

State inspector of coal mines reports

Section 42, Pages 1231 - 1260

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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requested, and that no more full kegs of powder would be allowed in the mine under any circumstances.

The south side of the mine was abandoned at that time on account of the scarcity of men. The mine was equipped with an endless haulage rope, which extends the full length of the double track on the north side of mine. The intention is to extend this rope along the eighth west cross-entry when the present trouble is settled. Inspector traveled all over that part of the mine which was working at the time, and found the air sufficient for the number of men employed, but when the mine is filled to its capacity of miners it will require a great deal more air than was traveling at face of workings at time of visit to properly ventilate it. The mine is operated on the single-entry system, and the air in making its circuit has to pass so many curtains that are placed at the mouth of the room to conduct it around the faces. The result is, the most of the air is usually lost at these curtains and never reaches the working-face. The area of this mine is so large that I do not hesitate to say that it will be well-nigh impossible to furnish ventilation to all the miners that it is capable of employing, on account of working the mine on the single-entry system. In fact, I believe that in a short time this mine will be a fair sample of what a detriment the single entry is to every one concerned, and especially to the poor miner who has to work in it and exist on the amount of air furnished him. The pit boss of the mine is a conservative and practical man, who will do the best that can be done under the circumstances. He promised to have the airways, curtains, stoppings, etc., well attended to in future. The company's returns to this office show that 136 miners and 62 day men, working 201 days, produced 85,748 tons of coal during the year. The amount of tons stated included all that was produced in the strip pits of Cherokee county owned by this company. JAMES DUFFY is pit boss and W. R. CRANDALL superintendent.

Mine No. 23 belonging to the same company, and also leased by W. H. Barrett, is located northeast of Weir City and connected with the St. L. & S. F. railroad. Size of main shaft, 8x16 feet; size of air-shaft, 8x8 feet; size of fan, 4½x12 feet. This mine is also operated on the single-entry system, and at the time of my visit the miners working there were nearly all colored men; the prairie around the mine was literally covered with tents, in which those miners and their families lived. Main entries run north and south from bottom. The north side of mine was worked out and abandoned at that time. The condition of the mine was very poor, especially in regard to ventilation. At the mouth of the seventh west a door was needed where a curtain was hanging. The air at the face of this entry and in the rooms turned off of it was miserable. The air-course between the eighth and ninth west was in bad shape on account of a cave in air-course. The air in making its circuit had to travel over this cave. In fact, in traveling around the entire west section of the south side of the mine I found that it was a case of driving around falls or caves to make connections for air, and in many cases the places that were being driven around these caves would fall in as soon as the connection was made; in this way the men were working in bad air continually. The roof is soft on this side of the mine and the dusky miners seemed to be incapable of securing it. There were three openings, with an escapement ladder in each. One of these openings is on the fifth west and is used as an upcast for the west side of the main south. A little pot was hanging in it at the time of visit. On the east side of the main south entry the ventilation was better. Sixty miners, 55 day men, working 138 days, produced 45,118 tons of coal during the year. GEORGE FULTON is pit boss.



Mine No. 49 belonging to the same company, and also leased by W. H. Barrett, is located on the north edge of Weir City, and connected by switch with the K. C. Ft. S. & M. railway. There are two openings, 40 feet deep; one is used for hoisting and the other for ventilation and escapement. This is a new mine, and is equipped with three engines: A light double engine, 32 horse-power, is used for hoisting; a small engine is used as pump and fan engine; and a splendid electric automatic engine, with 12x18-inch cylinders, is used for generating electricity to run the mining-machines which are in use in this mine. All of these engines are placed in a large and substantial engine-room near the top of the shaft. One cylinder boiler, 44 inches in diameter, 26 feet long, and one flue boiler, 66 inches in diameter by 18 feet long, with 56 four-inch flues, furnish sufficient steam to run all machinery. The company had three mining-machines in use in the mine at the time of my visit, which were being operated with success. It was estimated that one machine could mine 75 tons of coal per day. All work was paid by the day; the loaders and men who handle the machines receiving a certain price per day; this price I could not learn. The general condition of the mine was good. The volume of air at intake registered 32,000 cubic feet per minute. Roadways were all in fair condition. There were about 30 men employed in this mine at that time. The mine was also equipped with self-dumping cages; they are an invention of W. H. Barrett, the lessee of the mine, and are a neat and easy-working contrivance. Thirty miners or day men, working 200 days, produced 40,371 tons of coal during the year. ANDREW BRAIDWOOD is pit boss.

Mine No. 55 belonging to the same company, and known as the "Daisy," was worked out and abandoned in June. The company reports 49 miners, 25 day men, working 107 days, produced 31,855 tons of coal during the year. DAN. THOMSON was pit boss.

Mine No. 1 belonging to J. H. Durkee Coal Company is located southwest of Weir City, and connected with the K. C. Ft. S. & M. railway. The main entries are driven north and south from bottom. The single-entry system is used. Inspector traveled all over this mine in company with the air man, James Driver, and found it in poor condition. On the first west there was scarcely a curtain hanging at the mouth of the rooms along the entry that did not require repairing. At one place a stopping was needed in place of the curtain that was hanging. On third west, on same side, needed a door where a curtain was in use. In fact, in going all round the mine, I found that the same state of affairs existed in many places in every entry. The reason is easily found, as I consider that the lack of ventilation was due almost entirely to the system on which the mine was worked, viz., the single-entry system. Add to this the fact that there was double the number of miners at work in the mine than it could comfortably accommodate, and the smoke from their lamps had to be carried off by the current of air in circulation, it will easily be seen that it was well-nigh impossible to keep the mine clear when the air had to travel all around the mine in a single current and pass so many curtains where it had every chance to leak.

The roadways in general were wet and muddy, but the foreman was working hard with a force of men on idle days and Sundays corduroying and ditching and otherwise fixing up, so as to improve the sanitary condition of the mine and at the same time place it in a condition so as to be able to increase the output of coal. At time of Inspector's visit this mine was overcrowded with men, on account of the trouble existing between the miners and the "Big Four"; but in all

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my travels I never saw a better spirit manifested among working men than I found here. They were simply dividing their earnings with each other without a murmur, in order to win their fight against the coal companies which would not sign the agreement. When I say dividing their earnings, I mean that in every place in the mine two men were working and only getting out about the usual amount of coal that one man would get were he at work in the place by himself.

After going all through the mine, I interviewed the pit boss and requested him to make a number of improvements which I suggested. This he faithfully promised to do, stating that he was willing to do anything and everything he could in the way of repairs. Mr. Driver, the air man, is a man who has spent the greater part of his life in and around the mines, and thoroughly understands his business, and I have no doubt he could keep the air circulating around the working-faces were he not handicapped by the system the mine is operated on. Two hundred miners, 10 boys, 20 underground day men, 13 overground day men, working 350 days, produced 111,735 tons of coal during the year. DAN. MILLER is pit boss.

Mine No. 5 belonging to the same company is located northeast of Weir City and connected with the St. L. & S. F. R. R. I visited this mine August 1. The foreman accompanied me on my expedition of the mine. Started on north-side shaft from air-shaft through air-course; found that it required cleaning at different parts along it. Proceeded to first west at face of this entry, where the air was very weak, the last break-through being 120 feet from face, and repairs to curtains being needed at the mouth of rooms along the entry. In the other entries on this side of the mine the same lack of air existed. On the south side the air was also very weak, especially on first east. I requested Mr. Humble to have a place that was being worked at room width cut down to 12 feet wide, so as to make a more speedy connection for the air, and to avoid smothering those that were depending on this connection. This he ordered done before I left, and the rest of the improvements I had requested to be made he assured me would be attended to at once.

This mine is also run on the single-entry system, and in this case, as in every other where the single-entry system is used, the air is not kept up to the working-face. Another feature of this mine, and one that works hardship on the parties in charge, is the way the coal pitches—it makes it necessary for all work to be done to the raise of the coal. The amount of water to be contended with, and the difficulty of pushing cars up hill, makes it next to impossible to drive any work to the dip. Mr. Humble showed a disposition to do the very best he possibly could under the circumstances. The mine is equipped with a light double hoisting engine, of about thirty horse-power; one steel cylinder boiler, forty inches in diameter and twenty feet long, furnishes steam to run the machinery. Depth of shaft, 45 feet; size of same, 6x16 feet; size of fan, $2\frac{1}{2}$ x8 feet. Volume of air at intake registered 15,000 cubic feet per minute. Average thickness of coal, 45 inches. Sixty miners, 3 boys, 9 underground day men, 8 overground day men, working 250 days, produced 45,499 tons of coal during the year. ADAM HUMBLE is pit boss.

Mine No. 5 belonging to Bennett & Crowe, known as "Bennett's slope," is located southwest of Weir City, and connected with the K. C. Ft. S. & M. railroad. A light hoisting engine of about forty horse-power is used to haul coal out of the slope by means of a tail rope. A little engine of about twenty-five horse-power is used as pump and fan engine. Ventilation by fan ten feet in

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diameter. The mine is operated on the single-entry system. The volume of air at intake registered 14,500 cubic feet per minute. Yet, with this volume of air going into the mine, I found the air was weak in a great number of places on account of leakage at stoppings and curtains. Two doors also leaked considerable. I called the foreman's attention to the fact that he had a good volume of air going into the mine, and all that was required of him was to have it properly conducted by making his stoppings air-tight, and by paying better attention to the curtains and doors. This he promised to do in the future.

There was another feature in connection with this mine which greatly impaired the condition of the air, viz., the practice of stopping the fan soon after the shot-firers came out of the mine at night and not starting it until the following morning. By doing so the air was shut off about ten hours. The air current being stopped, the gases generated in the mine and considerable of the smoke from the shots that had been fired must necessarily remain therein. Hence the mine was filled with a poisonous atmosphere, which the miners had to breathe for a number of hours every morning, or rather until the fan had been running long enough to dilute or carry off this foul air. I therefore requested the pit boss to see Mr. Bennett and state to him that I desired that a man should be left at the mine during the night to keep the fan running, in order to have the mine cleared of all impurities when the miners started to work in the morning. This he faithfully promised to do. I have been unable to visit the mine since that time, and therefore cannot tell whether this was done or not. But I intend to get around to that mine soon, and if that matter was not adjusted I will endeavor to have it done at once. The vein averages forty-six inches in thickness, and is a good shooting coal. Forty-five miners, 10 boys, 9 underground day men, 6 overground day men, working 278 days, produced 33,298 tons of coal during the year. RICHARD LUKE is mine boss.

Mine No. 1 belonging to J. R. Crowe Coal Company is located at Stippville, three miles north of Columbus, and connected by a switch with the K. C. Ft. S. & M. railroad. There are two openings to this mine, forty-seven feet deep. One is used for hoisting and the other for ventilation and escapement. Size of main shaft, 6 x 8½ feet; size of air-shaft 6 x 6 feet; size of fan, 2½ x 8 feet. Volume of air at intake registered 25,150 feet per minute, fan making 75 revolutions per minute. This mine is operated on the partial double-entry system.

Mine No. 2 belonging to the same company is located one and one-half miles west of Weir City, connected with the St. L. & S. F. railway. This mine is worked on the single-entry system; with the exception of one set of entries, they are driven double. In traveling around this mine, I found the ventilation throughout very good, considering the system. Considerable improvements have been made in the mine during the last year, which the foreman called my attention to, such as grading roads, making better air-courses, and brushing different places to make shorter and better hauling. Twenty-five miners, nearly all white men, were employed at this time. The mine is capable of employing 125 miners, but as this particular mine was involved in the strike, they had to run it with a reduced force of miners. This is what is known as the Jack Wear mine. The manway is partitioned off the main shaft; there was no banister on the stairs; so I left orders with the foreman to have a banister put on from top to bottom. The mine is ventilated by fan fourteen feet in diameter with four wooden blades. Gravity and rotary screens to screen coal. The company reported 110 miners, 19

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boys, 13 underground day men, working 174 days, and producing 52,368 tons of coal during the year. JOHN WELSH was pit boss, succeeded later by TOM McCUSKEY.

Mine No. 3 belonging to the same company, located two miles west of Weir City, on a switch of the St. L. & S. F. railway, is a new mine that commenced operation in the fall. I have been unable to visit the underground workings, except to investigate the cause of an accident that took place there in January, 1900, and therefore cannot give a proper description of the mine. Fifty miners, 8 underground day men, 12 overground day men, working 85 days, produced 5240 tons of coal during the year. JAMES EVANS is pit boss.

Mine No. 4 belonging to the same company is located at Stippville, and connected with the K. C. Ft. S. & M. railroad; is also a new mine, which commenced operation about the end of the year. Depth of shaft, 35 feet; size of same, 8x14 feet. This mine gave employment to 30 miners, 6 underground day men, 8 overground day men; worked 36 days and produced 2880 tons of coal during the year. This mine was opened up for the purpose of taking out the southeast corner of the quarter-section of land on which their mine No. 1 is situated. The roof was bad in the places driving towards this corner from their mine No. 1, and the company concluded to sink No. 4 and work narrow places, which would enable them to take out that block of coal with the new mine. J. E. MAXWELL is pit boss.

The Joseph Humble Coal Company mine No. 6 is located one mile north of Turck, and connected by switch with the K. C. Ft. S. & M. railroad. This is also a new mine that was sunk in the beginning of the summer. Depth of shaft, forty feet. When this shaft was first sunk the appearances were very discouraging. It must have been sunk on a fault, as the coal was only fifteen inches in thickness at the bottom of the shaft. But when the entries were driven a little distance away from the bottom, and the mine opened up, a good vein of coal was found, which averaged forty-four inches in thickness and is overlaid with a good black-slate roof. This is the mine at which Mr. William Humble received injuries from fall of slate on September 20 from which he died in a few hours afterwards. The mine is operated at present by horse power, but I expect the company will put in an engine soon to do hoisting. Quite a number of houses have been built close to the mine, along the road leading from Scammon to Columbus. The mine gave employment to 65 miners, 6 boys, 9 underground day men, 9 overground day men; worked 110 days and produced 14,197 tons of coal during the year. WILLIAM HUMBLE is pit boss and JOSEPH HUMBLE superintendent and lessee.

The J. C. Graham Coal Company Mine No. 1, known as "Graham slope," is located one-half mile north of Scammon. A little ten-horse-power engine is used to pull coal from the slope with haulage rope. The coal from the strip pits adjacent to the slope is also taken out with this haulage rope. The air in the mine was rather weak, but they were sinking a second opening, which would be completed in about three days. This would improve the air considerable, as the ventilation at that time was natural, but when the second opening is completed a furnace will be placed in it. The vein here averages 43 inches in thickness. The mine has railroad connections with the K. C. Ft. S. & M. Seventy-five miners, 8 overground day men, working 120 days, produced 12,961 tons of coal during



the year. This includes the strip-pit production and the number of men employed in the pits. A. McALLISTER is foreman. M. L. WALTERS is underground superintendent for all this company's mines.

Mine No. 2 belonging to the same company, known as the "Katy" mine, located northwest of Scammon, is owned by W. S. Norton and leased by J. C. Graham. Size of main shaft, $14 \times 7\frac{1}{2}$; size of air-shaft, 6×8 ; depth, 67 feet. Gravity and shaker screens in use. The third east off the main south was the only entry that was being driven at the time of Inspector's visit; all others had been turned into rooms. The mine was in fair condition, but will soon be worked out. Fifty miners and 12 day men, working 228 days, produced 31,293 tons of coal during the year. WILLIAM SMITH is pit boss.

Mine No. 3 belonging to the J. C. Graham Coal Company, known as the "Blazing Rag," is located in Scammon, a short distance from the K. C. Ft. S. & M. railroad depot. This is a shaft opening, steam power. A little thrashing engine is used for hoisting. At the time of Inspector's visit, all coal produced was hauled with wagons to the railroad-cars on a switch of the K. C. Ft. S. & M. railroad. Since that time I have heard that a switch has been run to the mine, which will save the company the expense of hauling the coal in wagons. This is a new mine, and should have had a good current of air circulating through it, yet upon examination I found the air very weak in most places. The furnace was not properly attended to; the bars on the bottom of the grate were completely choked with clinkers. This injured the good work the furnace should have been doing so much that it scarcely had draft enough to move a light when sitting with it close to the fire. The roadways throughout the mine were wet and muddy, and curtains at the mouth of the rooms were allowed to run down for lack of attention. The mine presented the appearance of being utterly neglected. The foreman stated that he had started to do a lot of ditching, which would carry the water off the roads and keep them dry. He promised to pay careful attention to the furnace and to keep the curtains in repair, and also to put up doors in place of curtains whenever they were required. One hundred miners, 9 underground day men, 9 overground day men, working 252 days, produced 23,042 tons of coal during the year. HARRY CASEBEER is pit boss and M. L. WALTERS underground superintendent.

Mine No. 4 belonging to the same company is located one mile south of Scammon. This mine was idle, making repairs and fixing up a small hoisting engine, when visited. Coal is hauled with wagons to railroad-cars, to a switch of the K. C. Ft. S. & M. R. R. The grading had been done preparatory to putting in a switch to the mine from the Memphis road. I learn this switch has since been put in. The mine is ventilated by furnace. Sixty miners, 5 underground day men, 8 overground day men, working 135 days, produced 11,609 tons of coal during the year. WILLIAM MOODY is pit boss.

Mine No. 5 belonging to the same company is located two and one-half miles north of Scammon and is connected by switch with the K. C. Ft. S. & M. R. R. This is a new mine which was sunk during the summer. It is the intention of the company to operate this mine on a much larger scale than any other of its mines. A large tower has been built, and all the latest improvements to be found around a mine are to be put in at this one.

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The Norton Coal Company's mine No. 3 is located three-quarters of a mile west of Scammon, and connected by switch with the K. C. Ft. S. & M. railroad. This is another new mine that was sunk this year. An escapement shaft, 300 feet from the main shaft, has been put down, in conformity with the new escapement-shaft law. Inspector did not visit the underground workings of this mine, as it was not opened up when I visited the mines in that locality. I had an occasion to visit the mine, however, to see if the anti-screen law had been complied with. I noticed that a large and substantial tower had been built. Improvements of all kinds were being made, to place the mine in a condition to handle a good output of coal. The company sent in their report on the blank issued to them for that purpose, which was as follows: 20 miners, 4 underground day men, 3 over-ground day men, working 90 days, produced 2500 tons of coal, valued at \$3250. CAL. WALTERS is pit boss.

On the blank mentioned above there is a space set aside for remarks. The following remarks were written in this space:

"We are now working about forty men, who are above the average in intellect, who are well pleased with their job, and are earning from \$2 to \$8 per day. We have our escapement shaft down and our top scale in. Everything working smoothly. We have heard that there is a strike or boycott going on somewhere in the surrounding country, but, as it has not struck us yet, we take it for granted that those who are 'pushing' it along have not yet discovered that we are in the business. Except for this unfortunate and uncalled-for and unjustifiable contention between employer and employee, every practical coal-miner in and around Scammon might to-day have a bank account of several hundred dollars. I am glad to say that in my judgment the worst of the storm has passed over, and the day is not far distant when the men will recognize as their best friends those who give them employment and pay them fair wages. And I further believe that the time is not far off when a few salaried leaders, who work only with their jaws, will be unable to lead laboring men around by the nose, as they would so many burros by the halters."

A person reading the above might be led to believe that there was no strike in existence in this district, yet I am sorry to say that there is a strike still in progress, and it is directed against the "Big Four" coal companies, and their contemporaries. Let us hope that it will soon end, and result in a victory for the miners.

Mine No. 6 belonging to the Southwestern Coal and Improvement Company is located at Mineral, on a branch of the M. K. & T. railway. Depth of shaft, 126 feet; size of same, 7 x 14 feet; size of air-shaft, 6 x 7 feet. Ventilated by fans 14 feet in diameter with 4-foot blades, fan making 62 revolutions per minute. The mine is equipped with a large double, first-motion engine of about 120 horsepower, for hoisting. This company was also included in what is known as the "Big Four." This mine had been enclosed by a stockade; at the time of the Inspector's visit part of it had been taken down. About 50 miners, 10 day men, were employed at the mine at that time. All the miners were colored men, imported from Southern states to take the place of the striking miners. At the time of my visit to the mine, August 19, these miners were not crowding the market with coal, as a glance at the bulletin showed the average output of the mine to be about sixty tons of mine-run coal per day.

The mine is operated on the double-entry system. The volume of air registered 3400 cubic feet per minute, which was well conducted around the working-faces. The general condition of the mine was good. The number of faults and the enormous size of them have made it an up-hill fight for the parties in charge of this mine to produce coal at anything like a reasonable figure. The main en-



tries are driven north and south, cross-entries east and west. On the south side of the mine, the first, second, third, fourth and seventh east entries have been abandoned on account of fault; and the first, second, third, fourth, sixth and seventh west entries on same side have also been abandoned for the same reason. The main south entry is also stopped, after having been driven about 1000 feet in fault. On the north side of the mine there have only been two entries turned east off the main north. This is because the main north ran 700 feet in fault, when it was stopped. Along the north side close to the bottom, required timbering. A force of men were working at this at the time of my visit.

In going through to inspect the condition of stairway, my attention was attracted by the condition of the passageway leading to the stairway. This was low, and in fact was no fit place for men to be obliged to crawl through to get to the manway. I therefore requested the foreman to have this passageway brushed and timbered from the manway back to the first east on the north side of the shaft, so that men could travel through it in safety. The foreman stated that this place was just the same then as when other Mine Inspectors had visited it, and that they had made no objections to it. I answered that the law was too plain on this point for me to overlook it, and that the passageway would have to be brushed to the height prescribed by law. He finally promised to begin work on it at once. The roadways throughout the mine were in good shape. Forty miners, 2 boys, 9 underground day men, 8 overground day men, working 220 days, produced 51,239 tons of coal during the year. JOHN RYAN is pit boss, H. M. REID, mine superintendent, and IRA FLEMMING general superintendent.

Mine No. 7 belonging to the same company is located east of Mineral, on a branch of the M. K. & T. railroad. This mine is well equipped with first-class machinery; a first-motion double engine of 120 horse-power is used for hoisting. At the time the Inspector visited this mine the miners employed in it were nearly all white men who had been imported from Kentucky and Virginia to take the place of the striking miners. These men were not producing as much coal as the same amount of the former employees of the mine could, as they were strange to the work; many of them had never been in a coal-mine before. This mine is also worked on the double-entry system. Ventilation is first-class. Great care is taken to keep everything in and about the mine in good shape, as this a good field of coal. Cages are protected with covers and safety-catches. One hundred and sixty miners, 6 boys, 17 underground day men, 16 overground day men, working 275 days, produced 118,945 tons of coal during the year. JOS. DAVIDSON is mine boss.

Mine No. 1 belonging to the Eastern Coal and Coke Company is located at Cokedale, on the line of the Missouri Pacific railroad. This is a new mine, and a model mine in every respect, and, should the company meet with the success they deserve after having gone to such expense, as is shown by the giant structure that has been erected, it will be a great benefit to Cherokee county, and especially to the laboring class. For, should this plant be run at its full capacity, I have no doubt that it would employ almost 1000 men. The mine is equipped with a light double hoisting-engine of about thirty-five horse-power. There is a roomy and substantial blacksmith shop with warehouse attached, in which are kept oil, machines, and tools of all kinds that are used in and around mines. Fifty new coke-ovens have been built; only six of these were in use at the time of my visit, on August 16. An engine of about forty horse-power, made at the Erie Engine Works, Erie, Pa., is used to run crushers, washers, and elevators.

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The process of washing the coal, preparatory to burning it into coke, is a sight that is rare in the state of Kansas. The coal, after being taken from the mine, is dumped into the crushers, where it is crushed. From there, after going through this process, it is led by means of chutes down into an elevator boot. It is then elevated from this boot by elevator cups to a bin above, then run down chute into the washer. The water used in washing the coal is led by means of a six-inch pipe from a large water-tank placed thirty feet overhead. The coal from the chute and the water from this pipe meet at the head of the washer trough, where the process of washing the coal begins. After being washed, it empties from the washer trough into another elevator boot, and is elevated from there to a large storage bin, the capacity of which is 175 tons. It is taken from this bin by large cars and conveyed to the coke-ovens, where, after burning forty-eight hours, it is removed as coke. The management claims that this coal makes a first-class grade of coke.

After looking over everything on top of the mine, I went below and examined the underground workings of the mine. The double-entry system is used throughout, with break-throughs every forty feet. The mine was ventilated by means of furnace at that time, but a large air-shaft was down 400 feet from the main shaft and connections were being driven to it, and the company intend to place a large fan over this air-shaft to ventilate the mine. This is what is called the top or first vein, and while it may be a good coal for making coke, the appearance of the mine at that time was not very encouraging as far as operating it at a profit to the owners was concerned. The coal seemed to lie in pockets; the vein ranging from eight inches to forty inches in thickness, and in fact in some places the coal ran out entirely. Nearly all the miners employed were working by the yard at a stated price. The condition of the mine in general was good, with the exception of two or three places. In these the air was rather weak, on account of connections not being driven up. An average of 35 miners, 5 underground day men, 5 overground day men, working 150 days, produced 2100 tons of coal during the year. A glance at the above returns will show that the 35 miners, working 150 days, with the production given, places the average production of each miner at 800 pounds of coal per day. This low average is easily accounted for when it is known that in a great many of the places in which the miners worked the coal had run down to five or six inches thick, and in others there was no coal at all. JAS. EWART is pit boss.

Mine No. 1 belonging to Mrs. D. Edwards, and leased by John McGregor, Wright Shaw, and John Warstler, is located about one-fourth mile east of the Crowe Coal Company mine No. 1 at Stippville. This mine was sunk and operated by Daniel Edwards until he died, on June 19. When I visited the mine, the above-named lessees were at work taking out water and fixing up the mine preparatory to getting out coal. This is a gin-power shaft, with no railroad connections. It worked a few months out of the year, but the lessees did not send in a report of the amount of coal produced.

Mine No. 1 leased by Stone & Dickson is a gin-power shaft opening, located one-half mile north of Scammon, on a switch of the K. C. Ft. S. & M. railway. Depth of shaft, 23 feet; size of shaft, 16x6 feet. This is a new shaft, which at time of visit was only being opened out from the bottom. The two lessees were the only ones working in it at that time. They did not send in a report of the amount produced at the mine during year.



The Hamilton & Braidwood mine No. 1 is located about one mile northwest of Weir City and connected by switch with the K. C. Ft. S. & M. R. R. There are two shaft openings; one is used for hoisting and the other for ventilation and escapement. The mine is equipped with good machinery. Mechanical ventilation, by fan 14 feet in diameter with 4-foot blades. Two visits were made to this mine during the year. It is operated on what is called the partial double-entry system. At the time of my first visit, September 2, the air was rather weak at the face of a great many of the rooms and entries. Two doors were needed where curtains were being used. The airway leading from the fifth west to the sixth west on the north side of mine was partially filled with dirt and slate. The foreman promised to have the doors put up and the airway cleaned out at once. On account of the strike against the "Big Four," this mine was overcrowded with miners. Many were working double and far ahead of any air. Places were being worked that under ordinary circumstances would have been abandoned, as it would have been hard to get miners to work in them had all the companies in the district been on good terms with their men. Connections for air were being pushed as rapidly as possible, however. The foreman and air man were working hard to make the condition of the mine as favorable as possible. The foreman stated that the south side of the mine would be worked out inside of a year. One hundred and fifty miners and eleven drivers were employed at the mine at that time.

In about two weeks after visiting this mine I was notified that several men who were working in it were suffering on account of bad air, and I was requested to go and examine the mine and have the matter remedied. I went there on September 18, the day after receiving the communication, and upon investigation found the statement was true. I went to the face of the main north entry, and there found a good current of air circulating, but when I went into the rooms turned off this entry I could scarcely see anything for smoke. I traveled all around those rooms looking for the cause of the lack of air circulation. I finally found a cross-cut through which the air had to pass in making its circuit, which cross-cut was caved almost tight and only allowed a small portion of air to pass through. There were five rooms below this point, and all of them depended for air on whatever came through this cross-cut. The result was they got very little, if any, air. I made known the cause of the trouble to the men working in those rooms, and told them that I would see that it was remedied. I also requested them to oblige me by letting me know in case it was not. I then went out to the bottom and found the foreman, stated the object of my visit and the condition of affairs in the rooms off the main north entry, and requested him to have the matter attended to immediately. He stated that he was not aware of the condition of this cross-cut or he would have attended to it sooner, and promised faithfully to see that it was cleaned out and put in shape at once. I learned soon afterward that this had been done, and it had accomplished the desired effect. I have had no complaints from this mine since. One hundred and thirty miners, 10 boys, 15 underground day men, 13 overground day men, working 275 days, produced 77,405 tons of coal during the year. STEWART HAMILTON is pit boss.

Jenkins Coal Company mine No. 1, known as the James Hall mine, is located about one-half mile south of the Central Coal and Coke Company's No. 11; depth of shaft, 40 feet; size, 6x14 feet. Mine has no railroad connections; coal is hauled in wagons to railroad-cars on Memphis switch. Six miners and 1 pusher, working 240 days, produced 4240 tons of coal during the year. HENRY JENKINS is pit boss.

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The L. S. Myers mine is a horse-power, located northeast of Weir City. When I visited this mine the management were busy making improvements around the mine and grading the roadways from the bottom along the main entry. Twenty miners, 3 underground day men, 2 overground day men, working 160 days, produced 7721.6 tons of coal during the year. DAVE MYERS is pit boss.

Pat Harman operated a little slope southeast of Weir City about two months during the year and produced 200 tons of coal.

Dave Scranton operated large strip pits southeast of Weir City, which gave employment to 4 coal-raisers, 12 men and teams, and 2 day men, who worked 248 days and produced 43,161 tons of coal; \$2.50 is paid for man and team and \$1.50 per day for day men.



OSAGE COUNTY.

THIS county is the fourth largest coal-producing county in the state. All the coal-mines in the county worked an average of 149 days during the year 1899, employed 1376 men and 45 boys, and produced 260,803 $\frac{1}{2}$ tons of coal, valued at \$493,011.38 $\frac{1}{4}$. This shows an increase of 81,743 $\frac{1}{2}$ tons over the production of 1898. There are, in all, seventy-six openings for coal operated in the county, including shafts, drifts, slopes, and strip pits. The thickness of the vein varies according to its location, as follows: In Arvonia, Quenemo and Rosemont the vein averages twelve inches; around Osage City and Peter-ton the average is thirteen inches; at Burlingame and Fosterville the average is seventeen inches; and in Scranton and Carbondale twenty inches is the average thickness. The mines in this county are all worked on the long-wall system, and they are nearly all ventilated by means of a furnace. In a few of them the ventilation is natural. The miners' earnings, as shown by the returns, compare favorably with those of any other county in the state. This was due to the remarkable briskness of the trade, an advance of twenty-five cents per ton for mining during the latter part of the year. One feature of the Osage county coal-mining which I am pleased to note is the small number of accidents which have occurred during the year; only three men were injured. This would indicate that the long-wall method is by far the safest way of coal-mining. The Mount Carmel Coal Company's mines produced forty-eight per cent. of the total production of this county. Forty-eight per cent. is produced by small operators, and the other four per cent. is produced by a co-operative body of miners known as the "Labor Exchange." Some idea of the advantage of their method may be gathered by the following incident:

In the past year coal sold as high as \$4.50 per ton to the consumer in Topeka. The Labor Exchange of Osage City and Burlingame, through their economical management, the result of the cooperative system under which they work, were able to place their coal on this market at a greatly reduced figure. The coal companies immediately protested against this action of the Labor Exchange, and appealed to the miners' unions to prevail on the exchange to sell at the prices established by the coal companies, claiming that, as they had made concessions to the miners, paying them an advance of twenty-five cents per ton for mining, it was necessary for the miners to sustain the companies in keeping up the selling price of coal. The miners' unions accordingly appointed committees to wait on the officers of

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the Labor Exchange, and requested them to raise the selling price of their coal. The exchange people refused to comply with this request, and in justification of their position offered the following explanation:

1. That by selling direct to the consumer, instead of the coal passing through the hands of the middleman, the consumer obtained his coal at greatly reduced rates, thus dispensing with the enormous profits that usually went to the middleman.

2. That they were paying their miners as high a price per ton for mining as prevailed in the district, and that, therefore, there was no just grounds for complaint.

They finally convinced the union committees that their request was not justifiable and the matter was allowed to drop.

No blame can be attached to the Labor Exchange for selling direct to the consumer instead of the middleman or jobber, as the coal companies were doing, for the reason that the jobber seems to control the market in Topeka. The jobber may buy the coal at a reasonable rate, at about two dollars per ton at the mine, and by the time it reaches the consumer the price is usually doubled, and most of the citizens are led to believe that this increase in price is caused by the demands of the miners which have to be met, and all kinds of opprobrium is heaped on the insatiable (?) coal-miner.

Should the Labor Exchange succeed in throwing the middleman out of a job it will deserve the thanks of the citizens of Topeka and of the coal-miners as well, as it will dispel the erroneous idea in the minds of the public that the miners are paid an advance in proportion to every advance made in the selling price of coal.

The Labor Exchange is a body of working men who are organized for the purpose of bettering their condition. They are endeavoring to materialize what has heretofore been an idea only, that of giving to labor the full share of its product. All are workers in this body. There are no drones in this hive; no high-salaried officers; no great man at the top to seize the lion's share and dole out a pittance to labor, as though he was bestowing it in charity. All are paid equal to the standard wage of the county, according to the work they are engaged in, and all share equally in the profits. The idea is a beautiful one, and cannot fail of success if properly directed. But let them beware that the spirit of competition does not divert them from their purpose, and leave their members worse off than at the beginning of their cooperative efforts. Let them not put coal on the market one cent less than at the selling price of their competitors, simply because they can do so and make as good wages as their brother miners who work for a corporation. They are not organized simply to make

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INSPECTOR OF COAL-MINES.

the same wages. They are there to make better wages; to get the full value of their labor. They are there to show the world what organized cooperative ownership can do for working men. Let the profits of their plan revert where they rightfully belong—to the members of their association. Let the record of their daily earnings show a material increase, rather than that the benefits of their efforts be given to the indifferent and sometimes antagonistic consumer. See tables on pages 52, 53, 54, and 55.

RECORD OF INSPECTION.

Mount Carmel Coal Company's mine No. 10, located at Scranton and connected by switch with the A. T. & S. F. railway, is a horse-power shaft, 67 feet deep, which has been in operation twelve years. This mine, like all others in Osage county, is worked on the long-wall system. The ventilation is by means of a furnace, the total volume of air going into the mine registering 5980 cubic feet per minute. This volume, although well conducted, was inadequate to meet the demand of the 100 men and 3 mules that were working in the mine. The main entries run north and south, cross-entries east and west. The fourth, fifth and sixth east off south, the second, third, fourth, fifth, sixth and seventh east off north, and fifth, sixth and seventh west off north, were all worked out; in fact, all of the west off south side has been abandoned on account of thin coal and sulphur top. The air was rather weak on the south side on account of the return air-course being low, narrow, and almost full of water. The foreman said he would remedy this as soon as possible, by drawing the water off and increasing the size of the air-course. At the time of the Inspector's visit the sixth east on the north side of the mine was within 50 feet of being through on mine No. 12 belonging to the same company. Stairway partitioned off main shaft served as an escapement shaft. Ninety-five miners, 5 boys and 9 day men worked 255 days, and produced 32,160.5 tons of coal during the year. THOMAS ELWOOD is pit boss. ROBERT CRAIG is superintendent for all this company's mines in Osage county.

Mine No. 12 belonging to the same company is located north of Scranton and connected by switch with the Atchison, Topeka & Santa Fe railway. The same description applies to this mine that applies to mine No. 10, with the exception of the depth. This shaft is 40 feet deep and 5 x 14 in size. The main entries run east and west from the bottom. The volume of air passing through the mine registered 6550 cubic feet per minute. One hundred and fifteen miners, 8 day men below, 3 day men on top, were working at this mine when visited by the Inspector. The ventilation of the mine was good, except in the places where the miners get the last of the air on its return. In these places the air was weak and charged with black damp. On the east side of shaft the roads were very wet and muddy, especially in the sixth and seventh south. Two men were kept busy all the time pushing water. One hundred miners, 4 boys, 12 day men, working 262 days, produced 37,506 $\frac{8}{10}$ tons of coal during the year. ANDREW ANDREEN is pit boss.

Mine No. 14 belonging to the same company is located half-mile south of Peterton depot, on a switch of the Atchison, Topeka & Santa Fe railway. This

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is a new mine which had just been sunk to the coal when Inspector visited there on September 6. It gave employment to 16 miners, 2 underground day men, 2 overground day men, 72 days, and produced 2055 $\frac{1}{6}$ tons of coal during the year. JOHN O'MELIA is pit boss.

Mine No. 23 of the same company, located 1 $\frac{1}{2}$ miles northeast of Atchison, Topeka & Santa Fe depot, at Osage City, on a switch of Atchison, Topeka & Santa Fe railway, was worked out and abandoned in April. The company reported 43 miners, 2 boys and 2 day men having worked 50 days, and produced 3902 tons of coal during the year. EMIL THYS is pit boss.

Mine No. 24 belonging to the same company, located northeast of Osage City, and connected by switch with the Atchison, Topeka & Santa Fe railway, is a horse-power, and has been in operation twelve years. At the time the Inspector first visited this mine, on September 14, it gave employment to 100 miners, 2 underground day men, 2 overground day men; stairway partitioned off main or hoisting shaft. Ventilated by furnace. This mine has an undercast, and the system of ventilation was originally on modern improved principles, the air going to the face of the main east and west, where it divided, going north and south, thus creating four separate currents. At the time I visited the mine, however, this undercast was rendered useless on account of the coal on the north side of the shaft being worked out. The air is now conducted to the face of the east and west main entries as before, but it all has to return by way of the first north to the furnace. As a consequence of this, the air, although clear, was very light. I insisted on a separate return being opened up on the west side. This the foreman promised to do.

Complaints being sent to me in regard to the ventilation of the mine, I made my second visit to it on October 13. On examination, I found the air-course nearly closed on the first north entry on the west side of the mine. As that was the only means of return (for the air) on the west side, it left a very poor supply of air for the miners on that side of the shaft. I had the pit boss change the course of the air. Instead of sending it from the shaft bottom into the main west entry as far the fifth north and around to the second west, all of which is old and abandoned work, I had him take the door off the first north entry, and close the main west entry between the first and second north entries. Then the curtains had to be taken off the second west entry and placed on the mouth of the rooms along this entry. When these changes had been made, the air went straight from the bottom up the first north entry, and into the fourth room on second west, thus giving the miners the benefit of the shorter course, and at the same time a pure current of air direct from the bottom of the shaft. I have heard no complaints from this mine since that time. Ninety-five miners and five day men, working 221 days, produced 23,980 $\frac{1}{6}$ tons of coal during the year. GEO. L. THOMSON is pit boss.

Mine No. 27 belonging to the same company, located one mile south of Osage City, on Ninth street, and connected by switch with the Atchison, Topeka & Santa Fe railway, is a shaft opening, forty-four feet deep, and, like mine No. 24, has also been in operation twelve years. This mine had also been provided with an undercast, the air being originally divided into four separate currents at the face of the north and south entries, returning on the west side through regular air-course direct to furnace, and on east side it was conducted through undercast to furnace. The coal on the east side of the shaft was all worked out at the



OSAGE COUNTY COAL-MINES.

Office No.	Name of operator or company.	Post-office address.	Name of mine.	Name of pit boss or underground foreman.	Location of mine.	Has mine railroad connection?	Name of railway.	Kind of opening.
1	Mount Carmel Coal Company	Topeka	10	Thomas Elwood	Scranton	Yes.	Santa Fe	Shaft.
2	"	"	12	Andrew Andreen	North of Scranton	"	"	"
3	"	"	23	Emil Thys	Northeast of Osage City	"	"	"
4	"	"	24	Geo. L. Thomson	"	"	"	"
5	"	"	25	James Main	Southeast of Osage City	"	"	"
6	"	"	26	Archie Craig	Northeast of Osage City	"	"	"
7	"	"	27	John O'Melia	Southeast of Peterton	"	"	"
8	"	"	28	Robert Hughes	South of Peterton	"	"	"
9	Western Fuel Company	Osage City	14	John O'Melia	Northeast of Osage City	"	"	"
10	"	"	3	Charles Swanson	East of Osage City	"	Mo. Pac.	"
11	"	"	4	Peter Forsberg	North of Osage City	"	"	"
12	"	"	5	Turner Grosvenor	"	"	"	"
13	Labor Exchange, Branch 223	"	6	Erie Fellman	Southeast of Osage City	No.	"	"
14	"	"	1	Colin Wilson	South of Burlingame	Yes.	Santa Fe	"
15	William Petersen	"	1	William Petersen	Southeast of Osage City	No.	"	"
16	Murry Bros.	"	1	John Murry	East of Osage City	"	"	"
17	S. J. Carlson	"	4	Fred Spain	South of Osage City	"	"	"
18	"	"	5	S. J. Carlson	West of Osage City	"	"	"
19	John A. Johnson	"	1	Peter Lind	"	"	"	"
20	Kansas Coal Company	"	1	Ed. Clift	"	Yes.	Mo. Pac.	"
21	A. W. Granstrom	"	5	C. E. Stonerist	Southwest of Osage City	"	"	"
22	"	"	6	C. Andersen	"	No.	"	"
23	Matthew Waddell	"	1	Matthew Waddell	Northwest of Osage City	"	"	"
24	Isaiah Jones	"	1	Isaiah Jones	Osage City	"	"	"
25	Ryan & Co.	Scranton	3	M. W. Ryan	Southeast of Scranton	Yes.	Santa Fe	"
26	Thomas Chappell	"	3	Geo. Chappell	South of Burlingame	"	"	"
27	"	"	4	John Gohlar	South of Scranton	"	"	"
28	Thos. Noble & Sons	"	1	Samuel Noble	Southeast of Scranton	No.	"	Shaft.
29	Jas. Taylor	"	1	Jas. Taylor	Southwest of Scranton	"	"	"
30	Jas. Cathcart	"	1	Jas. Cathcart	Scranton	"	"	"
31	Henry Isaacs	"	1	"	Southwest of Scranton	Yes.	Santa Fe	"
32	Thos. Whitcombe	Burlingame	1	Thos. Whitcombe	Northeast of Burlingame	"	"	"
33	Wm. Foster	"	1	Wm. Foster	"	"	"	"
34	John Bell	"	1	John Bell	East of Burlingame	"	"	"
35	John D. Jack	"	1	John D. Jack	Burlingame	"	"	"
36	Hotchkiss Coal and Mining Company	"	3	Neal Hotchkiss	"	No.	"	"
37	Robert Simpson	"	1	Robert Simpson	"	Yes.	Santa Fe	"
38	Robt. Paterson	"	4	Wm. Paterson	East of Burlingame	No.	"	"
39	Hugh McFarlane	"	1	Hugh McFarlane	"	Yes.	Santa Fe	"
40	Fanter Long-wall Mining Mach. Co.	"	5	J. G. Foster	"	"	"	"
41	Central Coal and Mining Company	"	1	Robt. Jack	South of Burlingame	No.	"	"

42	Sunflower Coal Company	Osage City	1	Larso Olson	East of Osage City	No.	"	Shaft.
43	Bellville Coal Company	Scranton	1	Newlands Ingham	West of Scranton	"	"	"
44	William Menzies	"	1	Wm. Menzies	South of Scranton	"	"	"
45	J. C. Harvey	Peterton	2	Wm. Harvey	Northeast of Peterton	Yes.	Santa Fe	"
46	Coughlin Coal Company	"	2	Michael Coughlin	"	"	"	Drift.
47	Warren Bros.	Rosemont	1	Warren	Northeast of Rosemont	No.	"	Shaft.
48	Martin Coal Company	Scranton	1	Wm. McNatt	East of Scranton	"	"	Slope.
49	R. M. Buntin	"	1	N. Ingham	Southwest of Scranton	"	"	Drift.
50	John McKeen	Rosemont	1	John McKeen	East of Rosemont	"	"	"
51	N. M. Thomas	"	1	N. M. Thomas	Southeast of Rosemont	"	"	"
52	Wm. Redicker	"	1	Wm. Redicker	North of Rosemont	"	"	"
53	Lewis Evans	Arvonis	1	Lewis Evans	North of Arvonis	"	"	"
54	John Lewis	"	1	Ferguson Lewis	South of Arvonis	"	"	Strip.
55	F. M. Moore	"	1	F. M. Moore	Arvonis	"	"	"
56	J. T. Evans	"	1	J. T. Evans	"	"	"	"
57	Wm. Jeremy	"	1	Wm. Jeremy	"	"	"	"
58	James King	"	1	James King	"	"	"	"
59	Jos. Bruce, Jr.	"	1	Jos. Bruce, Jr.	"	"	"	Drift.
60	Grant Fine	Quenemo	1	A. M. Service, lessee	Southeast of Quenemo	"	"	"
61	Ben Cade	"	1	M. C. Barrett	South of Quenemo	"	"	"
62	M. C. Barrett	"	1	"	Southwest of Quenemo	"	"	"
63	Mrs. Peter Hyleman	"	1	G. W. Wildin	South of Quenemo	"	"	"
64	G. W. Wildin	"	1	A. Herndon	East of Carbondale	"	"	"
65	Amos Herndon	Carbondale	1	Barney Scott	"	"	"	Strip.
66	Barney Scott	"	1	"	"	"	"	"
67	"	"	1	Hugh Hartman	"	"	"	"
68	Hugh Hartman	"	1	Chas. Browning	"	"	"	"
69	Charles Browning	"	1	James Newell	Southeast of Carbondale	"	"	"
70	James Newell	"	1	James Raney	"	"	"	"
71	James Raney	"	1	Chas. Shively	"	"	"	Drift.
72	Charles Shively	"	1	"	"	"	"	Strip.
73	"	"	1	Jos. Johnson	"	"	"	"
74	Jos. Johnson	Scranton	1	Jno. Coughlin	Scranton	"	"	"
75	John Coughlin	"	1	Harry Thomas	"	"	"	"
76	Harry Thomas	"	1	"	"	"	"	"

* Bell Brothers.

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INSPECTOR OF COAL-MINES.

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OSAGE COUNTY COAL-MINES — CONCLUDED.

Office No.	Kind of power used	Tons of coal produced (2000 pounds to the ton).			Number of days worked during year	Average number of miners	Average number of boys	Average number of day hands	Average number of employees	Av. paid per ton for mining.		Av. selling price at mine.		Estimated value of output.	Casualties.		Number of kegs of powder used during year	Average wages paid day men above ground.	Average wages paid day men under ground.	Remarks.
		Lump	Not and slack	Mine run						Lump	Mine run	Lump	Mine run		Killed	Injured				
1	Horse	32,160.5			255	95	5	9	109	\$1 17 1/2		\$1 70		\$54,672 85						
2	"	37,506.8			262	100	12	116	117	1 17 1/2		1 70		63,761 56						
3	"	3,902.9			50	43		47	47	1 37 1/2		1 90		7,415 51						Abandoned in April.
4	"	23,980.9			221	95		105	105	1 37 1/2		1 90		45,563 71						
5	"	14,132			223	60	4	67	67	1 37 1/2		1 90		26,850 80						
6	"	4,391			79	34		36	36	1 37 1/2		1 90		9,292 90						
7	"	2,687.3			45	34		37	37	1 37 1/2		1 90		5,105 87						New mine.
8	"	2,053.7			72	16		20	20	1 17 1/2		1 70		3,494 69						
9	"	5,950			200	30	3	36	36	1 37 1/2		2 20		13,060 00						
10	"	2,406			80	25		27	27	1 37 1/2		2 20		5,293 20						
11	"	914			80	15		17	17	1 50		2 20		2,010 80						New; opened in Aug.
12	"	6,629			200	50		52	52	1 37 1/2		2 20		14,737 80						New; opened in Oct.
13	"	6,303.5			183	36	1	43	43	1 37 1/2		2 05		12,926 27						
14	"	3,100			142	22		23	23	1 37 1/2		1 85		5,735 00						
15	"	384			120	3	1	4	4	1 37 1/2		1 90		729 60						
16	"	1,575			240	6		8	8	1 37 1/2		2 00		3,150 00						
17	"	6,303			305	20	5	6	31	1 37 1/2		2 00		12,610 00						
18	"	1,800			100	12		16	16	1 37 1/2		2 25		2,925 00						New mine.
19	"	2,434			300	10		27	27	1 37 1/2		2 20		5,354 80						
20	"	6,890.5			200	23		39	39	1 37 1/2		1 99 1/2		13,746 54						
21	"	8,434			151	36	3	39	39	1 37 1/2		1 97 1/2		16,857 15						
22	"	1,737			125	10	1	11	11	1 37 1/2		1 97 1/2		3,430 57						
23	"	980			250	5	1	6	6	1 37 1/2		2 30		2,234 00						
24	"	5,507			120	6	1	8	8	1 37 1/2		2 00		1,200 00						
25	"	9,262			189	25		28	28	1 17 1/2		1 85		10,187 95						
26	"	4,198			240	27	4	31	31	1 22 1/2		1 82		7,596 30						
27	"	1,298			144	18	3	21	21	1 12 1/2		1 85		2,371 16						
28	"	1,692			290	9	3	12	12	1 17 1/2		1 87		3,807 00						
29	"	1,100			225	9	1	11	11	1 22 1/2		2 25		200 00						
30	"	5,000			36	1		1	1	1 17 1/2		2 00		9,500 00						
31	"	2,150			245	20	5	27	27	1 17 1/2		2 25		4,837 50						
32	"	2,150			210	15		17	17	1 22 1/2		2 25		6,860 90						
33	"	3,611			250	15	3	18	18	1 22 1/2		1 90		6,988 00						
34	"	3,992			230	15	3	18	18	1 22 1/2		1 75		14,800 00						
35	"	3,400			290	22	4	26	26	1 22 1/2		2 00		7,000 00						
36	"	4,000			250	14	2	16	16	1 22 1/2		1 85		6,105 00						
37	"	3,300			220	14	2	16	16	1 22 1/2		1 85		234 00						
38	"	120			95	2		2	2	1 22 1/2		1 90		6,650 00						
39	"	3,500			210	18	2	20	20	1 22 1/2		1 90								

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INSPECTOR OF COAL-MINES.

40	Horse	2,618			150	25	3	29	1 22 1/2		2 35		6,222 80		1	2 25	1 75	3		
41	"	2,157			175	8	2	12	1 22 1/2		2 00		4,314 00			2 00	1 00			
42	"	2,796			300	9	1	10	1 37 1/2		2 00		5,592 00			2 25	1 50			Abandoned in April.
43	"	3,318.5			93	22	5	27	1 00		1 60		3,069 60							
44	"	500			160	3		3	1 35		2 25		1,125 00							
45	"	2,900			140	20	3	25	1 42 1/2		2 00		5,800 00			2 00	1 50			
46	"	5,636			225	35	4	41	1 30		2 00		11,272 00			2 25	2 00			
47	Man	480			305	4		4	1 75		2 25		1,080 00							
48	Horse	480			95	3		3	1 00		1 60		467 20							
49	Steam	153			70	2	2	4			2 00		316 00			2 50	1 50			
50	Man	146			97	2		2	1 62 1/2		2 00		292 00							
51	"	156			104	3		3	1 62 1/2		2 00		312 00							
52	"	315			140	3	1	5	1 62 1/2		2 00		630 00							
53	"	120			60	4		4	1 62 1/2		2 00		240 00							
54	"	120			60	4		4	1 62 1/2		2 00		240 00							
55	Horse	120			40		4	4	1 75		1 75		350 00				1 25			
56	"	200			55		4	4	1 75		1 75		280 00				1 25			
57	"	160			53		3	3	1 75		1 75		262 50				1 30			
58	"	150			70		2	2	1 75		1 75		245 00				1 25			
59	"	140			90						2 00		80 00							
60	Man	40			33	2		2	1 50		2 00		70 00							
61	"	35			40	1		1			2 00		170 00							
62	"	85			70	2		2	1 75		2 00		210 00							
63	"	105			120	1		1	1 75		2 00		850 00				1 50			
64	"	425			190	4	1	5			2 00		400 00							
65	"	200			95	3		3	1 17 1/2		2 00		1,080 00				1 50			
66	Horse	540			130	4	1	5			2 00		970 00				1 25			
67	"	455			97		5	5			2 00		796 00				1 30			
68	"	398			98		6	6			2 00		1,926 40				1 30			
69	"	983.2			161		5	5			2 00		1,104 00				1 30			
70	"	552			110		6	6			2 00		2,280 00				1 30			
71	"	1,140			190		5	5			2 00		1,224 00				1 30			
72	"	612			153		4	4			2 00		1,292 00				1 50			
73	"	646			161	4	1	5			2 00		812 00				1 30			
74	"	406			100		4	4			2 00		640 00				1 30			
75	"	320			80		5	5			2 00		616 00				1 30			
76	"	308			65						2 00									
		290,803.8			11,356	1,182	45	194	1,421					\$493,011 37		3				

a, 10 boxes dynamite; b, 50 pounds dynamite; c, 100 pounds dynamite.

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time of Inspector's visit to this mine. Therefore, the undercast could not be used as a means of ventilation. This caused the air to be very weak, and besides, it was charged with carbonic-acid gas (black damp) from the old workings of mine No. 22, which are contiguous to this mine. Sixty miners, 4 boys and 3 day men worked 223 days, and produced 14,132 tons of coal. JAMES MAIN is pit boss.

Mine No. 28 belonging to the same company, located two miles northeast of Osage City, is a new shaft, having been sunk to the coal in the month of August. Depth of shaft, 21 feet; size, $5\frac{1}{2} \times 14$ feet. When I visited there, on September 17, the mine gave employment to twelve men. There was no railroad switch laid to this mine at that time. I learn a switch has since been put in. Stairway partitioned off main or hoisting shaft served as an escapement. Thirty miners, 2 day men, worked 69 days, and produced 4891 tons of coal. A. CRAIG is pit boss.

Mine No. 29 of the same company, located one-half mile southeast of the Atchison, Topeka & Santa Fe depot at Peterton, and connected by switch with the Atchison, Topeka & Santa Fe railway, is a new mine that was sunk in the latter part of September. Depth of shaft, 30 feet; size of same, 5×14 feet. As this mine was not in operation at the time of my visit to that locality, I am unable to give a detailed report of it. The company reported 34 miners, 3 day men, working 45 days, and producing 2687 tons of coal. JOHN O'MELIA, is pit boss.

The Ryan Company's mine No. 3, owned by Pat. Ryan, is a horse-power shaft, located one-half mile northeast of Scranton, on a switch of the Atchison, Topeka & Santa Fe railway. There are three openings, forty feet deep. Ventilated by furnace. The total volume of air going into the mine registered 1250 cubic feet per minute. This volume could be increased, but, as there were only twelve men working in the mine at the time I visited it, the amount of air circulating was sufficient to meet their requirements. Ryan is the most popular of the small operators in this vicinity on account of his promptitude in paying his men on time. This, I am sorry to say, cannot be said of all the small operators. Mr. Ryan also gave his men an advance of ten cents per ton about the time I was there. The condition of the mine in general was good. It worked 189 days and gave employment to 25 miners, 3 day men, and produced 5507 tons of coal during the year. M. W. RYAN is pit boss.

The Thomas Noble mine, located $1\frac{1}{2}$ miles southeast of Scranton, is a horse-power shaft opening, 34 feet deep; manway in main shaft. Ventilation is by means of a furnace, which was producing fair results. Timbers were required along the bottom to make it secure. The management promised to put these in at once. All coal produced is sold to supply local trade. Nine miners, 3 day men, worked 290 days, and produced 1260 tons of coal during the year. SAMUEL NOBLE is pit boss.

The James Taylor mine, located two miles southeast of Scranton, on a switch of the Atchison, Topeka & Santa Fe railway, is a horse-power shaft which has been in operation seven years. The ventilation, which is by means of a furnace, was fair. Main entries run north and south. South side has been abandoned on account of too much water. This mine gave employment to 9 miners, 1 boy, and 1 day man, and produced 1692 tons of coal, working 225 days during the year. JOHN GOEBEL is pit boss.



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The James Cathcart mine is located at Scranton. When I visited this mine there was no one working in it except Mr. Cathcart himself, and he said if he could get the rails out of it he would abandon it. The large amount of water to be contended with made it quite an up-hill job to run the mine. He had a six-horse-power steam-pump at work trying to overcome the water. He reported having worked 56 days and produced 100 tons of coal.

Robert Elliott mine, located four miles southwest of Scranton, is a new mine, and at the time of my visit had only been in operation about two months. No air-shaft had been sunk; ventilation was natural.

The Thomas Whitcombe mine is located four miles southwest of Scranton, and connected by switch of the A. T. & S. F. Rly. Depth of shaft, 90 feet; size, 6x10. This is a horse-power shaft, which has been in operation eight years. The vein averages eighteen inches in thickness. The ventilation of the mine was good. Roadways dry, wide, and in good condition. Fifteen miners, 2 day men, worked 210 days, and produced 2150 tons of coal during the year. THOMAS WHITCOMBE is pit boss.

The William Foster mine, located four and one-half miles southwest of Scranton, on a switch of the A. T. & S. F. Rly., is a horse-power shaft opening and has been in operation twelve years. Main entries run north and south. Mine is ventilated by furnace, the air being fairly well conducted. Roadways dry and in good condition. The north side of the mine is worked out to the boundary line. Fifteen miners, 3 day men, worked 250 days, and produced 2611 tons of coal during the year. FRANK FOSTER is pit boss.

The John Bell mine, located four miles southwest of Scranton, on a switch of the A. T. & S. R. R., is a comparatively new shaft, as it has only been in operation about a year. Depth of main shaft, 90 feet; size of same, 5x12 feet. The ventilation of the mine was good. Roadways dry and clean. Stairway alongside main shaft. This mine employed 15 miners, 3 boys, and 3 day men, and produced 3992 tons of coal, working 230 days. JOHN BELL is superintendent and pit boss.

The Bellville Coal Company's shaft, leased by Bunten & Elliott, was a steam-power, located one mile west of Scranton. This mine was worked out and abandoned when visited by the Inspector. The company reported 22 miners, 6 day men, working 93 days, produced 1918½ tons of coal.

The Thomas Martin mine, leased by R. N. Bunten, is a horse-power shaft opening, 90 feet deep, one mile west of Scranton. It has no railroad connection. There are two openings. The ventilation is by means of a furnace. Roadways dry and clean. This mine was leased to three miners, who operated it for a few months and then gave it up to Mr. Bunten, the present lessee. He reported 3 miners and 1 day man, working 70 days, producing 292 tons of coal.

The Henry Isaac slope is located at Isaacville, on the A. T. & S. F. railway, two miles southwest of Scranton. This was originally a shaft opening, until six years ago, when the management drove a slope to the face of the workings. They then abandoned all work south of the shaft, and worked all northeast and west by way of the slope that they still use. This mine is



equipped with a ten-horse-power engine and a three-fourths-inch steel haulage rope, which is used to haul coal out of the slope. Two good windmill pumps are used to keep the mine dry. This mine has been in operation 13 years. It gave employment to 20 miners, 5 boys, and 2 day men, and produced 5000 tons of coal, working 259 days during the year. HENRY ISAAC is pit boss.

The John D. Jack mine No. 3, known as the Sand-bank mine, located one-fourth mile south of Burlingame, and connected by switch with the A. T. & S. F. railway, is a horse-power shaft, 95 feet deep and 5 x 10 in size. This mine has been in operation seventeen years. At the time I visited the mine the volume of air in circulation registered 1250 cubic feet per minute. This was not sufficient for the number of men working in the mine. I insisted on a larger fire being kept in furnace, to increase the volume of air traveling. I also requested them to put up a door on cross-entry going south; this would force the air around the faces, instead of allowing it to circulate on main entries, as it was doing. The foreman promised to attend to both of these matters at once. The roadways throughout the mine were dry and clean. Twenty-two miners and 4 day men worked 290 days and produced 7400 tons of coal.

The Hotchkiss Coal and Mining Company's mine, one-fourth mile south of Burlingame, is a horse-power shaft, 85 feet deep and 5 x 8 in size; has no railroad connections. When Inspector visited this mine it employed fourteen miners and three day men. The ventilation, which was by means of a furnace, was fair. The roadways were dry and clean, and in good condition. Sixteen miners and 4 day men worked 250 days and produced 4000 tons of coal. NEAL HOTCHKISS is pit boss.

The H. C. Finch shaft, leased by W. Patterson, is located at Burlingame. Has no railroad connection. The furnace in Hugh McFarlane's mine ventilated this mine, as it was driven through to the McFarlane mine. At the time of the Inspector's visit the mine employed only two miners. I have heard that Mr. Patterson has given up the coal business since then. Two men, working 95 days, produced 120 tons, valued at \$234.

The Hugh McFarlane mine is located at Burlingame; depth of shaft, 84 feet; size, 4½ x 10 feet. Stairway partitioned off main shaft. Ventilation by furnace. General condition of the mine was good. All roadways dry and clean. It gave employment to 18 miners and 2 day men; worked 210 days, and produced 3500 tons of coal. HUGH McFARLANE is pit boss.

The Burkville shaft, leased by Austin & Ellis, succeeded by C. E. Austin, located ¼ miles east of Burlingame, is the oldest shaft around Burlingame. It was sunk 20 years ago. Depth of shaft, 96 feet; size, 4 x 10. Horse power. Has no railroad connections. Ventilated by furnace. The condition of the mine in general was good. Five miners, working 200 days, produced 1100 tons of coal. SHERMAN KELLY is pit boss.

The Panter Long-wall Mining-machine Company's mine No. 5, located one mile north of Burlingame, and connected by switch with the A. T. & S. F. railway, is a horse-power shaft, 130 feet deep, and 5 x 10 in size. Nine miners were employed at the time Inspector visited the mine. The cages are equipped with safety-catches and bridle-chains. Escapement ladder in air-shaft. The furnace which was used for ventilating purposes was inadequate to meet the requirements



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of the mine. I requested the foreman to improve it; he procured the necessary material (bricks and grate) and rebuilt the furnace before I left the locality. This mine has been in operation 12 years. Vein averages 16 inches in thickness. Fifteen miners, 3 day men, worked 150 days, and produced 2648 tons of coal. J. G. FOSTER is pit boss.

The Central Coal and Mining Company's mine, known as the Central, located one-half mile east of Burlingame, is a horse-power shaft, 70 feet deep, and 5 x 10 size. The mine was well ventilated and the roadways were dry and clean when visited. Eight miners, 1 boy and 2 day men, working 175 days, produced 2157 tons of coal. A. E. COLE is pit boss.

The Labor Exchange, Branch 223, mine No. 1, located one mile west of the Atchison, Topeka & Santa Fe depot at Osage City, is a horse-power shaft opening, 67 feet deep, and 5 x 18 in size. Has no railroad connections. Coal is hauled with wagons to railroad-cars, and some is sold to supply local trade. On the occasion of my visit to this mine I found it in good condition; the air current was good and the roadways were dry and clean. The mine has been in operation three years. The origin of this company is described in detail by my predecessor in his report for 1897. The company reported that 30 miners and 5 day men, working 185 days, produced 6305½ tons of coal during the year. ERIC FELLMAN is pit boss and ALFRED MALAPERT manager.

The Labor Exchange, Branch 223, mine No. 2, located two miles south of Burlingame, on a switch of the Atchison, Topeka & Santa Fe railway, is a horse-power shaft opening, 80 feet deep, and 5 x 14 feet in size. I heard such good reports of this mine while on a tour of inspection to the mines in Osage county that I concluded not to visit it, but to devote my time to other mines that were in poor condition and needed my attention. The company reported 20 miners, 3 day men, who worked 142 days, and produced 3100 tons of coal during the year. COLIN WILSON is pit boss.

Western Fuel Company's mine No. 1 is located two miles northeast of Osage City, and connected by switch with the Atchison, Topeka & Santa Fe railway. Depth of shaft, 40 feet; size, 5 x 13 feet. This mine has been in operation twelve years. Main entries are driven north and south from bottom. The north side of mine was abandoned on account of water. On the south side, the fifth and sixth west and the fourth, fifth and sixth east were working. A good current of air was circulating throughout the mine. Notwithstanding the fact that three good pumps were in use the roadways were very wet and muddy. The vein averages 15 inches in thickness. Twenty-eight miners, 3 day men, worked 200 days, and produced 5950 tons of coal during the year. ROBERT HUGHES is pit boss.

Western Coal Company's mine No. 4 is located one and one-half miles east of Osage City, and connected by switch with the Missouri Pacific railway. This is a new mine which was sunk to the coal in August. It is the same depth and size as mine No. 2 of this company. Natural ventilation. Average thickness of vein, fourteen inches. Twenty-five miners, 2 day men, worked 80 days, and produced 2406 tons of coal during the year. CHARLES SWANSON is pit boss.

Mine No. 5 of the same company is located three-fourths of a mile east of the Missouri Pacific depot in Osage City. This is a new mine which commenced



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operation in October. Depth of shaft, 60 feet; size, 5 x 13 feet. It gave employment to 15 miners and 2 day men, who worked 70 days, and produced 914 tons of coal. PETER FORSBERG is pit boss.

Mine No. 6 of the same company, located three-fourths of a mile west of Osage City, and connected by switch with Missouri Pacific railway, is a horse-power shaft, 60 feet deep, and 5 x 13 in size. This mine has been in operation ten years. At the time of Inspector's visit there the mine gave employment to fifteen miners. The air current was rather weak, on account of the distance it had to travel. Roadways dry and clean. Fifty miners, 2 day men, worked 200 days, and produced 6699 tons of coal.

The William Petersen drift mine is located two miles south of Osage City. Has no railroad connection. Ventilated by furnace; at time of visit the air current was rather weak. The men pushed the coal to the mouth of the drift. All coal sold to supply local trade. Three miners worked 120 days and produced 387 tons of coal. WILLIAM PETERSEN is pit boss.

The Murry Bros. mine is a horse-power, located one and three-fourths miles east of Market street, Osage City. It has no railroad connection. One cage in use. All coal sold to supply local trade. Six miners, 2 day men, worked 240 days, and produced 1575 tons of coal. JOHN MURRY is pit boss.

The S. J. Carlson mine No. 4, located south of Osage City, is a horse-power shaft opening, twenty feet deep; has been in operation six years. Main entries run east and west. East side has been worked out and abandoned. The coal face was 555 feet from the bottom on west side when visited by Inspector. Furnace ventilation; air current good; roadways dry and clean. Twenty miners, 5 boys, 4 day men, working 210 days, produced 6305 tons of coal. FRED SPAIN is pit boss.

Mine No. 5 of the same company is a horse-power shaft, located at the west end of Osage City. It had just been sunk to the coal in the month of July. When Inspector visited there, September 15, the mine gave employment to twelve men. There was no railroad connection, although they expected to have a switch laid in from the Missouri Pacific railroad. Depth of shaft, 59 feet; size, 6 x 14 feet. Natural ventilation. Twelve miners, 4 day men, working 95 days, produced 1300 tons of coal. C. ANDERSON is pit boss.

The John A. Johnson mine, located northwest of Osage City, is a horse-power shaft, seventy-five feet deep; has been in operation seven years. Ventilation by furnace. The air current was weak in this mine, which was due to its traveling around the face of the workings in a single current. I advised Mr. Johnson to put in an overcast or undercast, so as to divide the air into two separate currents. This he promised to do. Roadways throughout the mine were dry and clean. It gave employment to 10 miners, who worked 200 days, and produced 2434 tons of coal during the year. ALEXANDER HAKISON is pit boss.

The Matthew Waddell mine is a horse-power, located northwest of Osage City. Depth of shaft, 76 feet; size, $4\frac{1}{2}$ x $8\frac{1}{2}$ feet. This mine has been in operation ten years. Only one side of the mine working; the other, the south side, is worked out to the boundary, and abandoned. The mine employed ten miners at the

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time the Inspector visited it. The vein here averages only about 12 inches in thickness. Ventilation fair. Five miners, 1 day man, worked 200 days, producing 980 tons of coal.

Kansas Coal Company's mine is located $1\frac{1}{4}$ miles west of the Missouri Pacific depot in Osage City, and connected by switch with the Missouri Pacific railway. Depth of shaft, 82 feet; size, 5 x 14. Main entries run east and west from bottom. This is one of the best arranged mines in the county in regard to ventilation. Two undercasts are used, making two divisions of air, or four separate currents. The coal is worked out to a radius of 300 feet from the bottom of the shaft. Average thickness of vein, 15 inches. This mine employed 25 miners, 2 day men, 260 days, and produced 6890 $\frac{1}{2}$ tons of coal during the year. ED. CLIFT was pit boss, succeeded later by CHARLES S. TAYLOR. J. C. THOBURN, of Lawrence, Kan., is manager and sales agent for this company.

A. W. Granström's mine No. 5 is located one mile west of Osage City and connected by switch with the Mo. Pac. R. R. Depth of shaft, 76 feet; size, 5 x 12. Has been in operation 11 years. There was a strong volume of air circulating through the mine, but it was not properly conducted around the face of the workings. Some of the places had caved in between the rooms. At these places the air was allowed to travel along the entries, instead of being forced back to face of workings by hanging curtains. On their attention being called to this, the management promised to attend to the matter in the future. I have heard no complaints from this mine since that time. Thirty-six miners, 3 day men, working 151 days, produced 8434 tons during the year. CHARLES E. STONCRIST is pit boss.

Mine No. 6 of the same company, located one mile south of Osage City, was not in operation when the Inspector visited that locality, in September, and had not worked any this year. They intended starting it up in the winter. Ten miners and 1 day man, working 125 days, produced 1737 tons of coal. CHAS. GRANSTROM is pit boss.

The Thomas Chappell mine No. 4 is a new shaft, which has just been sunk to the coal when I visited there. The air-shaft had not been finished. The company reported 18 miners, 3 day men, working 144 days, produced 4198 tons of coal during the year. JOHN GOBLAR is pit boss.

The Thomas Chappell Coal Company's mine No. 3 is located two miles east of Burlingame, and connected by switch with the A. T. & S. F. railway. This is a horse-power shaft, 80 feet deep and 6 x 14 in size. Has been in operation four years. Ventilated by furnace. Stairway in main shaft. This is the strongest, roomiest and best stairway I have seen in this county so far. The condition of the mine generally was good. It gave employment to 27 miners, 4 day men, 240 days, and produced 9262 tons of coal during the year. GEORGE CHAPPELL is pit boss.

The Coughlin Coal Company's mine No. 2, owned by Coughlin Bros., is located three-fourths of a mile east of Peterton, on a switch of the Atchison, Topeka & Santa Fe railway. This mine has been in operation ten years. It gave employment to 35 miners, 4 boys, and 2 day men, who worked 220 days, and produced 5636 tons of coal during the year. The mine is equipped with a good



windmill pump. There is considerable water to contend with, but the foreman manages to keep the roads in fair condition. The ventilation of the mine is good. The vein averages 14 inches in thickness. Depth of shaft, 25 feet; size of same, 6x10. MICHAEL COUGHLIN is pit boss and JOHN COUGHLIN superintendent.

The J. C. Harvey mine is a horse-power shaft opening, located at Peterton, and connected by switch with the A. T. & S. F. railway. Depth of shaft, 32 feet; size of same, 6x14. Ventilated by furnace. The roadways were wet and muddy. The mine was in fair condition. It gave employment to 20 miners, 3 boys, and 2 day men, working 140 days, and produced 2900 tons of coal during the year. WILLIAM HARVEY is pit boss.

The Robert Simpson mine No. 1 is a horse-power, located $1\frac{1}{4}$ miles south of Burlingame, and connected by switch with the Atchison, Topeka & Santa Fe railway. Depth of shaft, 90 feet; size, 8x5. This mine has been in operation 18 years. Ventilated by furnace. Main entries run east and west from bottom. No work being done on the west side. Three entries were turned off main east, one going north and two south. The general condition of the mine was good. Vein averages 17 inches in thickness; 14 miners, 2 day men, working 220 days, produced 3300 tons of coal.

Besides these already reported, there are a number of drifts at Arvonja and Quenemo, and some drifts and strip pits at Carbondale. The names of the operators of these drifts and strip pits, together with their production, can be found in the tables of Osage county coal-mines, on pages 52, 53, 54, and 55.



LEAVENWORTH COUNTY.

LEAVENWORTH still ranks as the third coal-producing county in the state. There are four mines in the county. During the year 1899, three of these mines, viz., the Leavenworth Coal Company's mine and the Home-Riverside Company's mines Nos. 1 and 2, gave employment to 854 men, 24 boys, and produced 262,196 tons of coal, working 235 days; 289 convicts employed at the state mine worked 310 days, and produced 46,668 tons, making the total production 308,864 tons, valued at \$447,551.64. This is an increase over the year 1898 of 3549 tons. The increase would no doubt have been greater had it not been for a strike which occurred at the outside mines on the 28th of August, which laid them idle up to the 5th of October, when a compromise was made and a settlement reached which allowed the mines to resume operation. See tables on pages 70, 71, 72, and 73.

RECORD OF INSPECTION.

The Home-Riverside Coal and Mining Company's mine is located within the city limits, in the southeast quarter of the city of Leavenworth, and connected with all railroads entering Leavenworth. It is equipped with first-motion engines of modern design. A fan 22 feet in diameter with 8-foot blades, running at 49 revolutions per minute, is used as means of ventilation. The cages are protected with covers and safety-catches. The volume of air at intake registered 17,000 cubic feet per minute. The underground work was in splendid condition at the time of Inspector's visit. A good current of air was circulating around the faces of the workmen and the sanitary condition of the mine throughout was first-class. The mine generates a little gas, but not enough to make it dangerous while there is a good volume of air in circulation, except when it accumulates in a pocket at the face of the brushing. Care has to be taken that no light is near at hand when these pockets are being brushed out with a shovel or coat. A sufficient corps of firemen are hired, whose duty it is to examine the working-places every morning and report to the miners if they find any gas. Depth of shaft, 712 feet; size of same, 10 x 14 feet; average thickness of vein, 22 inches. The following repairs have been added to the mine during the past year: Twelve new wagon chutes for city trade, with new conveyers and elevators for the same; two new bridges to accommodate city trade; an addition of 40 x 30 feet to top house; a new carpenter and blacksmith shop; reconstructed old and built new 2000 feet railroad-track; one set of 100-ton-capacity steel railroad scales; reconstructed car-loading chute. JOHN PATERSON is pit boss.

Mine No. 2 belonging to the same company is located about one mile south of mine No. 1. The same description as to depth and size applies to both mines. An underground tunnel connects the two mines. This tunnel is kept in good



shape, so that a trip of cars can be hauled through it from one mine to the other in case of emergency. A fan twelve feet in diameter with four-foot blades is placed over the air-shaft. It was running at the rate of 108 revolutions per minute, and pulling 14,650 cubic feet of air per minute through the mine. The air is divided at the face of the main east and west entrance; thus four separate currents are kept in circulation, as in mine No. 1. The general condition of this mine as to ventilation, etc., while not as good as No. 1, was in fair shape throughout. During the year the hoisting engine at the mine has been reset, a new foundation has been built under the main building, and a set of 100-ton-capacity steel railroad scales have been put in. Both mines, combined, employed 425 miners and 39 underground day men 235 days during the year, and produced 146,000 tons of coal. Forty-four overground day men were employed the same length of time. According to the returns sent to this office, the underground day men are paid two dollars per day, and the overground day men \$1.75 per day. The estimate of value of both mines combined is \$1,250,000. THOMAS GRAHAM is pit boss. GEO. KIERSTEAD is general superintendent of both mines.

Since the above was written, I learn that this company has bought the Leavenworth Coal Company mine. Mr. John Paterson is now underground superintendent and has charge of all underground work at the three mines. The company contemplate making some very material changes at their new purchase, which they name mine No. 3.

Leavenworth Coal Company's mine No. 1 is located northeast of the city of Leavenworth, and connected with the Missouri Pacific and Union Pacific railways. Depth of shaft, 720 feet; size of same, 11 x 12 feet; size of air-shaft, 8 x 10. This mine has been in operation twenty-eight years. The mine is operated on the long-wall system. The air-shaft is equipped with engines which can be used at a moment's notice, should any accident occur in the main shaft. The mine is ventilated by a large fan, 25 feet in diameter, 8-foot blades; the fan was running at the rate of 50 revolutions per minute. The volume passing into the mine registered 24,400 cubic feet per minute. This volume was sufficient, if properly conducted, to meet the requirements of the 200 men that were in the mine on the occasion of my first visit. The ventilation throughout the mine was good, except in rooms where "cave-ins" had occurred. Formerly an electric motor was used, with endless rope, to haul all the coal; this plant has been taken out and replaced with mules. Mining-machines were used, but they also have been discarded. The cages are double-deck; each deck holds two cars; thus four pit cars are hoisted every trip. The cages are also equipped with safety-catches; these catches seem to work all right in summer, but I learn that in hard frosty weather they are liable to freeze and fail to act. In the way of repairs, the air-shaft was retimbered, city chutes rebuilt, and the old boilers were taken out and replaced with new ones. Two hundred and eighty-eight miners, 24 boys and 58 day men worked 235 days, and produced 116,196 tons of coal during the year. N. K. PARKER is pit boss.

THE PENITENTIARY MINE.

The state penitentiary mine is located at Lansing, three miles south of the city of Leavenworth. It is connected by switches with the U. P., the A. T. & S. F. and the K. C. W. & N. railroads. There are two openings, 723 feet in depth. A 500-horse-power double engine is used at main shaft for hoisting and a 250-horse-power double engine is placed at the air-shaft for the same purpose.

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TWELFTH ANNUAL REPORT.

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Shortly after assuming the duties of Mine Inspector I received the following letter, which explains itself:

GOVERNOR'S OFFICE, TOPEKA, KAN., July 14, 1899.

Edward Keegan, Esq., State Mine Inspector:

DEAR SIR—There is some question about the safety of the shaft at the penitentiary mine, and the warden hardly feels like assuming the risk of running it, and the executive council hardly feel like incurring the expense of recasing it without we first have your judgment as to its safety. I wish, upon receipt of this, you would go to Lansing and make an inspection of the penitentiary mine. Kindly wire me upon receipt of this letter when you will go to Lansing, so that we can notify the warden and have him there when you arrive. This inspection ought to be made without delay and I trust you can go at once.

Yours very truly, W. E. STANLEY.

I responded to this call, and, after making a careful examination of everything in connection with the mine, and especially the main shaft, I tendered the governor the following report, and also left a duplicate copy with the warden:

LANSING, KAN., July 18, 1899.

W. E. Stanley, Governor, Topeka, Kan.:

SIR—In compliance with your request, I have this day made a careful examination of the penitentiary coal-mine. I find the main shaft in such a dangerous condition that men cannot work there with safety. It can be made safe only by retimbering from top to bottem. The two main entries also need new timber supports at intervals of two feet each for a distance of fifty feet on each side of the shaft.

While no immediate danger exists from this source, I suggest that these repairs be made at the time shaft is being retimbered. In regard to the smaller shaft, commonly called the air-shaft, I consider it in fair condition, except in two or three places, which I believe can be repaired in a short time so that it will be safe for hoisting either coal or men.

I find the hoisting apparatus, ropes and all machinery in safe and reliable condition. I find the sanitary condition of the mine to be good, except in one room on west side, where the ventilation is poor. This particular defect was due to the failure to drive a cross-section over, which should have been done at least a month ago. Superintendent Fulton is now, and for some time has been, pushing this work as rapidly as possible. I find that it will be necessary to have a survey in order to extend the mine map now in my possession.

Respectfully submitted, EDWARD KEEGAN, *Inspector.*

After submitting the foregoing report, the warden and superintendent asked if it would be safe to run the mine for a few weeks, until the material could be secured. I answered that I could not guarantee the safety of the mine, as it then stood, for even one day; therefore, would not be responsible if they should continue working. It is only fair to state that the main shaft was immediately closed down, and remained so until the material arrived. They then retimbered it, in accordance with my recommendations.

The following extract from the annual report of the superintendent of the state mine shows the extent of the improvements and repairs that have been made since that time:

Retimbered main shaft from top to bottom with 6x6 oak and cypress. Built two new cages for main shaft, also put on two new crucible steel one-and-one-half-inch cables on main shaft, and half-inch-wire bell rope. I sank main shaft three feet and graded bottom back on north side 200 feet, and on south side fifty feet. Removed all old timbers at bottom, 8x8, and replaced with new oak ones, 10x10, for a distance of fifty-five feet on north side and fifty feet on south. Built a good, roomy, well-regulated office for bottom officer at foot of main shaft. Put on two new sheave wheels at main shaft and twenty-five trap-doors on air-courses and entries. I cleaned up all the old entries, thereby reducing speed of fan from eighty to fifty revolutions per minute. Built two new water cars for hauling surplus water from mine to sink. I have retimbered the mouth of air-shaft and braced both towers. Refloored fan room with paving brick. Have floored tres-



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INSPECTOR OF COAL-MINES.

tles from main shaft to slate dump. Have furnished one large master-wheel for small engine at air-shaft, which is twelve feet in diameter; also, one large pinion. Built a very handy and commodious office for top officers. Built a car track from air-shaft to boiler-rooms, also to engine-room at female department, which greatly facilitates the hauling of coal, and reduces the daily expense of two men and two teams and wagons. I have also built fifty new coal-cars. By putting in twenty-five new trap-doors in the air-courses, we have added all the air at working-places that is needed, and have placed the mine in a good, healthy condition. I find there are many other valuable improvements and repairs that should be made. There should be two new hoisting towers erected, and nearly all buildings on top should be repaired, as they have been in use for a number of years.

Very respectfully, ARCHIE FULTON, *Mine Superintendent.*

From the foregoing, it will be seen that the instructions of the Inspector were complied with to the letter, which not only reflects credit on the management for placing the state mine in a good sanitary, well-ventilated and safe condition, but sets an example worthy to be followed by the mine owners of the state.

During the year 1899, this mine produced 46,668 tons of coal, valued at \$81,669, working 289 convicts 310 days.

OTHER KANSAS COAL-MINES.

ATCHISON COUNTY.

W. T. Donald, mayor of Atchison, owns the only mine that was in operation in this county during the year 1899. It is located two and one-half miles south of the city of Atchison, on a branch of the Missouri Pacific railroad. The mine is a horse-power drift opening. The vein averages about eleven inches in thickness, and is worked on the long-wall system. The coal is hard to mine, as there is no fire-clay beneath it; this makes what might be termed a forced mining. The miners are paid \$1.25 per ton for mining in summer, and \$1.50 in winter; ten miners and three day men, working 255 days, produced 2500 tons of coal, valued at \$8750.

BOURBON COUNTY.

All the coal mined in this county is taken from drift mines and strip pits in and around Fort Scott. I found it almost impossible to obtain an accurate account of the amount produced during the past year. There are several small drift mines located from two to three miles southeast of Fort Scott. These mines are only worked through the fall and winter, when the local demand for the coal is good. Messrs. Stadden, King, Lyons, Knowles and Bunn are the principal operators. None of these parties keep a record of the coal produced at their mines. Considerable stripping is done in the neighborhood, but, I might say, it is utterly impossible to get an exact statement of the output of these strip pits. After spending three days going over the grounds and making a thorough investigation, I estimated the total production at 31,000 tons, valued at \$62,000. There were about 125 men employed.

CHAUTAUQUA COUNTY.

Elliott & Jones, successors to W. A. Syaffer, own the only mine the Inspector could find in operation in this county in 1899. The mine is a drift opening, located in the vicinity of Leeds. The vein, which is a good quality, averages sixteen inches in thickness. An air-shaft has been sunk, and the ventilation is natural. Fifteen miners, working eighty days, produced 600 tons, valued at \$1500. The reason for this low average to each miner was that they were nearly all working in narrow entries and few rooms had been turned off.



CLOUD COUNTY.

The mines of this county are located in the vicinity of Minersville, which is about eight miles northeast of Concordia. The vein is the same as that in Republic county, and is worked on the long-wall system. The mines are nearly all shaft openings, the average depth of same being seventy-five feet. During the year, the mines of this county gave employment to forty-four miners, seven day men, who worked 166 days, and produced 6146 tons of coal, valued at \$14,596.75. There is an interstratified band of soft carboniferous dirt which runs in the center of this vein and ranges from two to four inches in thickness.

RECORD OF INSPECTION.

The J. W. Marshall mine is a horse-power, located at Minersville; depth of shaft, 73 feet; size, 4 x 4. This mine has two escapements. Ventilation natural. Roadways dry and clean. Vein averages 20 inches in thickness. Price paid for mining is \$1.35 per ton in summer and \$1.60 per ton in winter. The selling price is \$2.25 per ton in summer and \$2.50 in winter. Four miners, working sixty-six days, produced 366 tons of coal, valued at \$940.50. J. W. MARSHALL is pit boss.

The Lynn & Jackson mine, located at Minersville, or two miles east and six north of Concordia, is a horse-power shaft opening, 86 feet deep, and 4 x 6 in size. The opening was originally 6 x 6 in size; two feet have been cased off and used as an air-shaft. One cage in use. The mine had no escapement shaft at the time of my visit there. Connections have since been made with the Marshall mine which will serve as an escapement to this mine. The roadways were dry and ventilation good. Four miners and 3 day men, working 200 days, produced 800 tons of coal, valued at \$1900.

The Thomas Struthers mine No. 2, located at Minersville, which has been in operation ten years, was abandoned last July. The main south entry is kept open to connect with No. 4 mine's main north entry; it will then answer the double purpose of air-shaft and escapement shaft for No. 4 mine. Ten miners, working 100 days, produced 1200 tons of coal during the year, valued at \$2850.

The Thomas Struthers mine No. 3, located at Minersville, is a horse-power shaft, seventy-six feet deep. This mine only worked three months during the year. Mr. Struthers allowed it to stand idle until he had connections made with mines No. 2 and No. 4, when he intended to sink a pump shaft in the most central point between his three shafts that would drain all his works.

The Thomas Struthers mine No. 4 is located close to mine No. 3; is a new mine that was sunk to the coal about September 1. Depth of shaft, 80 feet; size, 4 x 9; average thickness of vein, 24 inches. This mine had no second opening, but they were pushing an entry to connect with their No. 2 mine. When the Inspector visited there they ventilated this mine by leading the air to the face of working by means of brattice. When the connection above mentioned is made it will make a great improvement in the ventilation of the mine. The miners are paid \$1.25 per ton for mining in summer, and \$1.60 per ton in winter. The average selling price is \$2.37½ per ton. Fourteen miners, working 140 days, produced 1000 tons of coal, valued at \$2375. The production here given is for mines Nos. 3 and 4. T. STRUTHERS is pit boss.