the year.

WESTERN COAL CO.

Mine No. 1 is a horsepower plant, located within the city limits of Osage City, near the main line of the Atchison, Topeka & Santa Fé Railroad, and has connection therewith by switch. It is ventilated by a furnace. This is an old mine which had been abandoned for years, but by reason of the acquisition of new territory lying in a different direction from that already worked, it was reopened by the above-named company. It can be said that this is a very fair mine, and I have had no complaints regarding it. It gave employment to 40 miners, including boys, and 2 day hands, who worked an average of 250 days during the year.

Mine No. 2 is a horsepower plant, located near Osage City, and has no



railroad connection, the coal being hauled to the cars for shipment. The trade is local and shipping. The mine is ventilated by a furnace, and was formerly owned by the Union Coal Company, and known as mine No. 1. I have received no complaints from it. The mine works 20 miners, including boys, and 2 day hands, who worked an average number of 250 days during the year.

Mine No. 4 is a new mine, with horsepower plant, located near Osage City, and has no railroad connection, the coal being hauled to the cars for shipment. This mine was not sufficiently advanced to require inspection. It furnished employment to 12 miners, including boys, and 2 day hands, who worked an average number of 80 days during the year.

EXCELSIOR COAL COMPANY.

Mine No. 1 is a horsepower plant, located near Osage City, and has connection by switch with the Lyndon branch of the Atchison, Topeka & Santa Fé Railroad. Is ventilated by a furnace. This is a new mine, sunk in 1887, and is not yet developed to its full capacity. It has been worked steadily since coal was reached, and promises to be a very fair mine. It employed 18 miners, including boys, and 2 day hands, who worked an average number of 50 days during the year.

Mine No. 2 is a horsepower plant, located near Osage City, on the Lyndon branch of the Atchison, Topeka & Santa Fé Railroad, and is ventilated by furnace. The mine was sunk in 1887, and what has been said of mine No. 1, can also be said of this. It gave employment to 16 miners, including boys, and 2 day hands, working an average number of 53 days during the year.

J. T. SCOTT & CO.

Is a horsepower plant, located near Barclay, having no railroad connection, the coal being hauled to the cars for shipment. The mine has a local and shipping trade, and is ventilated by a furnace. This mine was formerly operated by the Liberian Coal Company, as is shown by the report of my predecessor. The present operators keep the mine in better condition than did those who formerly controlled it. I have received no complaints regarding it. This mine is worked principally during the winter months, little if anything being done in summer. It employed last year 18 miners, including boys, and 2 day hands, who worked an average number of 89 days.

W. T. WILLIAMS'S

Is a horsepower plant, located near Osage City, with no railroad connection, the coal being hauled to the track for shipment. Has a local and shipping trade, and is ventilated by a furnace. This mine has the reputation, and from the records in the Inspector's office is undoubtedly one of the poorest ventilated mines in Osage county. It has been found so at every inspection that has been made, and complaints that have been received fully confirm



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this statement. It is worked principally in the winter months, employing 18 miners, including boys, and 3 day hands, who worked an average number of 180 days during last year.

SCANDINAVIAN COAL AND MINING CO.

Mine No. 5 is a horsepower plant, located near Osage City, and is connected by a switch with the main line of the Atchison, Topeka & Santa Fé Railroad. The mine is ventilated by a furnace, and has underground connections with Scandinavian Coal and Mining Co's. mines Nos. 2, 3, and 4, each of these having separate plants, although all the coal is hauled underground to No. 5 and hoisted from that opening. The mine is in very fair condition. It is owned by Mr. N. B. Cooper, but operated by a number of miners associated together, putting the coal on cars for the mine-owner at so much per bushel. It employed 97 miners, including boys, and 11 day hands, who worked an average number of 242 days during the year.

SUTHERIN & THACHER'S

Is a horsepower plant, located near Osage City, without railroad connection, the coal being hauled to the track for shipment. The mine is ventilated by a furnace, and has two openings. This mine in my predecessor's time was owned by Hanson Bros., and at every visit has been found in excellent condition, working 26 miners, including boys, and 2 day hands, who were employed an average number of 125 days during the year, principally in the winter.

HERSHEY & M'CREA'S

Is a horsepower plant, located near Osage City, with no railroad connection, the coal being hauled to the cars. Does a local and shipping trade. This mine is principally operated in the months of October, November, and December. It was not in operation at the time of any of my visits in that locality, but I have received no complaints regarding it. It employed during last year 65 miners, including boys, and 6 day hands, who worked an average number of 77 days.

MORGAN MEREDITH

Is a slope, operated by horsepower, located at Carbon Hill, near Carbondale, with no railroad connection, the trade being purely local. The mine is ventilated by furnace, and has two openings. It is a small mine, working only in the winter months, employing 5 miners and 1 day hand, who worked an average number of 100 days. The mine was found in fair condition.

JAMES RAINEY

Is a horsepower plant, located at Carbon Hill, near Carbondale, with no railroad connection. Has a local and shipping trade. The mine is ventilated by a furnace, and has two openings. This shaft was formerly owned by Rabia, Shively & McClay. The mine was in fair condition, and I have received no complaints therefrom. It employed 12 miners, including boys,



and 3 day hands, who worked an average number of 225 days during the year.

H. J. WILLIAMS

Is a slope, operated by horsepower, located at Carbondale, without railroad connection, trade being purely local, and operated only during the winter months. The mine is ventilated by a furnace, and has two openings, employing 3 miners and 1 day hand, who worked an average number of 120 days during the year.

J. W. THOMAS

Is a horsepower plant, located near Carbondale, without railroad connection, trade being purely local. The mine is ventilated by a furnace, and employed 10 miners, including boys, and 2 day hands, who worked an average number of 100 days during the year.

The coal mines of Crawford county, during the past year, were in a very prosperous condition. The field being a valuable one, the older mines not worked out were developed to a greater capacity, and several new shafts, described in this report, were sunk, and equipped with all the improved machinery which the importance and magnitude of this coal field demand. The increased output of this county for the past year was much greater than that of any other county in the State.

Number	Name of operator.	No. of mine	Post-office address.	Total No. bushels of coal mined in 1887.	Average No. of men employed	Ave. price paid per ton shipped	Total amount paid for shipping in 1887.
1	Kansas and Texas Coal Co.	9	Litchfield	617,835	58	34	\$23,168 92
2	"	10	"	153,290	51	34	5,748 37
3	"	11	"	549,934	61	34	20,622 52
4	"	12	Pittsburg	409,106	57	34	15,341 47
5	"	13	"	434,899	75	34	16,808 71
6	"	15	"	33,130	20	34	1,189 55
7	"	17	Litchfield	164,386	64	4	6,575 44
8	Pittsburg and Midway Coal Co.	1	Pittsburg	499,000	45	34	18,145 31
9	"	2	"	131,425	30	34	4,779 11
10	Western Coal and Mining Co.	2	Fleming	2,325,000	100	31	83,437 50
11	"	3	"	388,400	60	34	14,565 00
12	Cherokee and Pittsburg C. & M. Co.	1	Frontenac	1,335,187	85	34	50,819 51
13	"	2	"	579,630	49	34	21,736 12
	Totals			7,541,225	755		\$282,407 53

Number.....	Av. No. of day hands employed.....	Average No. of days worked.....	Average rate per day paid day hands.....	Total amount earned by day hands.....	Amount paid with- era for breaking done in curfew.....	Amount paid miners for lavatory rooms.....	Amount paid miners for cutting horse- back.....	Amount paid miners for driving entry.....	Total amount paid miners to 1897.....	No. bags powder used in year.....	Acci- dents.....	
											Fatal.....	Non-fatal.....
1.....	21	179	\$2 00	\$7,518	\$777 40	\$260	\$1,275	\$1,458	\$26,939 32			
2.....	20	60	2 00	2,400	189 50	64	811	219	6,531 87			
3.....	22	172	2 00	7,568	711 80	245	1,151	1,222	24,050 32			
4.....	18	152	2 00	5,472	471 20	171	853	987	17,823 67			
5.....	17	121	2 00	4,114	501 60	192	905	1,094	18,941 31			
6.....	12	30	2 00	780		15			1,174 55			
7.....	18	50	2 00	1,920	192 40	65	817	288	7,887 84			
8.....	15	189	2 00	5,670	763 20	220	1,112	1,431	21,671 51	1,841		
9.....	13	78	2 00	2,028	161 80	49	297	201	5,487 91	320		
10.....	32	261	2 00	16,704	2,786 40	980	4,290	5,248	96,741 90	3,560		
11.....	28	71	2 00	3,976	423 00	163	746	652	16,549 00	1,500		
12.....	25	230	2 00	11,500	1,671 80	588	2,574	3,148	58,801 51			
13.....	19	112	2 00	4,256	701 40	246	1,081	1,323	25,087 52			
Totals.....	260			\$73,726	\$9,351 50	\$3,256	\$14,912	\$17,261	\$327,118 03	6,661		

There are numerous other small mines in the county operated in the winter months, employing 150 miners, with an output last year of 500,000 bushels.



CONDITION OF MINES OF CRAWFORD COUNTY.

KANSAS AND TEXAS COAL CO.

Mine No. 9 is a steam plant, located at the junction of the Litchfield branch of the Joplin & Girard Railway and the Cherryvale branch of the Kansas City, Fort Scott & Gulf Railroad, and is worked by pillar-and-room system. The mine is ventilated by a ten-foot Crawford & McCrimmin ventilating fan, which has ample power for all ventilation required. Considering the time of year of my visit, the mine was found in very fair condition, and I have received no complaints from it. The mine was in operation every month of the year, but part of the year was only worked on half time, and for several months only ran 10 days in each month. The average number of days worked during the year was 179, employing 58 miners, including boys, and 21 day hands, including engineers, blacksmiths, carpenters, etc. The engine and boiler-house of this mine, from some unknown cause, burned down early in 1887, but was immediately rebuilt and work resumed. James Whorley, pit boss.

Mine No. 10 is located a few hundred feet west of the west line of the town of Litchfield, on a switch connecting with the Litchfield branch of the Joplin & Girard Railway. In the early part of my predecessor's time, it was operated by horsepower, but in the early part of 1885 steam was put in. This mine is also equipped with a Crawford & McCrimmin ten-foot ventilating fan, which has ample power for all air required. The mine was only operated part of the time during four months of 1887, employing 51 miners, including boys, and 20 day laborers, including engineers, blacksmiths, carpenters, and topmen. This mine was worked out and abandoned April 13, 1887, hence the average number of days worked was only 60. David Arnott, pit boss.

Mine No. 11 is located three-fourths of a mile southwest of Litchfield, on a switch connecting with the Litchfield branch of the Joplin & Girard Railway, and is ventilated by a Crawford & McCrimmin ten-foot ventilating fan. Upon examining this mine I found an abundance of air, far in excess of the amount required by law, at the outlet and inlet and in all the working-places of the mine, with a few exceptions, these being most particularly at the heads of entries where the air did not reach the last break-through, being found insufficient by reason of previous break-throughs not being properly closed. The attention of the pit boss was called to this fault, and it was shortly afterward remedied. The mine was in operation part of each month of the year, and was worked on one-half time during the summer, employing 61 miners, including boys, and 22 day laborers, including engineers, blacksmiths, carpenters, and topmen. Average number of days worked during the year, 172. John Barryman, pit boss.

Mine No. 12 was a steam plant, located just west of the original city limits of Pittsburg, on land known as the Lanyon tract. This mine was equipped



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with a Crawford & McCrimmin 12-foot ventilating fan, which furnished ample air for all purposes. This fan had a pumping arrangement attached to the fan shaft, for pumping water out of the mine, which could be thrown in and out of gear whenever necessary. When erected, this fan was the largest in the district. When visited, this mine was in very fair condition, considering the fact that abandonment was then contemplated. The mine was operated about seven months in 1887, employing 57 miners, including boys, and 18 day laborers, including engineers, blacksmiths, carpenters, and topmen. Average number of days worked in the year, 152.

Owing to the small amount of coal territory controlled by this mine, it was only in operation about two years, being abandoned in August, 1887. The mine was not abandoned by reason of being worked out, but because of the inability of the company to procure the necessary adjacent territory. Had they been enabled to procure the required territory, it still would have been in splendid condition to produce coal, it being at the time of its abandonment at its best as a coal-producing mine.

Mine No. 13 was designated in my predecessor's report for 1885, as Diamond Coal Co.'s mine No. 1, having been purchased by the Kansas and Texas Coal Co. early in 1886, and equipped and operated by horsepower, being located one-fourth mile due north of the city of Pittsburg, and is connected by a switch with the Joplin & Girard Rly. In the latter part of my predecessor's unexpired term, it was reconstructed into a steam plant. It was operated about six months in 1887, part of the time as a gin shaft, and the balance by steam, the time it was shut down being during the dull season of the year, and for purposes of reconstruction. This was the case at the time of my first visit. The mine is well ventilated, considering the amount of trouble they have had with poor roof. During the time it was in operation, there were employed 75 miners, including boys, and 15 day hands, including engineers, blacksmiths, carpenters, and topmen. Average number of days worked in the year, 121. Peter Simmons, pit boss.

Mine No. 15 is located one and one-half miles west, and one-eighth mile north of the city of Pittsburg, just west of Coal creek, on a switch connecting with the Pittsburg & Columbus Railway, operated by the Frisco line. This shaft was sunk in May, 1887, under promising circumstances inferred from numerous prospect-holes in the immediate locality, but on being opened up and developed, proved an entire failure. The plant was of magnificent construction, no money being spared to make it a success, but owing to a faulty, waving and rolling vein of coal, which unfortunately rose and fell from three and one-half feet to a very few inches in thickness, the coal could not be mined at current prices, and after the expenditure of considerable money in the hope of ultimate success, the mine was finally abandoned. While this mine proved a failure in so short a time after the construction of the plant, it must not be inferred that the failure was due to any mismanagement, as the land had been thoroughly prospected and gave



every indication of a uniform vein of coal, nine out of ten of the prospect-holes promising a regular vein of the usual three and one-half feet thickness. While examining this mine, the pit boss, Mr. Wm. Eggle, took great pains to fully show to me the character of the roof, coal, faults, etc., and while doing so, remarked that my predecessor, Mr. John Braidwood, while underground superintendent of these mines, then owned by the Rogers Coal Co., had stated that where the iron-rock roof, such as was found in this mine, was discovered, the coal was invariably rolling, faulty, and very uncertain for mining operations to be carried on successfully. This, Mr. Eggle said, was clear to him now, but doubted at the time. Indications lead me to believe, however, that this character of roof is only local, and extends over only a small portion of the territory. These peculiarities, or others of a similar nature, are characteristic of most coal fields, and interfere more or less with their successful development. The entire life of this mine was about three months, the plant being now erected in another locality.

Mine No. 17 is a steam plant, located about one-half mile north of the town of Litchfield, and is connected by a switch with the Litchfield branch of the Joplin & Girard Railway. This is a new mine, starting operations October 15, 1887, and continued in operation the balance of the year. The mine being new was not sufficiently advanced for any inspection upon my last visit there. They employed 64 miners, including boys, and 18 day laborers, including engineers, blacksmiths, carpenters, and topmen. Average number of days worked from beginning of operations to December 31, 1887, was 50. The steam plant in use at this mine was formerly used at mine No. 10, abandoned April 13, 1887. David Arnott, pit boss.

PITTSBURG AND MIDWAY COAL CO.

Mine No. 1 is a steam plant, located between Pittsburg and Midway, one-half mile west of the Missouri line, and is connected by a switch with the Cherryvale branch of the Kansas City, Fort Scott & Gulf Railroad. The mine is ventilated by a 10-foot Crawford & McCrimmin ventilating fan, which has ample power for all the air required. Upon examination the mine was found to be in a good condition, all necessary precautions being taken to insure the safety of the miners. There were employed 45 miners, including boys, and 15 day hands, including engineers, blacksmiths, carpenters, etc., and worked during the year an average of 189 days. Thomas Jones, pit boss.

Mine No. 2 is a steam plant, located a few hundred feet west of the Missouri line, and about the same distance north of the Cherryvale branch of the Kansas City Fort Scott & Gulf Railroad, with which it is connected by a switch. The mine has a Crawford & McCrimmin 10-foot ventilating fan, furnishing all necessary air. It was sunk in the latter part of 1885, and has been operated but little save in the winter months, owing to inability to secure satisfactory railroad freight rates during the summer, a difficulty



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which is now arranged, as I am informed by President E. H. Brown. The mine is in good condition, and has been so conducted as to be productive of no complaints. There were employed 30 miners, including boys, and 13 day hands, including engineers, blacksmiths, carpenters, and topmen. Average number of days worked in year, 78. Wm. Short, pit boss.

CHEROKEE AND PITTSBURG COAL AND MINING CO.

Mine No. 1 is a steam plant, located near Frontenac, on the Girard branch of the Southern Kansas Railway, and connected therewith by a switch. This mine was sunk in the latter part of 1886, and is a very fine plant, no expense having been spared to make it perfect. The construction of this plant differs entirely from all others erected in the State prior to this, it being the first to adopt the self-dumping automatic cages, which have proven to be a complete success. The hoisting machinery of this mine is superior in construction and power to any other in the district constructed previously to this. The manner of hoisting coal to the top in use is similar to that at all other steam plants, but the cage on arriving at the top dumps the coal into the chutes leading to the railroad cars automatically, without any assistance other than that rendered by the engineer, thus saving a great expense in pulling the cars off and on the cage and dumping the same, also saving a great deal of time. The screening facilities of this plant, through their superior equipment, are also a great improvement on those of plants previously constructed in the district. This mine is equipped with a fifteen-foot ventilating fan, built by Wm. E. Cole, Washington, Ind., which is capable of furnishing an abundant supply of air for all ventilating purposes, and is constructed so as to be utilized either as an upcast or downcast. The mine at my last visit was found in first-class condition. It was opened and worked on the double-entry system, which is practically the only system by which a mine can be opened up and worked to a large capacity in this coal field. This company have spared no expense in driving entries ahead of their working-rooms, so that they can at any time put in sufficient men to send out an output of coal equal to the capacity of their hoisting facilities. In the summer months, instead of stopping their entries for the purpose of cutting down expenses while the coal trade is dull, they continue them on and take coal from them in preference to taking it from the rooms, so in the winter months when the great amount of coal is needed, they are in a position to work their mine to its full capacity, and by so doing secure larger returns, which compensates them to a greater extent than any economy they could exercise in the dull season by stopping their entries. In opening up this mine away from the bottom of the shaft the system was so arranged that they had four divisions of air from the start, each one-fourth of the mine being ventilated by a separate current, which gives each division the same volume of air in a much purer and healthier state than could be obtained in a single air-way having much greater velocity. This is something



generally lost sight of in opening a new mine, but has been looked into to the letter by the management of this mine, and will result in great future benefit to them in the development of the mine. There was employed an average of 85 miners during the year, and 25 day hands, including engineers, carpenters, blacksmiths, and topmen. They worked an average of 230 days. The number of hands employed at this mine was not reported, and the number given above is approximated from the output of coal as given. Mr. Robertson, pit boss.

Mine No. 2 is a steam plant, located about one-half mile northeast of mine No. 1, and has the same railroad connection as that mine. The plant is similar in construction and equipment to that of mine No. 1, and operated upon the same plan, everything being nearly an exact duplicate. Mine is opened upon the same principle, and is in all respects similar to No. 1. It was found in good condition. This mine employed about the same number of men as mine No. 1, and worked 100 days during the year. Number of men approximated not reported.

Mine No. 3 is a steam plant, located east of mines Nos. 1 and 2, and is a new plant, similar to them in equipment and construction, although not sufficiently advanced for inspection.

Mine No. 4 is a steam plant, located three and one-half miles southwest of Pittsburg, and is a counterpart of mines Nos. 1, 2 and 3, and, like No. 3, not sufficiently advanced for inspection.

WESTERN COAL AND MINING CO.

Mine No. 2 is a steam plant, located on the Nevada branch of the Missouri Pacific Railway, at Fleming, and was opened in September, 1886. While this plant is similarly constructed to other steam plants, it is put up in a very substantial manner, having in connection with it, ten railroad chutes for coaling locomotives. It has also in connection the rotary screen, with facilities of the most improved pattern, which makes three grades of coal other than the lump—nut, pea, and slack. The mine is equipped with a Crawford & McCrimmin 10-foot ventilating fan, which furnishes a bountiful supply of air for all sanitary purposes. The mine is opened up on the double-entry system, and is generally in a fair condition as to ventilation, although there have been several slight explosions in the mine, caused by a combination of circumstances which are commented upon in another portion of this report. They employ 100 miners, including boys, and 32 day hands, including engineers, blacksmiths, carpenters, and topmen. The average number of days worked in the year was 231. Mr. Russell, underground superintendent.

Mine No. 3 is a steam plant, located about three-fourths of a mile northeast of mine No. 2, on same railway, and was sunk in May, 1887. The plant is similar in construction to that of mine No. 2, with the exception of



railroad chutes for coaling locomotives. The mine was opened up on the double-entry system, and is equipped with a Crawford & McCrimmin 10-foot ventilating-fan, and has had the reputation of being a well-ventilated mine ever since it was opened. Each one-fourth of the mine is ventilated by a separate and distinct current, and it is to be regretted that under these flattering conditions, the greatest explosion that has ever occurred in any mine in the State, happened in this mine in December, 1887, resulting in the death of three men, being all that were in the mine when the explosion occurred. This accident is fully described in another portion of this report. They employed 60 miners, including boys, and 28 day men, including engineers, blacksmiths, carpenters, and topmen. Average number of days worked in year, 71.

LONE OAK COAL MINE

Is operated by Hamilton Bros., and owned by other parties, the Hamilton Bros. putting coal on cars for a stipulated price. This is a steam plant, located at Lone Oak, four miles northwest of Pittsburg, on the Joplin & Girard Railway. The mine is ventilated by a 10-foot ventilating-fan, built by a St. Louis firm, which furnishes a bountiful supply of air. The principal portion of the output of this mine is handled by the Kansas & Texas Coal Co. I have had no complaints therefrom, and still believe it to be in excellent condition. There were employed during the year from 35 to 40 miners, including boys, and 10 day hands, including engineers, blacksmiths, carpenters, and topmen. The average number of days worked during the year was 200.

There are numerous small mines in the vicinity of Pittsburg, Mulberry, Grove, and Arcadia, and throughout the county, that are only operated during the winter season. These mines employ in the aggregate about 150 miners, with an annual output of one million bushels of coal. Owing to the small business done by each, and the mines changing operators nearly every year, I have been unable to obtain any intelligent reports. From personal observations, and the absence of any complaints, I presume them to be in fair condition.



CHEROKEE COUNTY COAL MINING.

The valuable coal fields of Cherokee county are most fully appreciated by the operators of that district, and during 1887 a number of improvements were made in the existing mines, and new shafts, well and thoroughly equipped on a larger scale, were sunk, and are being developed to a greater capacity than mines have been heretofore in this section, with the promise of a much larger output in 1888 than even that of 1887.

CHEROKEE COUNTY COAL MINES.

Number	Name of operator.	No. of mine.	Post-office address.	Total No. bushels of coal mined in 1887.	Average No. of miners employed	Ave. price paid per bushel.	Total amount paid for mining in 1887.
1	Keith and Perry Coal Co.	12	Scammonville.	1,075,620	90	34	\$40,335 75
2	" "	3	" "	1,671,885	100	34	62,695 68
3	" "	3	Weir City.	1,815,940	105	34	68,097 75
4	" Wm. Hamilton, op'r.	12	" "	1,309,293	105	34	49,098 48
5	Kansas and Texas Coal Co.	5	" "	534,031	110	34	20,025 16
6	" "	7	" "	397,528	65	34	13,407 30
7	" "	16	" "	247,094	39	34	9,266 02
8	Weir City Coal Co.	"	" "	691,200	46	34	25,920 00
9	Jas. Dennis, rec'r Parsons Coal Co.	"	" "	390,000	40	34	14,625 00
10	Weir Bros.	"	" "	218,081	24	34	8,175 03
11	Columbus Coal Co.	"	Columbus.	416,672	39	34	13,541 84
12	Osthoff Bros.	"	" "	51,000	3	34	1,657 50
13	George Robinson	"	" "	57,000	3	34	1,852 50
14	Norton Coal Co.	"	Scammonville.	490,000	46	34	18,375 00
15	Cherokee Coal and Mining Co.	"	Cherokee.	396,209	24	34	10,717 31
	Totals.			9,631,553	839		\$357,794 32

CHEROKEE COUNTY COAL MINES—CONCLUDED.

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There are numerous other small mines in this county, operated principally during the winter, employing about 50 miners, with an output of about 200,000 bushels during last year.



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CONDITION OF MINES IN CHEROKEE COUNTY.

CHEROKEE COAL AND MINING CO.'S MINE

Is a steam plant, located at Cherokee, on the main line of the Kansas City, Fort Scott & Gulf Railroad, 400 feet south of the Crawford county line, and is equipped with a 10-foot ventilating fan, built by a Parsons, Kansas, firm, which furnishes an ample supply of air. The mine was found in very good condition, employing 24 miners, including boys, and 10 day hands, including engineer, blacksmith, carpenters, and topmen. Average number of days worked in year, 264.

KANSAS AND TEXAS COAL CO.

Mine No. 5 is a steam plant, located immediately south of Weir City, and is connected with the Cherryvale branch of the Kansas City, Fort Scott & Gulf Railroad, and the Pittsburg and Columbus branch of the St. Louis & San Francisco Railway. This mine is ventilated by the pioneer ventilating fan of Kansas, being the first one constructed in the State, and was erected by my predecessor while in charge of the Kansas and Texas Coal Co.'s mines. The fan furnishes a plentiful supply of air. This has been a very extensive mine, having been one of the largest producing mines of the State, but owing to the territory being nearly worked out, was operated only a part of 1887, being idle in the summer. Owing to the coal being near the surface, the roof in several portions of the mine is poor, resulting in a great many cave-holes, allowing the surface-water, during heavy rains, to pour into the mine, which keeps the road-ways wet, muddy, and in very bad condition, also resulting in some injurious effect to the sanitary condition of the mine. I have had no complaints from the mine, and consider it in a fair condition. There are employed 110 miners, including boys, and 22 day hands, including engineers, blacksmiths, carpenters, and topmen, working an average of 125 days during the year.

Mine No. 7 was a steam plant, located within the city limits of Weir City, having railroad connection with the Cherryvale branch of the Kansas City, Fort Scott & Gulf Railroad. The mine was ventilated by a Crawford & McCrimmin 10-foot ventilating fan, being the first fan of this make erected in the State. Owing to the coal territory belonging to this mine being nearly worked out at the time of my first visit, it was found in very poor condition as regards drainage, but as it was about to be abandoned, and after consultation with a committee of the miners, I did not consider it to the benefit of any concerned to compel the company to rectify the grievances complained of, there being no danger to the miners, but only inconvenience. The mine was finally worked out and abandoned in August, 1887. The number of miners employed, including boys, was 65, and day hands, including engineers, blacksmiths, carpenters, and topmen, 21. Average number of days worked in the year, 100.

Mine No. 16 was opened by horse power, and afterwards steam was sub-



stituted. The mine is located near the Weir City zinc smelter, and is connected by switch with the Pittsburg and Columbus branch of the St. Louis & San Francisco Railway. The shaft was not sunk with a view of making an extensive mine, as they had but a limited amount of coal territory to work out, therefore no elaborate equipment was erected and was not sufficiently developed to require inspection. I have received no complaints therefrom. The mine was worked part of five months of the year, employing 39 miners, including boys, and 14 day hands, including engineer, blacksmith, carpenter, and topmen. The average number of days worked during the year was 97. At this mine the miners are paid by the box instead of by the bushel, receiving 35 cents per box. Wm. Barrett, pit boss.

KEITH & PERRY COAL CO.

Mine No. 2 is a steam plant, located west of Weir City, and is connected by switch with the Cherryvale branch of the Kansas City, Fort Scott & Gulf Railroad. It was sunk, equipped and is now operated by William Hamilton sr., he putting the coal on the cars for Keith & Perry at a stated price per bushel. During 1887 Mr. Hamilton increased his boiler capacity by the addition of one boiler for the purpose of furnishing steam power for a new engine, located underground, to run a cable line for hauling coal from the workings to the shaft bottom. While the principle is similar to other rope systems of hauling, yet the design of the machinery connected with this improvement is original with Mr. Hamilton, it having been built by the Joplin Foundry and Machine Shop under the directions of Mr. Hamilton. When this machinery was first put in it was predicted by a great many that it would be a failure, but is now conceded to be a perfect success, resulting in a cheapening of the hauling of coal in this mine. Although occasioning a great expense at first, it will be productive of good returns for the money laid out. The mine is ventilated by a furnace which has not at all times given perfect satisfaction, and Mr. Hamilton contemplates the erection of a ventilating fan to replace it. I have had no complaints therefrom, and consider the mine in fair condition. There were employed 105 miners, including boys, and 24 day hands, including engineers, blacksmiths, carpenters, and topmen, working an average of 176 days during the year. With the assistance of his son and Mr. A. Norton, Mr. Hamilton manages his own mine.

Mine No. 3 is a steam plant, located about one-half mile north of Weir City, on the Cherryvale branch of the Kansas City, Fort Scott & Gulf Railroad. This mine is ventilated by a ten-foot fan built by a Parsons firm. On visiting the mine, I found that the fan, owing to faulty rope connections with the engine furnishing power to run the same, was not being run at a sufficient rate of speed to furnish enough ventilation for the requirements of the mine. The attention of the pit boss was called to this fact and the defects were speedily remedied, so that the fan is now run at a



greater rate of speed and has sufficient capacity to furnish an ample supply of air if properly conducted and distributed to all the workings and ramifications of the mine. On examining the mine, the ventilation was found to be faulty in several places, principally at the heads of entries, for the lack of break-throughs being near enough to the heads of entries. I requested the pit boss to have some doors put up instead of screens, and improve the ventilation to such an extent as would make the mine more generally in a healthy condition, which request was complied with as soon as possible, and at my subsequent visit I found the ventilation much improved. There were employed 105 miners, including boys, and 31 day hands, including engineers, blacksmiths, carpenters, and topmen. Average number of days worked in year, 216.

Mine No. 2-B is a steam plant, located near Scammonville, on a switch connecting with the main line of the Kansas City, Fort Scott & Gulf Railroad. This is one of the largest producing coal mines in the State, and is also one of the best conducted. It was ventilated by one of the largest and best constructed furnaces in the State, which has been replaced by a fourteen-foot fan built by Wm. M. Larkie, of Joplin, Mo. This mine has four separate openings. Two of the openings used are downcast, one is an upcast, and the fourth is a traveling-way or escapement shaft. In the latter part of 1887, this plant was burned down, and as the coal had been pretty nearly all mined out of the territory adjacent on the south side of the shaft, it was deemed advisable to sink another opening, to be used as the hoisting-shaft, at the head of the workings on the north side where they had an abundance of territory, to which place they moved and erected all of the plant not destroyed at the other opening. This last opening, it might be said, was sunk at the head of the dip workings, thereby enabling them to bring the coal from the mine workings to the shaft down hill instead of pulling it up hill, which they had to do at the old shaft. This diminished the cost of hauling to a profitable degree. The mine was found in very fair condition, and I have had no complaints therefrom. There were employed 90 miners, including boys, and 31 day hands, including engineer, blacksmiths, carpenters, and topmen, working an average of 207 days in the year.

Mine No. 3-B is a steam plant, located one mile southwest of Scammonville, and is connected by switch with the main line of the Kansas City, Fort Scott & Gulf Railroad. This mine was ventilated by a small but well-constructed furnace, which was at the time of its erection amply sufficient for all ventilating purposes, but on the mine being developed to a large extent, it was found inadequate, and deemed advisable to replace it with a 10-foot ventilating fan, which has been erected. The mine was found well ventilated, and in a generally fair condition, employing 100 miners, including boys, and 32 day hands, including engineers, blacksmiths, carpenters, and topmen, working an average of 207 days in the year.



WEIR BROTHERS' MINE

Is a horsepower plant, located in Weir City, connected with the Cherryvale branch of Kansas City, Fort Scott & Gulf Railroad. This mine is one of the oldest in the county, but has been developed but very little compared with its age, it being operated principally in the winter months. At the time of my visit the mine was at a stand-still, but has since resumed operations. I have no complaints from it. It is ventilated by a furnace of rude construction, although furnishing a sufficient quantity of air for the limited number of men usually employed therein. There are employed 24 miners, including boys, and 8 day hands, including blacksmiths, carpenters, and topmen, working an average of 182 days in year.

PARSONS COAL CO.,

(James Dennis, Receiver,) is a steam plant, located one and one-half miles north of Weir City, connected by switch with the Cherryvale branch of the Kansas City, Fort Scott & Gulf Railroad, and is ventilated by a 9-foot fan, built by a Parsons (Kansas) firm. This mine is equipped with a very fair plant, but on account of litigation, has probably not done as much work as it would have done had no legal complications arisen. The mine was found to be in fair condition, but had not complied with the law as to a second opening, but Mr. Dennis, the receiver, promised upon my demand to proceed at once to sink one. There were employed 40 miners, including boys, and 13 day hands, including engineer, blacksmith, carpenters, and topmen. Average number of days worked in year, 216. Peter White, pit boss.

WEIR CITY COAL CO.,

(R. Bennett, Superintendent,) is a steam plant of small construction, located immediately south of Weir City, connected with the Cherryvale branch of the Kansas City, Fort Scott & Gulf Railroad. This mine is ventilated by a furnace of very rude construction, it being nothing more nor less than a fire built in the center of the air-way leading to the air-shaft. It was found entirely inadequate for the ventilation of the mine. The mine generally was in a very poor and unhealthy condition. I requested Mr. Bennett, the superintendent, to have erected either a furnace or put in a fan. The latter he agreed to do, and has since done so, with sufficient capacity to furnish all the air necessary for the requirements of the mine, if properly distributed. I have had no further complaint from this mine. There were employed 46 miners, including boys, and 13 day hands, including engineers, blacksmiths, carpenters, and topmen. Average number of days worked during year, 216.

COLUMBUS COAL COMPANY

Is a steam plant, located on the main line of the Kansas City, Fort Scott & Gulf Railroad, three and one-half miles north of Columbus, and is ventilated by a furnace, which supplies the necessary amount of air. At the time of my first visit the mine was temporarily closed, this suspension being



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brought about by a fire which existed, originating from spontaneous combustion in the gob from slack coal deposited therein, resulting from the screening or riddling of the coal by the miner before being sent out, this being the only mine in the State where the coal is screened in the mine. My predecessor informed me that he had suggested to the management some time previous to the breaking out of the fire to send out the slack with the lump coal and screen it on the surface, as he feared that this accumulation of so much slack coal mixed in the gob would result in a fire from spontaneous combustion, which might probably put them to great expense. This suggestion was not acted upon, and his fears were verified. It became necessary to wall and hermetically seal that portion of the mine where the fire originated, thus resulting in a great expense and a suspension of operations for a considerable length of time. Upon a subsequent visit the mine was found well ventilated and in a generally fair condition, but the fire was still in existence, which has prevented the development of that portion of the mine, temporarily at least. The pit boss, Chris. Newland, together with the superintendent, Mr. Wilson, have exercised good judgment and taken every precaution to protect the health and safety of their miners. They employed last year 39 miners, including boys, and 13 day hands, including engineers, blacksmiths, carpenters, and topmen, working an average of 230 days in the year.

THE NORTON COAL COMPANY

Is a horsepower plant, located at Scammonville. It is ventilated by a furnace, and is worked on the single-entry system. This mine is connected by a switch with the main line of the Kansas City, Fort Scott & Gulf Railroad. The mine is in fair condition, and I have received no complaints regarding it as to insufficient ventilation, etc. It employed, in 1887, 46 miners, including boys, and 12 day hands, including blacksmiths, carpenters, and topmen, working an average of 150 days during the year.

GEORGE ROBINSON'S COAL SHAFT

Is a horsepower plant, located three miles north of Columbus, with a trade purely local. It is ventilated by a furnace, supplying sufficient air. The mine is worked principally by members of his own family during the winter months, and being practical miners, they are amply able to take care of themselves, so far as maintaining the mine in a healthy condition is concerned. Number of miners, 3; day hands, 2, working 170 days during the year.

OSTHOFF BROS.' MINE

Is a horsepower plant, located three miles north of Columbus, with a local trade. The mine is ventilated by a furnace, and is worked principally by owners, employing 3 miners and 2 day hands, working 228 days during the year.

There are several other small mines in the county, which are worked



principally in the winter months, including a deep mine having a steam plant at McCune, which is temporarily abandoned. These mines have merely a local trade, and employ in the aggregate about 50 men.



LEAVENWORTH COUNTY COAL MINING.

The Leavenworth county coal field, though now known to be quite extensive, requires a large capital for its development, because of the great depth at which the coal is reached, and the mines are not so numerous as they would be if the vein was nearer the surface. There are at present but three mines in the county—the Leavenworth Coal Company and the Riverside Coal Company in the city of Leavenworth, and the mine at Lansing operated by the Kansas State Penitentiary. It was thought for a long time after the Leavenworth Coal Company's mine had reached coal that the field extended over but a small area, but about eight years ago the Penitentiary shaft was sunk to a vein of coal, thought by a few to be the same vein worked by the Leavenworth shaft, but the two shafts being five miles apart, it could not generally be believed by the people of Leavenworth city or county that the Leavenworth vein extended to Lansing, although to the practical eye every indication showed it to be the same. By reason of this latter theory another shaft was sunk, in 1887, between the Leavenworth and Penitentiary shafts, which pierced the same vein at comparatively the same depth, passing through almost identically the same strata from the surface to the coal, thus verifying the belief of all practical men, and convincing the most skeptical that this coal field was of larger area than was at one time generally believed. Since the successful completion of this new mine the interest in the coal deposits of Leavenworth county has been revived, and in consequence several new corporations have been organized, preparatory to the sinking of more shafts in the near future.

LEAVENWORTH COUNTY COAL MINES.

Name of operator.	Post-office address.	Total No. barrels of coal mined in 1887.	Average No. of miners employed.	Average price paid per barrel.	Total amount paid for mining in 1887.	Average No. of day hands employed.	Average rate per day paid day hands.	Average No. of days worked.	Total amount earned by day hands.	Accidents.		No. of kegs powder used.
										Fatal.	Non-fatal.	
Leavenworth Coal Company.....	Leavenworth...	2,587,400	290	4c	\$103,496	51	\$2 00	197	\$20,094	...	...	20
Penitentiary shaft*	Lansing.....	1,624,618	315	...	...	...	...	310	...	...	...	500
Riverside Coal Company†	Leavenworth...	140,000	40	4c	5,600	40	2 00	35	2,800	...	...	...
Totals.....	...	4,352,018	645	...	\$109,096	91	...	...	\$22,894	...	...	...

* Worked entirely by convicts.

† Commenced hoisting coal October 13, 1887. Worked continuously from that time till end of year, except one week idle by reason of strike of miners. Large proportion of day hands to number of miners caused by construction.



REPORT OF MINES IN LEAVENWORTH COUNTY.

LEAVENWORTH COAL COMPANY.

This shaft is located on the United States Government Reservation, near the city of Leavenworth, and close to the Missouri river. The mine plant is the most elaborate and extensive in the State, if not in the West. It is equipped with a pair of double engines on the first motion, having cylinders 36 by 60 inches coupled to a drum 16 feet in diameter for hoisting the coal and debris from the mine. The cages in this mine are double-decked and bring up out of the shaft two cars on a deck, each car having a capacity of sixteen bushels, making the total amount hoisted at each winding sixty-four bushels of eighty pounds each. The time required to start and land the cage from a depth of seven hundred and twenty-five feet, is thirty seconds. The cables used in this shaft are made of the best English crucible steel, and are 1½ inches in diameter. The mine is ventilated by a twenty-five-foot ventilating fan built by Crawford & McCrimmin, Brazil, Ind., being the largest fan in operation in the State. This fan runs at the rate of thirty-five revolutions per minute, and furnishes all the air required in the mine. The mine having been in operation for so long a time, it is necessarily very extensive, requiring the use of a cable line inside of the mine to haul the coal from the working-faces to the bottom of the shaft, a distance of nearly a mile. Quite an addition to this cable line has been made during the past year, which, though expensive, is undoubtedly a source of great saving to the company, making this mine the largest and best equipped in the West. The power operating this hauling machinery is transmitted by cable from a pair of 12 by 16-inch cylinder engines located on the surface, but sometime in the near future the company contemplates changing this by placing the power underground, which will be a move in the right direction. As is customary with this company, every year numerous other additions and improvements are added to the plant, among the latest of which are a mechanical device for loading box cars with coal, doing away with a large amount of hand-labor and handling the coal much speedier. Mr. J. E. Carr, the Superintendent of the mine, is to be congratulated upon the success which has attended his every effort to handle and prepare coal by mechanical means, many of which are his own invention, being the result of a long and intelligent experience in and around coal mines. I might go on and enumerate many other good qualities of this mine, but deem it unnecessary. Suffice it to say, that I am unable to see in what way the management could be improved upon.

PENITENTIARY COAL SHAFT

Is owned by the State of Kansas, and located at the State Penitentiary, Lansing, Leavenworth county, Kansas, having connection with the Union Pacific, the Wyandotte, Kansas City & Northwestern, and the Leavenworth, Northern & Southern branch of the Atchison, Topeka & Santa Fé Rail-



road. This is the second largest producing mine of the State, and has been a source of great revenue, being worked entirely by convict labor. The equipment of this mine is first class in every respect. It is equipped with a pair of 14-inch by 24-inch cylinder engines, on the second motion, coupled to a drum twelve feet in diameter. The cages used are single-decked, holding two cars having a capacity of sixteen bushels each, and can be started and landed from a depth of seven hundred and thirty feet in thirty-five seconds, which furnishes the mine with ample facilities for an output of 10,000 bushels per day. It has two openings, one being used for hoisting coal only, the other for hoisting men, water, and debris. The mine is ventilated by a 15-foot ventilating fan of the very best construction, built by a firm in Pennsylvania, who have the reputation of manufacturing the best quality of that kind of machinery. The management of the mine, from breaking ground to the present day, has been in the hands of Mr. Oscar F. Lamm, superintendent, a gentleman who, I may say, has no superior in his profession, and this statement is borne out by the fact that the mine is in every particular in first-class condition, having large and spacious airways, and an abundance of fresh, pure air conveyed to its every part. Numerous improvements have been added during the past year, among which are additional screening facilities, for screening and preparing different grades of coal.

THE RIVERSIDE COAL MINE.

This is a new shaft, sunk in the year 1887, and located in South Leavenworth, being connected by a switch, built by the mining company, with the different lines of railway centering in Leavenworth. This shaft is a splendid exemplification of what can be done by push and energy, coupled with a perfect knowledge of the profession. The first shovelful of dirt was taken out on the 17th day of January, 1887, by John R. Braidwood, superintendent, and in just eight months from that day coal was reached, 720 feet below the surface. The plans upon which the work was done, and in fact, all the plans and drawings of the mine and its buildings, were executed by Mr. Braidwood, and are models of simplicity, while at the same time everything is of the most solid construction. The entire equipment of the mine is first class in every particular, the management having spared no expense to make it a model plant. It is equipped with a pair of 14 by 24-inch cylinder engines, on the second motion, of 100-horse power, coupled by two 24-inch pinions to a drum 14 feet in diameter, for hoisting the coal and debris from the mine. The cable used in this shaft is one and one-half inches in diameter, and is made of the best English crucible steel. The cages are single decked, each holding two cars with a capacity of 16 bushels each, enabling them to bring to the top 10,000 bushels of coal per day. The mine is ventilated by a 15-foot ventilating fan of the very best construction, located about 70 feet from the air-shaft, forcing the air through a tunnel to the same, and furnishing a bountiful supply for all purposes. There were employed, after



coal was reached, 40 miners and 40 day hands, the large number of day laborers being due to the construction constantly going on until the end of the year. The proprietors of this mine are to be congratulated upon the successful issue of what was deemed by a great many a venturesome enterprise. They were fortunate in securing at the start the services of Mr. Jno. R. Braidwood as superintendent, this gentleman having no superior in the West in his profession.



LINN COUNTY COAL MINING.

As yet but little capital has been employed in the coal industry of this county, but the energetic business men resident therein are realizing the great deposits of fuel beneath the surface of their county, and are taking the necessary steps for successful development. Hon. B. F. Blaker, of Pleasanton, associated with other gentlemen, has taken a deep interest in the matter, and the company with which he is connected has sunk a shaft and equipped a plant with all the modern improvements. There is every reason to believe that in the near future this will be one of the large coal-producing counties of the State. I desire to state in this connection, that the output of strip coal for this county in 1887 should read 175,000 bushels instead of 25,000 bushels, as given in the statistics of this report.

LINN COUNTY COAL MINES.

Name of operator.	Post-office address.	Total No. bushels of coal mined in 1887	Average No. of miners employed.	Average price paid per bushel.	Total amount paid for mining in 1887	Av. No. day hands employed	Av. No. of days worked	Av. rate per day paid day hands	Total amount earned by day hands	Accidents.		No. kegs powder used.
										Fatal.	Non-fatal.	
T. W. Gage	Orchard	75,000	5	4	\$3,000	4	175	\$2 00	\$1,400			75
— Kessler	"	85,000	6	4	3,320	4	175	2 00	1,400			85
Jas. F. Bell	Pleasanton	50,000	5	4	2,000	2	178	12 00	712			25
Linn Co. Coal Co.	"	35,000	12	5	1,750	9	80	22 00	1,440			36
E. C. Kennison	Prescott	15,000	4	4½	675	1	100	2 00	200			20
Thos. Manchester	LaCygne	52,000	10	4½	3,240	2	220	2 00	880			60
Totals		310,000	45		\$13,985	22			\$6,032			301

There are a number of other small mines in the county, worked principally in the winter months, employing 25 men, with an output last year of 75,000 bushels.

CONDITION OF MINES IN LINN COUNTY.

THOMAS MANCHESTER'S

Is a horsepower plant, located at La Cygne, without railroad connection, the trade being entirely local. It is ventilated by a furnace, and has two openings. This mine is operated principally in the winter months, and is generally found in fair condition, employing 10 miners, including boys, and 2 day hands, who worked an average number of 220 days during the year.

LINN COUNTY COAL CO.

Was formerly a horsepower, but is now equipped with a steam plant, and is located one mile north of Pleasanton, on the main line of the Kansas City, Fort Scott & Gulf Railroad, connected therewith by switch. It does both a local and shipping business. The mine is ventilated by a furnace, and is



being developed on the long-wall system, which has proven itself to be the most practicable for that particular vein of coal. So far this mine has been developed on a small scale, but every preparation has been made to open and operate extensively. The mine is in very good condition, and promises to be a good investment for the stockholders. It employed last year 12 miners, including boys, and 5 day hands, working only 20 days after the steam plant was put in, to January 1, 1888.

E. O. KENNISON'S

Is a horsepower plant, located near Prescott, with no railroad connection, having nothing but a local trade. The mine is ventilated by a furnace, and has two openings. It is in excellent condition, employing from 2 to 6 miners, and 1 day hand, who worked an average number of 100 days during the year.

T. W. GAGE'S

Is a horsepower plant, located seven miles east of LaCygne, without railroad connection, the trade being entirely local. The mine is ventilated by a furnace, has two openings, and is maintained in fair condition. It employed 5 miners and 3 day hands, who worked an average number of 175 days during the year.

KESSLER'S SHAFT

Is a horsepower plant, located seven miles east of LaCygne, without railroad connection. The mine has two openings, and is ventilated by a furnace. It is kept in fair condition, and employs 7 miners and 3 day hands, who worked last year an average number of 175 days.

S. COWELL, GEORGE WYANT, MRS. FORD, J. HART, DAVID EPPS, and JAMES F. BELL, each have small mines producing from 3,000 to 15,000 bushels annually. There are in addition to these, several other small mines in the county, upon which no comment is necessary. Their trade is entirely local, the mines being operated principally in the winter months. The increased railroad facilities which the county has secured within the past year, will greatly aid in the future more extended development of the coal-fields of Linn county.



BOURBON COUNTY COAL MINING.

This at one time was one of the principal coal-producing counties of the State, largely from its surface mines, but owing to the county's rich agricultural resources and the attention of its citizens being directed more in that channel, and also to the opening of mines in adjoining counties, thus affording them cheap coal, the coal interests of Bourbon county were for a number of years allowed to slumber; but owing to the superior quality of the Bourbon county coal, it being the best for general purposes found within a radius of several hundred miles, a new interest has been revived within the past year, and prospecting has been going on all over the county, by an organized effort of the citizens and capitalists of the county, with the result of swelling the output for the year 1887 to 1,000,000 bushels, which is a large increase over that of several previous years, and gives the promise of an increase of much greater proportions in the future. This coal has been produced wholly from strip and drift openings, there being numerous small drifts in the vicinity of Fort Scott, the largest being operated by T. H. Smallwood, one mile east; Reed & Sproal, two and one-half miles east, and Thurston & Knight, two miles northeast of Fort Scott; these, with the other drift mines, employing about 75 miners and 10 day hands, and the trade being principally local and the drifts being without railroad connection, employment is also given to a large number of teams, especially during the winter months. The surface or strip coal also gives employment to a number of farmers and their teams during the winter.



COAL MINES OF OTHER COUNTIES.

NEOSHO COUNTY.

The coal fields of this county are located a few miles from Thayer, in the western part of the county, and running over into Wilson county. These openings are all drifts, developed in a very crude manner, the work being carried on altogether on the long-wall system. There are a great many drifts in this field, each producing a small amount of coal, in no case working more than three or four miners, but producing in the aggregate 750,000 bushels of coal last year, sold principally at the mouths of the drifts, and giving employment to 175 miners, and day hands in proportion, principally during the winter months. The coal production of this county has never been extensive, but a number of the energetic business men of the county did a great deal of prospecting in 1887, and while the production will probably never be of mammoth proportions, yet it will be of greater extent than heretofore, and it is to be hoped will justify the efforts made by these gentlemen.

REPUBLIC AND CLOUD COUNTIES.

This coal field is situated in the northern part of Cloud and southern part of Republic counties, the mining operations being carried on at and near the town of Minersville. These fields, the quality of coal, etc., were fully described by my predecessor, as will be seen by reference to another portion of this report. The mines are not of sufficient magnitude to be described separately and in detail. They consist of slopes and shafts operated in rather a crude manner. A new mine, however, was opened in the latter part of 1887 that is a great improvement over previous developments, and we hope to see still greater improvements made during the coming year, thus advancing the coal interests of that section. The names of parties operating these mines are as follows: S. T. Curtis, one slope and one shaft; Charles Murray, two shafts; John Richardson, one slope; Alex. Henderson, one shaft; Samuel P. Linn, one slope; the total production from these mines in 1887 being 200,000 bushels, employing 50 miners, and day hands in proportion.

The coal deposits of Jewell county are a part of this field, but nothing was done during the past year.

COFFEY COUNTY.

I did not visit the mines of Coffey county, as there were only two in the county, and these idle most of the year, producing in the aggregate but 17,000 bushels of coal and employing a limited number of miners.



FRANKLIN COUNTY COAL MINING.

While the coal field of Franklin county is known as one of the oldest in the State, yet as large developments as the field demands have not been carried on. For a number of years previous to 1887 the attention of coal-men had been called to other and more productive fields, but a new interest has been revived in the matter by the enterprising business men of the county awakening to the fact that their coal field is a valuable one, and will amply repay extended development. The principal mine of this county is owned by J. H. Ransom, and is located at Ransomville, on the Burlington branch of the Southern Kansas Railway, having railroad connection therewith. It is a horsepower plant, and is ventilated by a furnace. The mine has two openings, and is a model plant of its kind, the owner sparing no expense or labor, and taking advantage of all the modern improvements incident to this plan of hoisting coal, in order to maintain its high standard. The underground working of this mine is conducted on the long-wall system, which is carried out to perfection, making it a first-class mine. This is practically the only mine fully developed and deserving of extended mention in the county. It gave employment last year to 50 miners, including boys, and 3 day hands, who worked an average number of 233 days, getting out 352,000 bushels of coal.

There are several other small mines, consisting of drifts and shafts, in the vicinity of Ransomville and Williamsburg, which in the aggregate employ about as many men during the winter months as the Ransom shaft. There are in the vicinity of Pomona several shafts completed and in operation, but from which no reports have reached this office except from the shaft of Johnson & Dyer, a new one not sufficiently advanced for inspection. This mine will in the near future be put in first-class shape, and is expected to be a large producing mine for that county. It employed while in operation last year about 10 miners.



SHAWNEE COUNTY.

The mines in Shawnee county were pretty well worked during last year, the output for the county being 107,000 bushels. The interest in the coal deposits of Shawnee county has taken new life, however, and there promises to be developments in the near future of a more extensive character than those heretofore existing. There were employed during the year 35 miners and 7 day hands.

RUSSELL, ELLSWORTH AND LINCOLN COUNTIES.

From information obtained, there were no new developments in the coal fields of these counties during the year 1887, but there are indications of an increased local demand for this coal that will necessitate the working of the existing mines on a larger scale or the opening of new ones. There were employed in these counties during the year 1887, 47 miners and 7 day hands.



THIRD ANNUAL REPORT.

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COAL MINED IN KANSAS IN 1887.

The following statement shows the amount of coal, in bushels, which has been mined in Kansas during the past year:

<i>Counties.</i>	<i>Bushels.</i>
Bourbon.....	250,000
Cherokee.....	9,831,553
Coffey.....	17,000
Crawford.....	8,041,225
Ellsworth.....	75,000
Franklin.....	552,000
Leavenworth.....	4,352,018
Linn.....	385,000
Lincoln.....	73,000
Neosho.....	750,000
Osage.....	9,840,189
Republic and Cloud.....	200,000
Russell.....	3,000
Shawnee.....	107,000
Total.....	34,476,985

STRIP COAL IN KANSAS IN 1887.

<i>Counties.</i>	<i>Bushels.</i>
Bourbon.....	750,000
Cherokee.....	600,000
Crawford.....	1,700,000
Coffey.....	150,000
Labette.....	150,000
Linn.....	25,000
Osage.....	600,000
All other counties in the State.....	800,000
Total.....	4,775,000

RECAPITULATION.

	<i>Bushels.</i>
Coal mined in Kansas in 1887.....	34,476,985
Strip coal in Kansas in 1887.....	4,775,000
Total coal output for 1887.....	39,251,985



LEAD AND ZINC MINES IN KANSAS.

This industry, which is confined to the southeastern portion of the State, was in a very prosperous condition during the entire year of 1887. The shipments from Galena for the year were 32,000 tons of zinc ore, and 1,600,000 pounds of lead ore. This interest gives employment to a large number of men, and represents a large amount of money invested. The industry is comparatively in its early youth, but the operators are continually developing new fields and extending old ones, and there can be no doubt that it will in time grow to large proportions. I had often promised myself at each visit to this section of the State to make an extended tour of these mines, but in every instance was compelled to defer it for lack of time. The industry is of such magnitude and of such importance to the State that, though not entirely within my official sphere, I should have liked to give it an extended notice; but without the necessary statistics, and the facts obtained by a personal investigation, am unable to do more than refer to it in this most cursory manner.

A portion of the product of the mines is shipped to Pittsburg and Weir City, Kansas, where there are a number of extensive smelting works, and prepared for shipment. These also give employment to a large number of men.