

TWELFTH BIENNIAL REPORT

OF THE

STATE MINE INSPECTORS

FOR THE

Two Years Ending June 30, 1905,

TO THE

GOVERNOR OF THE STATE OF IOWA.

PRINTED BY ORDER OF THE GENERAL ASSEMBLY

DES MOINES:
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1905.

STATE MINE INSPECTORS.

District No. 1. JOHN VERNER, Chariton.
District No. 2. JAMES A. CAMPBELL, Ottumwa.
District No. 3. EDWARD SWEENEY, Des Moines.

BOARD OF EXAMINERS.

FOR MINE INSPECTORS, MINE FOREMEN AND HOISTING
ENGINEERS.

H. BOOTH, *President*, Knoxville.
JOHN OWENS, *Secretary*, Beacon.
J. W. BAKER, *Treasurer*, Des Moines.
EDWARD GRAY, Des Moines.
JOHN CALDWELL, Seymour.

STATISTICS RELATING TO COAL MINING IN IOWA FOR
THE TWO YEARS ENDING JUNE 30, 1905.

The steady annual increase in the coal production of the State, which commenced ten years ago, has been continued through the biennial period just closed and it can be said that the coal mining industry of Iowa, while by no means enjoying the high tide of prosperity, has been in fairly satisfactory condition in the recent past.

The increase in tonnage in the year just closed over the year ending June 30, 1904 was unusually high and amounted to nearly 600,000 tons. This gain, however, was not uniform in all parts of the State, in fact; there were heavy losses in some counties. Lucas county showed a loss of 74,000 tons last year; the reduction in the coal output of Keokuk county amounted to 34,000 tons, and Webster county's loss was 33,000 tons. On the other hand, Monroe, Polk, Mahaska, Boone and Marion counties made good gains, Monroe county leading in this respect with an increased production of more than 300,000 tons.

Of the twenty-three coal producing counties in the State, three counties, Monroe, Polk and Appanoose, produced more than three-fifths of last year's output. Eleven counties produced more than 100,000 tons each while the combined coal output of all the remaining twelve counties amounted to but little more than 160,000 tons.

The following tables give the coal producing counties of the State, the number of mines, the coal output and the number of men employed in and around the mines.

Number of mines in operation in each county, their coal output, number of miners and other employees for the year ending June 30, 1904.

Number of mines.	County.	Tons of coal of all grades produced.	Number of miners employed.	Number of other inside employees.	Number of outside employees.	Total number employed.	Number.
19	Monroe.....	1,808,975	2,249	862	418	3,529	1
27	Polk.....	986,172	1,547	500	280	2,327	2
82	Appanoose.....	895,759	2,465	547	390	3,372	3
14	Mahaska.....	530,428	872	226	150	1,248	4
18	Marion.....	346,629	581	144	81	806	5
16	Boone.....	345,472	789	169	112	1,070	6
12	Wapello.....	323,183	531	154	106	791	7
11	Jasper.....	302,599	477	170	62	709	8
3	Lucas.....	239,384	388	174	59	621	9
15	Webster.....	155,323	313	121	47	481	10
10	Wayne.....	95,424	275	70	42	387	11
8	Keokuk.....	52,375	80	28	19	127	12
12	Guthrie.....	29,353	137	11	16	164	13
6	Van Buren.....	17,844	33	5	15	53	14
4	Page.....	17,400	86	20	13	119	15
5	Dallas.....	16,586	49	19	8	76	16
5	Greene.....	15,898	62	11	7	80	17
13	Adams.....	15,185	110	9	15	134	18
6	Scott.....	14,983	54	23	5	82	19
7	Taylor.....	13,820	51	10	6	67	20
5	Warren.....	10,637	42	8	9	59	21
1	Jefferson.....	875	3	.....	1	4	22
1	Davis.....	125	4	4	1	9	23
300	Total.....	6,214,379	11,198	3,285	1,832	16,315	

Number of mines in operation in each county, their coal output, number of miners and other employees for the year ending June 30, 1905.

Number of mines.	County.	Tons of coal of all grades produced.	Number of miners employed.	Number of other inside employees.	Number of outside employees.	Total number employed.	Number.
20	Monroe.....	2,117,127	2,697	885	384	3,916	1
30	Polk.....	1,094,521	1,905	566	334	2,805	2
91	Appanoose.....	895,480	2,487	633	400	3,520	3
22	Mahaska.....	676,409	1,071	289	149	1,509	4
15	Boone.....	422,802	766	272	113	1,151	5
19	Marion.....	372,855	601	169	80	850	6
12	Wapello.....	368,029	665	149	106	910	7
12	Jasper.....	305,027	454	143	74	671	8
4	Lucas.....	165,256	305	154	59	518	9
11	Webster.....	122,056	233	95	39	367	10
10	Wayne.....	104,873	334	79	42	455	11
15	Guthrie.....	29,416	102	31	17	150	12
18	Adams.....	19,577	134	13	18	165	13
6	Keokuk.....	18,191	29	8	7	44	14
6	Greene.....	17,470	74	23	11	108	15
4	Page.....	17,166	79	13	9	101	16
9	Taylor.....	15,651	88	21	12	121	17
5	Dallas.....	13,599	43	17	10	70	18
6	Van Buren.....	12,648	24	5	15	44	19
5	Warren.....	9,483	48	11	9	68	20
4	Scott.....	5,210	38	14	6	58	21
3	Jefferson.....	2,050	9	1	2	12	22
3	Davis.....	1,115	11	6	4	21	23
326	Total.....	6,806,011	12,197	3,587	1,840	17,624	

Number of mines in each district, their coal output, number of miners and other employees for the year ending June 30, 1904.

District.	Number of mines	Tons of coal of all grades produced.	Number of miners employed.	Number of other inside employees.	Number of outside employees.	Total number of employees.
Number 1.....	131	2,395,470	4,722	1,313	761	6,796
Number 2.....	72	1,972,523	3,048	948	534	4,530
Number 3.....	97	1,846,386	3,428	1,024	537	4,989
Total.....	300	6,214,379	11,198	3,285	1,832	16,315

Number of mines in each district, their coal output, number of miners and other employees for the year ending June 30, 1905.

District.	Number of mines	Tons of coal of all grades produced.	Number of miners employed.	Number of other inside employees.	Number of outside employees.	Total number of employees.
Number 1.....	146	2,347,360	5,010	1,463	777	7,250
Number 2.....	82	2,443,550	3,572	963	459	4,994
Number 3.....	98	2,010,101	3,615	1,161	604	5,390
Total.....	326	6,806,011	12,197	3,587	1,840	17,624

FATAL AND SERIOUS ACCIDENTS

It is very gratifying that the two years just closed show a greater tonnage per life lost than any of the five preceding biennial periods; and what is better, a lower fatality rate per 1,000 employees. Last year's record in this respect is especially pleasing; 283,584 tons of coal were mined for each life lost, and the fatality rate per 1,000 employees reached the low mark of 1.4.

During the year ending June 30, 1904, thirty-one fatal and eighty-four serious accidents occurred in the mines of the State. Last year twenty-four fatal and one hundred serious accidents were reported.

A summary of these accidents, their causes, etc., will be found in the following tables:

Causes of fatal mine accidents in Iowa during the year ending June 30, 1904, and counties in which the accidents occurred.

Cause.	Appanoose.	Monroe.	Lucas.	Wayne.	Page.	Mahaska.	Keokuk.	Polk.	Webster.	Jasper.	Boone.	Total.
Falls of roof or coal	2	7			1	2		4		1	1	18
Material falling down shaft				1	1							2
Explosion caused by shot		2										2
Overcome by damp			1									1
Crushed by cage		1										1
Flying coal from shot		1						1		1		3
Run over by cars							1	1				2
Falling from tower						1						1
Falling in sump								1				1
Total	2	11	1	1	2	3	1	6	1	2	1	31

Causes of serious mine accidents in Iowa during the year ending June 30, 1904, and counties in which the accidents occurred.

Cause.	Appanoose.	Monroe.	Lucas.	Mahaska.	Wapello.	Keokuk.	Marion.	Polk.	Jasper.	Boone.	Webster.	Scott.	Greene.	Total.
Falls of roof or coal	12	15		4	7			8	13	4	1	1	1	52
Injured by cars			1					2	13					16
Injured by cage		1				2								10
Miscellaneous	1	12					1	1	1					6
Total	12	28	6	4	7	2	1	11	5	4	1	1	1	84

Causes of fatal mine accidents in Iowa during the year ending June 30, 1905, and counties in which the accidents occurred.

Cause	Appanoose.	Monroe.	Lucas.	Wayne.	Marion.	Mahaska.	Polk.	Boone.	Greene.	Total.
Falls of roof or coal	1	5	1		1		6		1	15
Falling down shaft	1									1
Crushed by cars				1		1	2			4
Crushed by cage					1			1		2
Flying coal from shot						1				1
Powder explosion							1			1
Total	2	5	1	1	2	2	9	1	1	24

Causes of serious mine accidents in Iowa during the year ending June 30, 1905, and counties in which the accidents occurred.

Cause.	Appanoose.	Monroe.	Lucas.	Wayne.	Marion.	Mahaska.	Keokuk.	Wapello.	Polk.	Jasper.	Boone.	Guthrie.	Total.
Falls of roof or coal	6	20	1	2	5	1	1	5	18	3	1	1	64
Cars	12	5	4		2				4	1			21
Material falling down shaft	1								1				2
Flying coal from shot		2				1			2				5
Burnt by powder									1				1
Miscellaneous		1				1			2	2			6
Total	9	31	5	2	7	3	1	5	29	6	1	1	100

Fatal and serious accidents in the mines of the State during the year ending June 30, 1904, with relation to coal produced and number of employees.

Districts.	Number of Accidents.		Number of Tons of Coal Produced.	Tons of Coal Produced for Each Accident.		Number of Employees.	Number of Employees for Each Accident.	
	Fatal.	Serious.		Fatal.	Serious.		Fatal.	Serious.
District No. 1.	13	28	2,395,470	184,267	85,552	6,796	523	243
District No. 2.	8	33	1,972,523	246,565	59,773	4,630	506	137
District No. 3.	10	23	1,846,386	184,639	80,278	4,989	490	217
Total	31	84	6,214,379	200,464	73,983	16,315	520	194

Fatal and serious accidents in the mines of the State during the year ending June 30, 1905, with relation to coal produced and number of employes.

Districts.	Number of Accidents.		Number of Tons of Coal Produced.	Tons of Coal Produced for each Accident.		Number of Employes.	Number of Employes for each Accident.	
	Fatal.	Serious.		Fatal.	Serious.		Fatal.	Serious.
District No. 1.	7	32	2,347,390	335,337	73,355	7,250	1,036	226
District No. 2.	6	31	2,443,550	403,092	78,985	4,994	832	161
District No. 3.	11	37	2,010,101	182,736	54,327	5,380	489	145
Total	24	100	6,800,011	283,584	68,060	17,624	734	176

Table showing fatal mine accidents in Iowa for the last twelve years, their relation to coal tonnage and employes.

Year.	Number of accidents.	Tons of coal produced.	Tons of coal per accident.	Number of employes.	Fatality rate per 1000 employes.
1894	19	3,777,893	198,810	10,258	1.9
1895	20	3,195,838	159,792	10,962	1.8
1896	22	3,525,490	160,254	11,451	2.
1897	21	3,799,734	180,464	11,678	1.8
1898	26	4,397,722	169,143	10,550	2.5
1899	30	4,949,310	247,466	11,029	1.8
1900	29	5,117,285	176,458	13,041	2.2
1901	27	5,441,863	201,550	13,175	2.
1902	55	5,514,205	100,258	13,002	4.2
1903	21	6,185,734	294,559	13,192	1.6
1904	31	6,214,379	200,464	16,815	1.9
1905	24	6,800,011	283,584	17,624	1.4

BIENNIAL REPORT OF THE FIRST DISTRICT

COUNTIES COMPRISING THE DISTRICT:

APPANOOSE, MONROE (part),
LUCAS, WAYNE,
TAYLOR, PAGE,
ADAMS.

JOHN VERNER, INSPECTOR.
CHARITON, IOWA.

LETTER OF TRANSMITTAL.

HON. ALBERT B. CUMMINS, Governor of Iowa.

Sir,—I have the honor to submit to you herewith the report of the First Inspection District, covering the biennial period ending June 30, 1905.

Very respectfully,

JOHN VERNER,

Inspector First District.

REPORT OF FIRST DISTRICT.

The law of this State provides that the mine inspectors shall meet in their general office in the Capitol biennially on or before August fifteenth preceding the regular session of the general assembly, and make report to the Governor of their official doings, including therein all matters which are especially committed to their charge, etc. To make this report as the law requires, the operators must be called upon for needed information, and it is essential that such information is furnished promptly.

The majority of the coal operators in this district have given this information with commendable promptness, while the considerable minority had to be urged repeatedly before a response could be had. Ninety-three per cent of the blanks sent out were filled out and returned to this office. Reports were received from every mine in Monroe, Lucas and Page county, while two small shipping mines, in Appanoose county, and four local mines in different parts of the district failed to report.

There are no objectionable features about this report and it requires less time to make it than must be given to reports furnished the inspectors in other mining states. It only relates to coal production, number of miners and others employed, number of days the mine worked and a statement of accidents, if any, and I know, from personal observation, that in any rightly regulated mine office the data for any one mine can be compiled in fifteen minutes.

We have no law requiring the operator to make a report to the mine inspector. Nearly all the other mining states have laws, more or less strict and explicit, covering this matter. The Pennsylvania law provides for yearly reports to be made on or before the twenty-fifth day of January and covering the year preceding. The report shall be in such form and give such information regarding a mine as may from time to time be required and prescribed by the inspector of the district. The Kansas law provides for quarterly statements to the mine inspector, not later than ten days after the end of each quarter. The report shall state amount of coal mined, number of miners employed, number of daymen, number of boys, number of days worked, accidents, serious and fatal, and wages paid. The Missouri law prescribes what information must be furnished and provides that the report must be made by the twentieth day of January for the preceding year. Failure to make the report is punishable by a fine of from one hundred to three hundred dollars.

It is very probable that the Iowa legislature, after prescribing that the mine inspector shall make a report to the Governor, will provide the means necessary to facilitate the making of such report, but compulsory legislation

on this point should not be necessary and will not be needed if the operators, who were either slow in making the report or failed to report, will realize that it is preferable to comply with a fair and reasonable request voluntarily, than to be compelled to do so by law.

During the biennial period just closed 493 inspections of the mines in this district were made and twenty-eight scales were tested, and I can say that nearly all the operators have tried to maintain the mines and their equipments in satisfactory condition and that in most cases they have been successful in their efforts.

Nothing occurred in the last two years to disturb the friendly relations existing between the miners and operators. In April, 1904, the miners were idle for a few weeks, but as soon as the wage scale, to prevail until April 1, 1906, was agreed to, work was resumed.

During the biennial period ending June 30, 1903, the mines of the district, as now constituted, produced 4,232,253 tons of coal; during the biennial period just closed the coal production amounted to 4,742,830 tons, showing a gain of 510,577 tons in the last two years. During the year ending June 30, 1904, 2,395,470 tons were mined, and last year's output was 2,347,360 tons.

The following tables give in compact form the number of mines in the counties comprising the district, their coal output and the number of persons employed in the coal industry.

Number of mines in operation in each county, their coal output, number of miners and other employees in District No. 1, for the year ending June 30, 1904.

County.	Number of mines.	Tons of coal of all grades produced.	Number of miners.	Number of other inside employees.	Number of outside employees.	Total number employed.
Appanoose.....	82	895,759	2,465	547	360	3,372
Monroe (part).....	12	1,118,548	1,847	483	296	2,626
Lucas.....	3	239,384	388	174	59	621
Wayne.....	10	95,424	275	70	42	387
Taylor.....	7	13,820	51	10	6	67
Page.....	4	17,400	86	20	13	119
Adams.....	13	15,185	110	9	15	134
Total....	131	2,395,470	4,722	1,313	761	6,796
Mines in District No. 1 connected with railroads.....	74	2,275,610	4,267	1,249	665	6,172
Mines local or without railroad connections.....	57	119,851	455	73	96	624
Total.....	131	2,395,470	4,722	1,313	761	6,796

Number of mines in operation in each county, their coal output, number of miners and other employees in district No. 1, for the year ending June 30, 1905.

County.	Number of mines.	Tons of coal of all grades produced.	Number of miners.	Number of other inside employees.	Number of outside employees.	Total number employed.
Appanoose.....	91	895,480	2,487	633	400	3,520
Monroe (part).....	13	1,129,357	1,583	550	237	2,370
Lucas.....	4	165,250	305	154	59	518
Wayne.....	10	104,873	334	79	42	455
Taylor.....	9	15,651	88	21	12	121
Page.....	4	17,166	79	13	9	101
Adams.....	15	19,577	134	13	18	165
Total.....	146	2,347,360	5,010	1,463	777	7,250
Mines in district No. 1 connected with railroads.....	80	2,223,022	4,472	1,367	678	6,517
Mines local or without railroad connections.....	66	124,338	538	96	99	733
Total.....	146	2,347,360	5,010	1,463	777	7,250

GENERAL CONDITIONS OF THE MINES IN THE FIRST DISTRICT.

In all the new mines opened during the last two years and in many of the older ones, a decided improvement in the system of working them is apparent. This has been made especially manifest in the last year, for while the working time of the mines during the year ending June 30th last was generally considerably less than in recent preceding years, there was but little decrease in the coal output of the district. It is a well known fact that the mining of coal in Iowa very often must be carried on under difficult conditions, such as do not exist in Illinois and the great mining states of the East and South. There the operator may determine even before he opens his mine how its workings shall be arranged and how future development shall be made and nature seldom interferes to prevent the carrying out of his plans. The Iowa mine operator may also have well-considered plans for the opening and working of his mine, but in trying to put his plans into practice he will very likely meet conditions that will completely upset them and force him to rearrange his work to suit these conditions and overcome the difficulties before him as well as he may. That improvements in mining methods under such circumstances can not be easily obtained is readily understood, and that appreciable advance has been made in that direction shows that the progressive and enterprising Iowa mine operator is making the best of his opportunities. Greater care is now shown to avoid the penalty that is exacted from every operator who strives for the largest immediate returns possible, without due consideration and preparation for meeting the future needs of the mine. Mine haulage has been improved, shaft bottoms have been arranged to permit the easier and more rapid handling and caging of coal and improvements on top have kept pace with those made below.

The hoisting machinery at the mines was generally found to be in satisfactory and safe condition. In a few cases I found that hoisting ropes, showing visible signs of injury to the wires, had been permitted to remain in use. The fact that the safety devices were in good working order and would prevent injury to persons conveyed through the shaft, should the rope break, does not warrant the use of defective ropes. Every part of the hoisting apparatus should be kept at all times in the best possible condition, and it is not good mine management to have it otherwise.

In a number of the larger mines using mechanical haulage, separate and convenient traveling roads have been provided and considerable money has been spent to put them in available condition. It may not be practical to provide such separate traveling roads in all mines using mechanical haulage, but if this can not be done, and the haulage roads must be used for travel, there should be adequate safeguards provided to protect the

workmen from injury by the moving cars. Fortunately during the last two years no miner or other underground employe has been injured while going to or from his place of work. This is a pleasing fact, but is not proof that the traveling roads are now about as safe as they can be made and that further efforts to increase the safety of underground travel are not needed.

The escape shafts have been kept in fairly available condition, but in some of the drift and slope mines of Appanoose county the escape roads were found to be badly kept. Improvements have been made, however, and will continue, until all these roads are put in such condition as the law prescribes.

Mine stables are now better located and safer than ever before. Stables have been removed from out of the way places to locations where constant supervision is possible, the danger from fire occurring in them has been lessened, and should one occur, means have been provided to subdue it in its incipency and prevent the smoke reaching the men at work in the mine.

An unusual amount of outside mine property was destroyed by fire during the last two years. On August 19, 1903, the tippie, engine-room, boiler house and blacksmith shop of No. 3 mine of the Centerville Block Coal Company burned down. On August 29th of the same year, the engine-house and part of the trestlework belonging to the Egypt Coal Company was destroyed. The top works of the Star mine in Centerville burned December 11, 1904. On January 7, 1905, the engine and boiler-house of No. 2 mine of the Exline Coal Company was destroyed. The Wapello Coal Company lost the engine and boiler-house of mine No. 4 on January 25, 1905, and on February 4th the top works of mine No. 1 of the Hocking Valley Coal Company burned down. No lives were placed in danger at any time on account of these fires, and operation of all these mines was resumed as soon as the buildings were replaced.

The work done and the improvements made in the last two years to render the mines safe and furnish fair sanitary conditions to the mine workers have been of considerable scope. I am pleased to state that a large amount of this work was done without any urging on my part, and in a few instances only did some operator or mine official show neglect or unwillingness to comply with my request to put and maintain his mine in fairly satisfactory condition.

MINE VENTILATION.

The expectation expressed in my last report that a material improvement in the ventilation of the mines of this district would likely come about in the biennial period just closed, has been realized to a gratifying extent. It is true, there are mines in this district at this time that are not satisfactorily ventilated, but their number is considerably less than it was two years ago and will be still further reduced as rapidly as circumstances will permit. The reason that in the latter cases better progress was not made, was due to the fact that the mines either had not been properly opened and arranged for future needs, or that natural drawbacks and difficulties existed, or that neglect and incompetency in the past on the part of the mine management made the obtaining of immediate satisfactory results very difficult, if not impossible.

It is evident that the operators realize more than ever before the importance of good mine ventilation and the benefits derived from it. Generally they have shown an earnest desire to improve their mines in this respect, and, in some instances, by the use of up-to-date methods, they have succeeded remarkably well.

All the mines in Monroe county (thirteen), belonging in this district, have fan-ventilation. In Appanoose county thirty mines are ventilated by fans, in Lucas county three, and in Wayne county two. The increase in the number of fans in use during the last two years over the number in use during the preceding biennial period, was seven. Nineteen mines (eighteen of them in Appanoose county), with an individual yearly production ranging from 5,000 to 30,000 tons of coal, were ventilated by furnaces. Nearly all the remaining small mines use furnaces, while some of the rather unimportant country mines, working only in the winter season, depend on natural ventilation.

All the new shipping mines, recently opened in this district, have been provided with air shafts of fair dimensions, fans have been or will be erected on them, and the underground workings have been so arranged with regard to future requirements that, with ordinary care and attention, satisfactory ventilation can be had in these mines for years to come.

SCALES.

The mine scales in the district have been kept in fair weighing condition, and if the decreasing number of tests called for is any criterion there has been material improvement in this respect. In the first fifteen months of my work in this district, I tested twenty-three scales, in the year ending June 30, 1904, sixteen, and during last year, twelve. Of the twenty-eight scales tested in the last two years, twenty were found correct and eight required adjustment.

SHOT EXAMINERS AND THEIR WORK.

In my judgment, the shot examiners employed in this district are competent men, a number of them having served with marked efficiency ever since the shot examination law took effect and the record shows that they have done good work. In one or two mines changes in the examining force have been rather too frequent. This frequent change should be avoided, if possible, for it is undoubtedly a correct proposition that the longer a shot examiner of fair ability stays in service, the more reliable will be his judgment and the more competent he will become.

The shot examination law has been in force now for more than three years. In the two years preceding the taking effect of the law, attempts had been made to do the blasting with greater safety and shotfirers were employed in some of the mines in this district. Little attention, however, was given to the examination of shots prior to firing them, and during these two years five explosions occurred in the mines employing shotfirers. Six shotfirers lost their lives in these explosions and two were rescued just in time to save them. In the three years following the enactment of the law, with more thorough examination and better safeguards provided, one explosion occurred, resulting in the loss of two lives.

The benefits of the law have been clearly established in Iowa, and its merits have been recognized in other mining states.

FATAL AND SERIOUS ACCIDENTS.

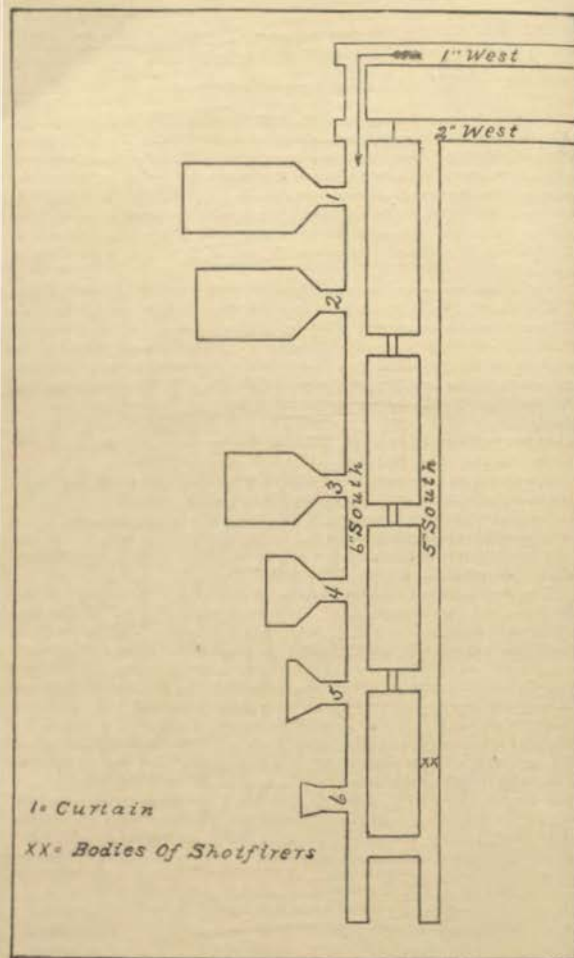
During the year ending June 30, 1904, thirteen fatal and twenty-eight serious accidents occurred in and about the mines of this district. Of the thirteen men killed, seven lost their lives by falls of roof or coal, two were killed by timber or rock falling down the shaft, two by an explosion, one was overcome by damp and one was crushed by a cage. Fifteen of the serious accidents were due to falls of roof or coal, ten persons were injured by cars on the haulage roads, one was caught in a flywheel, one was injured by a cage and one lost an eye through a chip from a steel wedge entering it.

In the last year seven fatal and thirty-two serious accidents were reported. Five of the fatal accidents occurred at the working face and were due to falls of roof or coal, one man was killed by falling down a shaft and one was fatally injured by being crushed between a car and timber on top of the shaft of the Big Jim mine. Twenty-one of the serious accidents were caused by falls of roof or coal, ten persons were injured on the haulage roads and one was injured while descending on the cage by being struck by a part of a safety gate.

In the year ending June 30, 1904, the fatal accident rate per 1,000 employes was 1.9. Last year it was .96.

It seems to be unnecessary to review in detail all of the above accidents, but believing that all available information regarding explosions occurring in this State should be presented, in order that such information may be of some assistance to suggest means to prevent them in the future, I give the results of my investigation of the explosion which occurred on January 25, 1904, in mine No. 6, of the Phillips Fuel Co.

Two lives were lost in this explosion. A. Carlson, the shot examiner and shotfirer, and his assistant, J. W. Stevens, were the victims. Their dead bodies were found on the fifth south entry (see sketch). There is no doubt about the explosion's starting point. It originated in room 6 on the sixth south entry and its occurrence, in my judgment, was largely due to the fact that the shot examiner apparently only considered the shots prepared in the sixth south entry separately as to their safety and failed to recognize the danger that existed in the injudicious manner of firing the shots located in a part of the mine extremely limited in space. The shot which caused the explosion, considered by itself, would probably have been accepted as reasonably safe by any other shot examiner in the district, and, in my judgment, fired by itself, although containing too much powder for the work done, would not have caused any harm. I believe it was a combination of dangerous conditions existing in and about room 6 when this shot was fired, that made the explosion possible and it was a failure on the part of the shotfirers to notice the existence of these threatening conditions that cost them their lives.



The ventilation in the fifth and sixth south entries was generally good, but as at the request of the shotfirers the fan was stopped when the miners were leaving the mine, there was little, if any, air movement at firing time. It was found that no rooms had been turned on the fifth south entry and that rooms 1 and 2 on the sixth south entry were not working, that shots had been prepared and fired in rooms 3, 4, 5 and 6 and in the sixth south entry and that one shot had been prepared and left unfired in the fifth south entry. It was also established that two shots were fired in room 6. The shotfirers evidently commenced lighting the shots in room 3, and proceeding southward they probably touched off the fuses of the shots in room 6 and the entry at the same time, retiring through the last crosscut to the fifth south entry.

That the explosion originated in room 6 was shown by the fact that, while the loose coal at the mouth of room 5 and the coal thrown by the entry shot was covered with soot and dust, room 6 and its immediate vicinity presented a clean appearance as if it had been swept with a broom. The explosion's force was comparatively small and very little coked dust was found and that only in the immediate vicinity of room 6.

It is, of course, impossible to establish the exact co-relation of forces that brought on the explosion. As it is customary to so regulate the length of fuses, when more than one shot is fired in a place, that the shots may not explode at the same time, it is not probable that the two shots in room 6 exploded together. I believe the shot fired in the sixth south entry was the main factor contributing to the explosion's origin. It was proved that this shot exploded prior to the shot in room 6, the difference in time being very slight and may not have exceeded the fractional part of a second. That being the case, we have this situation: The pressure from the entry shot momentarily retards the dissipation of the heated gases coming from the shot in room 6, their heat is increased and intensified in consequence, additional and ready fuel is provided by the dust swept out of the face of the entry past the mouth of room 6, and the explosion is the result.

The explosion could have been prevented; at any rate there should have been no loss of life. The shotfirers erred in considering the fifth south entry a safe retreat. In close workings shotfirers should never remain on the entry while the shots are being fired close by; it means certain death should any of these shots cause even a slight explosion. They erred also in the manner of lighting the shots; they should have fired the entry shots first, commencing on the fifth south entry. They should have waited until these shots had done their work and then fired the room shots in the sixth south entry, starting in room 6. Their place of retreat should have been room 1 on the sixth south entry.

Fatal accidents in District No. 1, July 1, 1903—June 0, 1904.

Date.	Name of Deceased	Occupation.	Cause of Death.	Employed by—	County.
September 12, 1903	D. Jenkins	Timberman	Fall of slate	Wapello Coal Co.	Monroe.
December 8, 1903	L. Maley	Miner	Fall of slate	G. Howard	Page.
December 8, 1903	P. Stancovich	Miner	Fall of slate	Hocking Coal Co.	Monroe.
January 1, 1904	C. Villars	Miner	Struck by plank in shaft	Johnston & Co.	Page.
January 16, 1904	Wm. Webster	Miner	Fall of black bat	Hocking Valley Coal Co.	Appanoose.
January 20, 1904	P. E. Carlson	Miner	Crushed by cage	Hocking Coal Co.	Monroe.
January 25, 1904	J. W. Stevens	Shotfirer	Explosion	Phillips Fuel Co.	Monroe.
January 25, 1904	A. Carlson	Shotfirer	Explosion	Phillips Fuel Co.	Monroe.
January 28, 1904	Geo. Spoler	Miner	Fall of black bat	Peerless Coal Co.	Appanoose.
February 20, 1904	J. McCue	Miner	Struck by rock while crossing shaft	Numa Block Coal Co.	Wayne.
March 21, 1904	Jas. A. John	Miner	Overcome by damp	Big Hill Coal Co.	Lucas.
May 23, 1904	W. H. Mitchell	Miner	Fall of slate	Wapello Coal Co.	Monroe.
June 30, 1904	S. Vedo	Miner	Fall of slate	Smoky Hollow Coal Co.	Monroe.

Serious accidents in District No. 1, July 1, 1903—June 30, 1904.

Date.	Name of Injured.	Occupation.	Character of Injury.	Cause of Injury.	Employed by—	County.
July 9, 1903	Ed Brock	Driver	Arm broken	Caught between cars.	Smoky Hollow C. Co.	Monroe.
July 18, 1903	Fred Taylor	Driver	Leg broken	Run over by car.	Whitebreast Fuel Co.	Lucas.
August 22, 1903	B. Kauzasky	Miner	Spine injured	Fall of slate	Thistle Coal Co.	Appanoose
September 9, 1903	T. Lewis	Driver	Arm broken	Thrown from car.	Big Hill Coal Co.	Lucas.
September 10, 1903	A. J. Swanson	Driver	Nose and jaw broken	Kicked by mule	Smoky Hollow C. Co.	Monroe.
September 18, 1903	Wm. Holland	Engineer	Four ribs broken	Struck by flywheel	Ill. and Iowa Fuel Co.	Appanoose
September 19, 1903	A. Nelson	Miner	Leg broken	Fall of coal	Dewey Coal Co.	Appanoose
October 4, 1903	Jas. Burt, Jr.	Driver	Leg broken	Mule ran away	Hocking Valley C. Co.	Appanoose
October 21, 1903	R. Snodgrass	Miner	Leg broken	Fall of slate	Smoky Hollow C. Co.	Monroe.
November 11, 1903	F. Rossi	Miner	Leg broken	Fall of coal	Domestic Coal Co.	Appanoose
November 14, 1903	M. Wranish	Miner	Arm broken	Fall of coal	Ill. and Iowa Fuel Co.	Appanoose
November 16, 1903	R. Zimmerman	Miner	Leg broken	Fall of slate	Wapello Coal Co.	Monroe.
December 12, 1903	T. Brennan	Toolman	Leg broken	Caught by cage	Whitebreast Fuel Co.	Lucas.
December 24, 1903	H. Miles	Trapper	Leg broken	Run over by car.	Whitebreast Fuel Co.	Lucas.
January 13, 1904	C. Grecco	Miner	Hips injured	Fall of coal	Mnfrs' C. and C. Co.	Appanoose
January 20, 1904	J. C. Neachem	Driver	Arm broken		Whitebreast Fuel Co.	Lucas.
January 27, 1904	F. Quilliane	Laborer	Bone in ankle broken	Fall of slate	Smoky Hollow C. Co.	Monroe.
February 9, 1904	F. Hines	Miner	Three fingers cut off	Fall of slate	Smoky Hollow C. Co.	Monroe.
February 9, 1904	Wm. Hall	Miner	Leg broken	Fall of slate	Smoky Hollow C. Co.	Monroe.
February 20, 1904	C. Babbitt	Driver	Thumb cut off	Caught between cars.	Big Jo Coal Co.	Appanoose
March 1, 1904	J. Henley	Miner	Leg broken	Fall of coal	Anchor Coal Co.	Appanoose
March 2, 1904	Jas. Dawson	Miner	Jaw and nose broken	Fall of slate	Dewey Coal Co.	Appanoose
March 12, 1904	W. Bilterman	Miner	Leg broken	Fall of coal	Smoky Hollow C. Co.	Monroe.
March 16, 1904	F. Hand	Pit boss	Back injured	Fall of clod	Hocking Valley C. Co.	Appanoose
March 21, 1904	J. Bazzaco	Miner	Loss of eye	Struck by piece of steel from wedge	Smoky Hollow C. Co.	Monroe.
May 2, 1904	P. Jackson	Driver	Finger cut off	Car jumped track	Smoky Hollow C. Co.	Monroe.
June 11, 1904	J. Milos	Miner	Ribs broken	Fall of coal	Big Jo Coal Co.	Appanoose
June 23, 1904	C. Phillips	Coupler	Leg broken	Caught between cars.	Whitebreast Fuel Co.	Lucas.

Fatal accidents in District No. 1, July 1, 1904-June 30, 1905.

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TWELFTH BIENNIAL REPORT OF THE

Date.	Name of Deceased.	Occupation.	Cause of Death.	Employed by—	County.
October 21, 1904	F. Felinski.	Miner	Fall of coal.	Orr Bros.	Appanoose.
January 6, 1905	Ed. Green.	Top boss.	Crushed by car.	Numa Block Coal Co.	Wayne.
February 2, 1905	P. Gallo.	Miner	Fell down shaft.	Big Jo Coal Co.	Appanoose.
March 23, 1905	Thos. Davis.	Miner	Fall of slate.	Phillips Fuel Co.	Monroe.
May 19, 1905	Thos. Dwyer.	Miner	Fall of slate.	Wapello Coal Co.	Monroe.
June 20, 1905	C. F. Carter.	Miner	Fall of slate.	Whitebreast Fuel Co.	Lucas.
June 20, 1905	L. Jones	Miner	Skull broken by post.	Hocking Coal Co.	Monroe.

Serious accidents in District No. 1, July 1, 1904-June 30, 1905.

Date.	Name of Injured.	Occupation.	Character of Injury.	Cause of Injury.	Employed by—	County.
July 21, 1904	J. Sonoras.	Miner	Back dislocated.	Fall of slate.	Hocking Coal Co.	Monroe.
July 29, 1904	H. Kephart.	Miner	Head and hips hurt.	Fall of slate.	Smoky Hollow C. Co.	Monroe.
August 20, 1904	J. Fargo.	Miner	Leg broken.	Fall of slate.	Smoky Hollow C. Co.	Monroe.
August 24, 1904	C. E. Starkey.	Miner	Ankle broken.	Fall of slate.	Smoky Hollow C. Co.	Monroe.
August 26, 1904	A. Kisela.	Miner	Leg broken.	Fall of slate.	Smoky Hollow C. Co.	Monroe.
November 12, 1904	— Waldeen.	Driver	Ankle broken.	Run over by car.	Whitebreast Fuel Co.	Lucas.
November 14, 1904	J. B. Williams.	Miner	Contraction of leg muscles.	Fall of coal.	Hocking Coal Co.	Monroe.
November 16, 1904	E. Houston.	Driver	Dislocation of spine.	Run over by car.	Mendota C. & M. Co.	Appanoose.
November 22, 1904	F. McVeitty.	Trapper	Leg crushed.	Run over by car.	Hocking Coal Co.	Monroe.
December 1, 1904	J. Moyle, Jr.	Miner	Leg broken.	Fall of slate.	Smoky Hollow C. Co.	Monroe.
December 23, 1904	J. Manecley.	Driver	Leg broken.	Run over by car.	Big Hill Coal Co.	Lucas.
December 29, 1904	A. Roberts.	Laborer	Leg broken.	Fall of rock.	Numa Block C. Co.	Wayne.
December 31, 1904	T. C. Mongar.	Miner	Spine dislocated.	Fall of slate.	Skidmore Bros.	Lucas.
December 31, 1904	N. Weeks.	Miner	Ankle broken.	Fall of coal.	Peacock Coal Co.	Appanoose.
January 2, 1905	S. Bragg.	Miner	Arm and legs bruised.	Fall of coal.	Numa Block C. Co.	Wayne.
January 15, 1905	H. Bilterman, Jr.	Driver	Leg broken.	Struck by car.	White Ash Coal Co.	Monroe.
January 13, 1905	C. Grenko.	Miner	Hips crushed.	Fall of coal.	Manuf'ts C. & C. Co.	Appanoose.
January 16, 1905	J. Rajick.	Miner	Ribs broken.	Fall of rock.	Whitebreast Fuel Co.	Monroe.
January 20, 1905	D. Nelson.	Miner	Collar bone broken.	Fall of slate.	Star Coal Co.	Monroe.
February 1, 1905	D. Wright.	Miner	Arm broken.	Struck in shaft.	J. Shirey.	Appanoose.
February 4, 1905	R. Greathouse.	Miner	Two fingers cut off.	Fall of slate.	Oriental Coal Co.	Appanoose.
February 10, 1905	A. Parker.	Laborer	Leg broken.	Struck by car.	Wapello Coal Co.	Monroe.
February 20, 1905	C. Natting.	Miner	Hip dislocated.	Fall of coal.	Centerville B. C. Co.	Appanoose.
February 25, 1905	W. Milligan.	Driver	Shoulder dislocated.	Squeezed by mule.	Smoky Hollow C. Co.	Monroe.
February 25, 1905	J. Coop.	Top laborer.	Leg broken.	Struck by car.	Mendota C. & M. Co.	Appanoose.
February 27, 1905	J. Specks.	Miner	Leg broken.	Fall of coal.	Thistle Coal Co.	Appanoose.
April 20, 1905	J. Wester.	Laborer	Collar bone and ribs broken.	Fall of slate.	Whitebreast Fuel Co.	Monroe.
April 24, 1905	Wm. Brown.	Timberman.	Rib broken.	Fall of slate.	Star Coal Co.	Monroe.
June 5, 1905	Wm. Bates.	Miner	Hip injured.	Fall of bat.	Appanoose C. & F. Co.	Appanoose.
June 10, 1905	M. Eaves.	Miner	Leg broken.	Fall of slate.	Wapello Coal Co.	Monroe.
June 26, 1905	T. D. Evans.	Driver	Hand broken.	Caught by car.	Whitebreast Fuel Co.	Lucas.
June 29, 1905	D. Harvey.	Driver	Foot crushed.	Caught between cars.	Whitebreast Fuel Co.	Lucas.

STATE NINE INSPECTORS.

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Fatal and serious accidents in District No. 1, July 1, 1903, to June 30, 1904, with relation to coal produced and number of employees.

County.	Number of Accidents.		Number of Tons of Coal Produced.	Tons of Coal Produced for Each Accident.		Number of Employees.	Number of Employees for Each Accident.	
	Fatal.	Serious.		Fatal.	Serious.		Fatal.	Serious.
Appanoose	2	12	895,739	447,879	74,646	3,372	1,686	297
Monroe (part) ..	1	10	1,118,548	159,792	111,854	2,066	299	209
Lucas	1	6	239,384	239,384	39,897	621	621	103
Wayne	1	.....	95,424	95,424	.....	387	387	.....
Taylor .....	.....	.....	13,820	.....	.....	67	.....	.....
Page	2	.....	17,400	8,700	.....	119	59	.....
Adams .....	.....	.....	15,135	.....	.....	134	.....	.....
Total	13	28	2,895,470	184,267	85,552	6,796	523	243

Fatal and serious accidents in District No. 1, July 1, 1904, to June 30, 1905, with relation to coal produced and number of employees.

County.	Number of Accidents.		Number of Tons of Coal Produced.	Tons of Coal Produced for Each Accident.		Number of Employees.	Number of Employees for Each Accident.	
	Fatal.	Serious.		Fatal.	Serious.		Fatal.	Serious.
Appanoose	2	9	895,480	447,740	99,498	3,520	1,760	391
Monroe (part) ..	3	16	1,129,357	376,452	70,585	2,370	790	148
Lucas	1	5	165,256	165,256	33,051	518	518	104
Wayne	1	2	104,873	104,873	52,436	455	455	227
Taylor .....	.....	.....	15,651	.....	.....	121	.....	.....
Page .....	.....	.....	17,166	.....	.....	101	.....	.....
Adams .....	.....	.....	19,577	.....	.....	165	.....	.....
Total	7	32	2,347,390	895,837	73,855	7,250	1,096	226

THE NEED OF NATIONAL ASSISTANCE IN THE PREVENTION OF MINE ACCIDENTS.

About thirty-five years ago the first steps were taken in Pennsylvania to bring its anthracite mines under State supervision. Since that time all the principal coal producing states have adopted laws regulating the operation of coal mines within their borders, with the view of securing an increased measure of safety for the persons employed therein, and officials have been provided by these states to see that the requirements of these laws are complied with. Under State supervision the sanitary condition of the mines has been much improved, appliances and devices affording the miner greater safety and facility in entering or leaving the underground workings, are in evidence everywhere, efforts have been and are being made by the different State governments to give reasonable protection to the miner, while at work, yet, notwithstanding all this, the yearly death rate due to accidents in the coal mines of the United States remains alarmingly high, and judging from the evidence of recent events, there seems to be little hope, under the present order of things, that the future will show any appreciable reduction in this respect.

It appears that this state of affairs can only be accounted for in two ways: there is either a lack of knowledge as to what is required to make the mines more safe, or, such knowledge existing, willful and criminal negligence must be the cause. That some mine accidents have been due to neglect, and that in a very few instances this neglect may have been almost criminal, is probably true, but there is absolutely no foundation to sustain the charge that the high rate of mine fatalities in the United States in recent years has been due to widespread and universal neglect to provide adequate means for their prevention. There is no reason for believing that the mine operator in America is less humane than the mine operator in England or Germany, or that he feels less concern for the welfare and safety of the persons in his employ, and the only conclusion that presents itself is that it is not neglect but lack of sufficient knowledge of the hidden dangers of the mines that stands out as the obstacle that must be overcome before there can be hope for an appreciable reduction in the number of mine accidents in the United States. It is a true proposition that in order to overcome danger successfully, its existence, cause and nature must be well understood.

One of the principal causes of the high fatality rate in the mines of the United States has been due to the alarming frequency of disastrous explosions in mines containing little or no firedamp. After the occurrence of one of these so-called dust explosions the charge is often made and generally accepted as true, that the explosion was caused by carelessness, negligence or disregard of mining laws and mine rules. The truth is, that possible negligence, carelessness, etc., were only contributory factors and that the main cause, the principal factor that made it possible for such explosions to follow each other in rapid succession from Utah to Pennsylvania and from Iowa to Alabama, was inability to recognize and understand the existence of the danger.

It was not neglect of any kind, it was lack of information and knowledge regarding these explosions that caused the loss of two hundred lives in the mines at Scofield, Utah. The miners going to their work on the morning of May 1, 1900, were apparently confident that the mine they were entering was as safe as any mine in the United States; they, no doubt, believed that, with the exercise of ordinary care and watchfulness in doing their work at the face, no serious mishap would befall them, the mine officials believed that everything was all right, yet a few hours later the mine was wrecked and two hundred lives were lost. The surviving miners and the mine officials could not understand it, they could not account for this great calamity. Mining had been carried on in that locality for a number of years, with only the ordinary loss of life incident to mining, mine No. 4, where the explosion originated was in good condition, well ventilated and the requirements of the mining law had been fully complied with. Men with extensive experience in mines and mining, who worked in this mine, testified that it was free from gas, that they never thought of the possibility of an explosion and that they considered the mine perfectly safe. Why were these men and mine officials ignorant of the dangerous condition of the mine, why did they feel so secure, when a long record of explosions in other mines in different parts of the country, apparently as safe as this one, should have impressed upon them the need of caution and sufficient investigation to ascertain whether or not their mine really was as safe as they believed it to be? Why did they not profit by the lessons of disaster presented in other states? Presumably it was for the same reason that prevented Iowa, Tennessee, West Virginia, Alabama and other mining states from deriving any benefit from the lesson taught by the great calamity of Scofield, Utah. The opportunity to secure this benefit was lacking.

The good results coming from the centralizing of efforts to lessen the hazard to life incident to mining are readily recognizable in England, Germany and other coal producing countries of Europe, and it is a matter of regret that so far no efforts have been made in the United States to profit by their example. If these explosions are to be averted in the future, as I believe they can be, and a general safer condition of the mines brought about, it must be done through the assistance of the National Government and by the creation of a National bureau of mine accidents. The scope of such bureau should include the furnishing of statistics relating to mine accidents occurring in the United States, the investigation of all accidents through which a number of lives were lost, the special investigation of every explosion, the making of tests and experiments and the providing of useful information and advice. This bureau should be a central source of education and information, of such reliability and trustworthiness, that its teachings and advice will be readily accepted and followed by the mining interests and governments of every mining State and Territory in the Union. The United States, producing nearly two-fifths of the world's annual coal supply, with its widely spread coal fields with their diverse conditions and mining methods, with inspection service in every mining State, affords unequalled opportunities for successful work by the government experts, with the almost sure promise that results will be entirely satisfactory to all.

The plea that the individual mining states can deal with this question successfully, is no longer tenable. The proof to the contrary is too overwhelming. Individual efforts are too uncertain and often futile, there must be co-operation to get results and get them quickly, and such co-operation can only be carried on successfully with the help of the National Government. For humane as well as economic reasons the question of the creation of a National bureau of mine accidents should receive the early and favorable consideration of Congress.

APPANOOSE COUNTY.

Last year ninety-one mines were operated in Appanoose county. Sixty-two of these mines are connected with the railroads running through the county. Twenty-six mines are connected with the Chicago, Milwaukee & Saint Paul railroad, twenty-five with the Burlington, two with the Iowa Central and nine with the Chicago, Rock Island & Pacific. The remaining twenty-nine mines have no railroad connections and are generally operated in a small way to supply home demand, although a few of them ship part of their output.

The majority of the mines were operated a less number of days last year than the preceding year, and no surprise would have been felt had last year's coal output shown a material decrease. The loss in production, however, was very insignificant, and amounted to less than three hundred tons. The increase in tonnage in a number of mines, together with the additional output of new mines opened, nearly balanced the losses.

Two mines were abandoned and six shipping mines and five local mines were opened during the last two years.

The Illinois & Iowa Fuel Company closed its mine at Forbush last May, and a small mine near Exline, belonging to the White Oak Coal Company was abandoned last fall.

Of the new mines opened, mine No. 2, operated by the Scandinavian Coal Company, is located near Plano, on the Keokuk & Western railroad. It is substantially equipped, well arranged, has second opening, and is ventilated by a force fan fourteen feet in diameter.

The Exline Coal Co. experienced considerable difficulty in opening its No. 2 mine, located about three-fourths of a mile west of Exline, and about one-fourth mile east of mine No. 1. The shaft was sunk in a fault, and for a time it seemed that it would have to be abandoned, but good coal has been reached and the mine is now being developed. It is in good condition and the requirements of the law are fully complied with.

The Iowa Block Coal Co. opened a mine east of Exline, but the coal proved somewhat faulty and development work has been progressing but

slowly. An air and escape shaft has been sunk and connected with the workings and fan ventilation will be used.

The Prairie Block Coal Co. has opened a shaft mine on the Rock Island railroad, between Shawville and Numa, and has recently completed its air and escape shaft.

The Center Coal Co.'s. new shaft is located south of Centerville and connected with the Rock Island railroad. It is in good condition and provided with the safety devices the law requires. The sinking of the air and escape shaft is now progressing.

The Appanoose Coal and Fuel Co. opened a shaft mine near Diamond, on the Milwaukee railroad. It will have fan ventilation and mining machines, run by electricity will be used.

Of the five local mines recently opened, one is located in Centerville, two north of Exline, one north of Cincinnati and one east of Seymour.

In order to show what has been accomplished and the conditions prevailing at the close of this biennial period in the mines of Appanoose county, the following brief summary is given.

Appanoose Coal & Fuel Co. Mine No. 3. Has been somewhat improved during the last two years and, with care, can be kept in fairly satisfactory condition.

Walnut Block Coal Co. The mine is now worked on a small scale. Considerable improvements must be made before its output can be materially increased.

Phoenix Coal Co. Mechanical haulage has been substituted for mule haulage; the furnace has been enlarged and placed to better advantage. Mine in fair condition.

Centerville Block Coal Co. Mine No. 5. The ventilation, although improved and fairly satisfactory at present, should be made more efficient by providing means to increase the air volume going through the mine. The mine is in fair physical condition.

Tipton Co-operative Coal Co. Mine worked on a small scale and will probably soon be exhausted.

Peacock Coal Co. Mine in fair condition.

Oriental Coal Co. Mine in fair condition.

Keystone Coal Co. Mine in fair condition.

Centerville Block Coal Co. Mine No. 3. The escape shaft has been retimbered. Air volume too small for the needs of the mine. Under existing conditions it has proved a difficult task to better the ventilation materially, but some progress has been made in that direction. It is the intention of the management to sink an air shaft as soon as the east workings have advanced far enough to admit of its location with advantage to the mine and its future development.

Anchor Coal Co. Mine No. 1. The hoisting shaft has been enlarged and retimbered. By enlarging the air shaft also ventilation has been improved, although the north workings are not yet in satisfactory condition in that respect. Otherwise the mine is well cared for.

Scandinavian Coal Co. Mine No. 1. An additional air and escape shaft, located near the head of the workings, was recently completed, improving the ventilation and adding to the safety of the mine.

Dewey Coal Co. Mine in fair condition.

Hocking Valley Coal Co. Mine No. 4. Ventilation slack. As soon as a shaft, already sunk, is reached and a suitable furnace built at the bottom of it, the ventilation can be kept in satisfactory condition.

Hocking Valley Coal Co. Mine No. 1. Fair sized air shaft has been sunk. The mine was idle for several months after the dump and other buildings burned down, February 4, 1905, and the workings have suffered in consequence. After the damage has been repaired, the mine can be maintained in fair condition.

The Albert mine, operated by the Mendota Coal & Mining Co., has been much improved in the last two years and is in satisfactory condition. Improvements were also noted in the Appanoose mine, belonging to the same company.

Thistle Coal Co. Mine No. 1. Air shaft completed and fan erected. Mine No. 2. Main air course thoroughly cleaned and mine otherwise improved. Mine No. 3. In fair condition.

Exline Coal Co. Mine No. 1. Fan ventilation has taken the place of ventilation by steam jet. Mine in good condition.

Centerville Block Coal Co. Mine No. 9. In good condition.

Centerville Block Coal Co. Mine No. 2. This mine has been greatly improved and conditions are satisfactory.

Numa Block Coal Co. Mine No. 1. Ventilation has been deficient, but recently the fan has been removed from the quarter shaft, which is very small, to a shaft of larger dimensions, and better results in that respect can be expected.

Anchor Coal Co. Mine No. 3. The ventilation is improved; top works have been remodeled and the mine is in satisfactory condition.

Anchor Coal Co. Mine No. 2. In fair condition.

Centerville Block Coal Co. Mines Nos. 1 and 10. These mines are connected and are in good condition. The boiler power has been increased, the hoisting shaft of mine No. 1 has been retimbered and a new fan erected on the air shaft of mine No. 10, furnishing satisfactory ventilation for both mines.

Consumers Coal Co. The mine is in fair condition, but on account of a small sized air shaft, inadequate power to drive the fan and the poor construction of the fan itself, it has been difficult in the past to provide satisfactory ventilation for the mine. This summer the air shaft has been enlarged, the fan is now being remodeled and improved and a more powerful fan engine will be used. The results will be entirely satisfactory.

Big Jo Coal Co. Mine No. 1. Some difficulty was experienced in ventilating the southeast workings successfully, but since the west side of the mine has been abandoned, with the air courses in somewhat better shape, more satisfactory results may be expected.

F. H. Juckett Coal Co. Mine in fair condition.

Appanoose Coal & Fuel Co. Mine No. 21. When the present owners acquired this mine, it was in poor condition. It had been worked in a haphazard way and the lack of system made progress in its improvement difficult and slow. Much work remains yet to be done to put the mine in satisfactory condition.

Peerless Coal Co. Mine No. 4. In fair condition.

Peerless Coal Co. Mine No. 5. In fair condition.

Egypt Coal Co. The mine needs more adequate means to ventilate it properly.

Peerless Coal Co. Mine No. 1. In fair condition.

Artic Coal Co. Mine in fair condition.

Acken Coal Co. Mines No. 1 and 2 are now ventilated by a fan and, with proper attention, can be kept in satisfactory condition.

Peerless Coal Co. Mine No. 2. In good condition.

Mystic Coal Co. Mine in fair condition. An additional escape shaft has been sunk.

J. Helme Coal Co. Mine fairly satisfactory.

Diamond Block Coal Co. Mine No. 29. Somewhat improved and in fair condition.

Peerless Coal Co. Mine No. 6. Mechanical haulage installed. Ventilation fair in the west part of the mine, somewhat deficient in the east portion. At present the mine has furnace ventilation, but fan ventilation should be substituted as soon as the east workings can be connected with the Mystic Block mine. The latter is already connected with the above company's No. 3 mine, and a fan erected at the Mystic Block mine opening could provide efficient ventilation for both mines.

Peerless Coal Co. Mine No. 3. In fair condition.

Diamond Block Coal Co. Mine No. 12. Slope has been retimbered. The present manway is not in good condition, and it either should be put in more available condition or a new manway should be provided. Ventilation fair.

Orr Bros. Coal Co. Mine in fair condition.

Diamond Block Coal company, mine No. 5. Much improved in the last two years. In good condition.

Star Coal company. Mine well ventilated and in good condition.

Unity Block Coal company. Mine in fair condition.

Manufacturers Coal and Coke company. Mine No. 30. In fair condition.

The local mines were generally found to be in safe condition. In a few cases ventilation was deficient, but as the mines are of small extent it was not difficult to remedy this and provide a satisfactory volume of air for them.

It is not generally realized that the coal wealth of Appanoose county is far greater than that of any other county in Iowa. Making due allowance for all the coal mined in this county since its first mine was opened and considering only the vein now worked, the county's future available coal supply can be safely placed at 250,000,000 tons, a supply lasting at the present rate of production, for more than 250 years. There is no danger of any of the coal mining towns in the county being vacated in the near future on account of the coal in their vicinity giving out. Taking the town of Mystic, for instance, and supposing that the present yearly output of all the mines located along the Milwaukee railroad from Darbyville to Jerome had to be produced from now on in Mystic and its immediate vicinity alone it will be possible, under such conditions, for the Mystic miner to walk to his work fifty years hence, and the average distance traveled by him to reach his work need not exceed two miles from the center of the town.

Of the sixty-two mines in Appanoose county having shipping facilities, sixteen are worked on the room and pillar plan and forty-six on the long-wall system. In fifteen mining machines are in use.

The mines are easily maintained in safe condition. The safe condition of the traveling roads used by the miners and others in going to and returning from their work, is shown by the fact that the 3,000 underground workmen in the county traveled through these passages during the last two years, every day the mines worked, without serious injury to one of them. What danger exists in these mines is generally encountered at the working face. There three fatal accidents occurred in the last two years, caused either by falls of black bat or coal.

Unfortunately, somewhat unfavorable market conditions prevent the steady operation of the mines, and any one conversant with coal mining knows that with slack work prevailing, it is always more or less difficult and expensive to keep the mines in order. Notwithstanding this drawback, the great majority of the Appanoose county mines have been maintained in fair condition during the last two years, and a considerable number of them have been materially improved.

MINES IN APPANOOSE COUNTY, THEIR LOCATION, ETC.

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Corporation, Firm or Operator,	Mine number.	Location of Mine.	Railroad Connection, if Any.	Kind of opening.	System of Working.	Power used.	Means of ventilation.
Scandinavian Coal company.....	2	Plano.....	K. & W.....	Shaft.....	Room and pillar.	Steam.....	Fan.
Appanoose Coal and Fuel company.....	3	West of Brazil.....	K. & W.....	Slope.....	Long wall.....	Electric.....	Furnace.
Walnut Block Coal company.....	4	Brazil.....	K. & W.....	Drift.....	Long wall.....	Horse.....	Furnace.
Phoenix Coal company.....	5	Brazil.....	K. & W.....	Drift.....	Long wall.....	Steam.....	Furnace.
Centerville Block Coal company.....	5	Brazil.....	K. & W.....	Slope.....	Long wall.....	Steam.....	Furnace.
Tipton Co-Operative Coal company.....	5	Brazil.....	K. & W.....	Drift.....	Long wall.....	Horse.....	Furnace.
Peacock Coal company.....	5	Brazil.....	K. & W.....	Drift.....	Long wall.....	Horse.....	Furnace.
Oriental Coal company.....	1	South of Brazil.....	K. & W.....	Slope.....	Long wall.....	Steam.....	Furnace.
Oriental Coal company.....	12	South of Brazil.....	K. & W.....	Slope.....	Long wall.....	Steam.....	Furnace.
Keystone Coal company.....	3	1 mile southeast of Brazil.....	K. & W.....	Shaft.....	Long wall.....	Steam.....	Fan.
Centerville Block Coal company.....	3	West of Centerville.....	K. & W. and Iowa Cent'l	Shaft.....	Room and pillar.	Steam.....	Fan.
Anchor Coal company.....	1	Centerville.....	K. & W.....	Shaft.....	Long wall.....	Steam.....	Fan.
Scandinavian Coal company.....	1	Centerville.....	K. & W.....	Shaft.....	Room and pillar.	Steam.....	Fan.
Dewey Coal company.....	1	1 1/2 miles southeast of Centerville.....	K. & W.....	Shaft.....	Room and pillar.	Steam.....	Fan.
Hocking Valley Coal company.....	4	2 miles southwest of Cincinnati.....	C. B. & K. C.	Slope.....	Long wall.....	Horse.....	Furnace.
Hocking Valley Coal company.....	1	1 1/2 miles southwest of Cincinnati.....	C. B. & K. C.	Slope.....	Long wall.....	Horse.....	Furnace.
Mendota Coal and Mining company.....	2	West of Cincinnati.....	C. B. & K. C.	Shaft.....	Long wall.....	Steam.....	Fan.
Mendota Coal and Mining company.....	1	Cincinnati.....	C. B. & K. C.	Shaft.....	Long wall.....	Steam.....	Fan.
Thistle Coal company.....	3	Southeast of Cincinnati.....	C. B. & K. C.	Shaft.....	Long wall.....	Steam.....	Fan.
Thistle Coal company.....	1	1 mile east of Cincinnati.....	C. B. & K. C.	Shaft.....	Long wall.....	Steam.....	Fan.
Thistle Coal company.....	2	1 1/2 mile east of Cincinnati.....	C. B. & K. C.	Shaft.....	Long wall.....	Steam.....	Fan.
Exline Coal company.....	1	West of Exline.....	C. B. & K. C.	Shaft.....	Room and pillar.	Steam.....	Fan.
Exline Coal company.....	2	West of Exline.....	C. B. & K. C.	Shaft.....	Room and pillar.	Steam.....	Fan.
Iowa Block Coal company.....	2	Exline.....	C. B. & K. C.	Shaft.....	Room and pillar.	Steam.....	Jet.
Royal Coal company.....	2	Northeast of Exline.....	C. B. & K. C.	Slope.....	Long wall.....	Steam.....	Furnace.
Centerville Block Coal company.....	9	West of Centerville.....	Iowa Central.	Shaft.....	Room and pillar.	Steam.....	Fan.
Illinois and Iowa Fuel company.....	2	Forbush.....	Iowa Central.	Shaft.....	Long wall.....	Steam.....	Fan.
Centerville Block Coal company.....	2	Numa.....	C. R. I. & P.	Shaft.....	Long wall.....	Steam.....	Fan.
Numa Block Coal company.....	1	Numa.....	C. R. I. & P.	Shaft.....	Long wall.....	Steam.....	Fan.
Prairie Block Coal company.....	4	4 miles south of Centerville.....	C. R. I. & P.	Shaft.....	Long wall.....	Steam.....	Jet.
Anchor Coal company.....	3	3 miles south of Centerville.....	C. R. I. & P.	Shaft.....	Long wall.....	Steam.....	Fan.
Anchor Coal company.....	2	2 miles south of Centerville.....	C. R. I. & P.	Shaft.....	Room and pillar.	Steam.....	Fan.
Center Coal company.....	1	South of Centerville.....	C. R. I. & P.	Shaft.....	Room and pillar.	Steam.....	Jet.
Centerville Block Coal company.....	1	East of Centerville.....	C. R. I. & P.	Shaft.....	Room and pillar.	Steam.....	Fan.
Centerville Block Coal company.....	10	East of Centerville.....	C. R. I. & P.	Shaft.....	Room and pillar.	Steam.....	Fan.
Consumers Coal company.....	10	Jerome.....	C. M. & St. P.	Shaft.....	Long wall.....	Steam.....	Fan.
Big Jo Coal company.....	10	1 1/2 mile east of Jerome.....	C. M. & St. P.	Shaft.....	Long wall.....	Steam.....	Fan.

TWELFTH BIENNIAL REPORT OF THE

F. H. Juckett Coal company.....	3	3 miles southwest of Mystic.....	C. M. & St. P.	Shaft.....	Long wall.....	Steam.....	Fan.
Appanoose Coal and Fuel company.....	21	Diamond.....	C. M. & St. P.	Slope.....	Long wall.....	Steam.....	Furnace.
Appanoose Coal and Fuel company.....	22	Diamond.....	C. M. & St. P.	Shaft.....	Long wall.....	Steam.....	Fan.
Peerless Coal company.....	4	West of Mystic.....	C. M. & St. P.	Shaft.....	Long wall.....	Horse.....	Furnace.
Peerless Coal company.....	5	West of Mystic.....	C. M. & St. P.	Shaft.....	Long wall.....	Steam.....	Furnace.
Egypt Coal company.....	1	West of Mystic.....	C. M. & St. P.	Slope.....	Long wall.....	Steam.....	Furnace.
Peerless Coal company.....	1	Mystic.....	C. M. & St. P.	Drift.....	Long wall.....	Horse.....	Furnace.
Artie Coal company.....	1	Mystic.....	C. M. & St. P.	Drift.....	Long wall.....	Horse.....	Furnace.
Acken Coal company.....	1	West of Mystic.....	C. M. & St. P.	Slope.....	Long wall.....	Steam.....	Fan.
Acken Coal company.....	2	West of Mystic.....	C. M. & St. P.	Shaft.....	Long wall.....	Horse.....	Fan.
Peerless Coal company.....	2	West of Mystic.....	C. M. & St. P.	Shaft.....	Long wall.....	Steam.....	Jet.
Mystic Coal company.....	2	West of Mystic.....	C. M. & St. P.	Shaft.....	Long wall.....	Steam.....	Fan.
J. Helme Coal company.....	2	West of Mystic.....	C. M. & St. P.	Slope.....	Long wall.....	Horse.....	Furnace.
Diamond Block Coal company.....	29	Mystic.....	C. M. & St. P.	Shaft.....	Long wall.....	Steam.....	Fan.
Cedar Rapids Fuel company.....	6	Mystic.....	C. M. & St. P.	Drift.....	Long wall.....	Horse.....	Furnace.
Peerless Coal company.....	6	Mystic.....	C. M. & St. P.	Drift.....	Long wall.....	Steam.....	Furnace.
Peerless Coal company.....	3	Mystic.....	C. M. & St. P.	Drift.....	Long wall.....	Horse.....	Furnace.
Diamond Block Coal company.....	13	Mystic.....	C. M. & St. P.	Slope.....	Long wall.....	Horse.....	Furnace.
Beggs Coal company.....	13	1 1/2 mile east of Mystic.....	C. M. & St. P.	Shaft.....	Long wall.....	Horse.....	Furnace.
Orr Bros. Coal company.....	13	1 1/2 mile east of Mystic.....	C. M. & St. P.	Shaft.....	Long wall.....	Steam.....	Fan.
Diamond Block Coal company.....	5	Clarkdale.....	C. M. & St. P.	Shaft.....	Long wall.....	Steam.....	Fan.
Star Coal company.....	5	Rathbun.....	C. M. & St. P.	Shaft.....	Long wall.....	Steam.....	Fan.
Stone Coal company.....	5	East of Rathbun.....	C. M. & St. P.	Shaft.....	Long wall.....	Steam.....	Furnace.
Unity Block Coal company.....	5	Darbyville.....	C. M. & St. P.	Slope.....	Long wall.....	Steam.....	Furnace.
Manufacturers Coal & Coke company.....	30	South of Centerville.....	K. & W. and C. R. I. & P.	Shaft.....	Room and pillar.	Steam.....	Fan.
H. H. Parker.....	30	Livingston.....	K. & W. and C. R. I. & P.	Shaft.....	Room and pillar.	Steam.....	Furnace.
Superior Coal company.....	30	South of Jerome.....	K. & W. and C. R. I. & P.	Shaft.....	Long wall.....	Horse.....	Furnace.
Dome-tic Coal company.....	30	Cincinnati.....	K. & W. and C. R. I. & P.	Shaft.....	Room and pillar.	Horse.....	Furnace.
White Oak Coal company.....	30	North of Exline.....	K. & W. and C. R. I. & P.	Shaft.....	Room and pillar.	Horse.....	Furnace.
Red Oak Coal company.....	30	North of Exline.....	K. & W. and C. R. I. & P.	Shaft.....	Room and pillar.	Horse.....	Furnace.
C. W. Tannell.....	30	East of Exline.....	K. & W. and C. R. I. & P.	Slope.....	Room and pillar.	Horse.....	Furnace.
J. R. Pettigrew.....	30	East of Seymour.....	K. & W. and C. R. I. & P.	Shaft.....	Long wall.....	Horse.....	Furnace.
Ira A. Guinn.....	30	Coal City.....	K. & W. and C. R. I. & P.	Drift.....	Room and pillar.	Horse.....	Furnace.
Walnut Grove Coal company.....	30	North of Numa.....	K. & W. and C. R. I. & P.	Shaft.....	Long wall.....	Horse.....	Furnace.
J. R. Wright.....	30	South of Centerville.....	K. & W. and C. R. I. & P.	Shaft.....	Room and pillar.	Horse.....	Furnace.
J. Sears.....	30	South of Centerville.....	K. & W. and C. R. I. & P.	Shaft.....	Room and pillar.	Horse.....	Furnace.
Wm. Smith.....	30	South of Centerville.....	K. & W. and C. R. I. & P.	Slope.....	Room and pillar.	Horse.....	Furnace.
J. W. Shirey.....	30	Centerville.....	K. & W. and C. R. I. & P.	Shaft.....	Room and pillar.	Horse.....	Furnace.
Happy Coal company.....	30	Centerville.....	K. & W. and C. R. I. & P.	Shaft.....	Room and pillar.	Horse.....	Furnace.
White Oak Coal company.....	30	Centerville.....	K. & W. and C. R. I. & P.	Shaft.....	Room and pillar.	Horse.....	Furnace.
Monitor Coal company.....	30	Centerville.....	K. & W. and C. R. I. & P.	Shaft.....	Room and pillar.	Horse.....	Furnace.

STATE MINE INSPECTORS.

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APPANOOSE COUNTY—CONTINUED.

Corporation, Firm or Operator.	Mine number.	Location of Mine.	Railroad Connection, If Any.	Kind of opening.	System of Working.	Power used.	Means of ventilation.
Star Coal company	Centerville	.....	Shaft	Room and pillar	Horse	Furnace.
Tris Coal company	North of Centerville	.....	Shaft	Room and pillar	Horse	Furnace.
John Ashley Coal company	Northwest of Centerville	.....	Shaft	Room and pillar	Horse	Furnace.
John Koenig	North of Centerville	.....	Shaft	Room and pillar	Horse	Furnace.
John Koenig	East of Centerville	.....	Slope	Long wall	Horse	Furnace.
Edwin & Barrett	East of Centerville	.....	Slope	Long wall	Horse	Furnace.
W. Milburn	Myrtle	.....	Slope	Long wall	Horse	Furnace.

MONROE COUNTY (Part).

Two years ago, by the Governor's order, the part of Monroe county bounded on the west by the Wabash railway and on the south by the main line of the C., B. & Q., was taken out of the first inspection district and added to the second. In the part of Monroe county, left in this district, thirteen mines are operated. Eleven of these have direct railroad connections and two have not. The latter, however, ship a considerable portion of their output by rail. The coal carrying railroads are the C., B. & Q., the Iowa Central and the C., M. & St. P. The Wabash railway has so far no mines in this county contributory to it.

The working time of the mines on the whole was considerably less last year than in the preceding year, only three mines showing gains in this respect. The mine of the Excelsior Coal Co. made a gain of eighteen days last year over the preceding year, mine No. 6 of the Phillips Fuel Co. gained seventy-eight days and mine No. 10, operated by the Whitebreast Fuel Co., of Illinois, gained sixteen days. These three mines employed last February 352 miners as against 281 in February, 1904, and the increase in their coal output last year over the year ending June 30, 1904, amounted to 37,091 tons. On the other hand, there was a marked loss in working time last year in the remaining important mines in the county. Mine No. 3 of the Wapello Coal Co. lost fifty-seven days; mine No. 4 of the same company, sixty-four days; No. 4 mine of the Smoky Hollow Coal Co., 24 days; No. 6 mine of the same company, thirty-seven days; mine No. 1 of the Hocking Coal Co., forty days; and mine No. 2 of the same company, thirty-nine days. Considering this serious drawback, these mines show but a comparatively small reduction in their coal output last year. In the year ending June 30, 1904, these mines produced 883,800 tons of coal, with 1,017 miners employed in February, 1904; last year they produced 850,333 tons of coal with 1,148 miners working last February. The gain in production made by the mines on the Milwaukee railroad, together with the gain coming from mine No. 3 of the Hocking Coal Co. more than balanced the losses shown, and the net increase in last year's coal production of the part of Monroe county assigned to this district over the preceding year amounted to 10,809 tons.

Six corporations control the above eleven railroad mines. The Smoky Hollow Coal Co. operates mines 4, 6 and 7, located southeast of Avery. Mine No. 7, although opened for more than two years, has been worked but little, but as No. 4 mine will soon be exhausted, preparations are now being made to develop the new mine. It has a fine slope opening, is ventilated by a fan, sixteen feet in diameter, and its general condition is good. Mine No. 6 belonging to the above company, is one of the largest mines in the State, employing an underground force of about 400 men and boys. To keep a

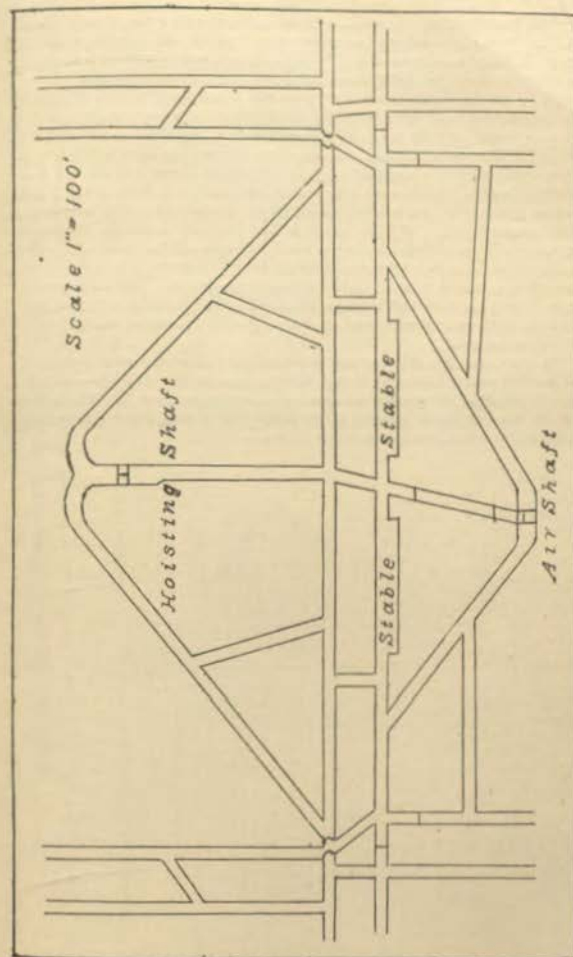
mine of this size always in good condition. In all its parts, is a serious problem but it has been fairly satisfactorily solved by the management in the past, and there is reasonable assurance that the future needs of the mine will be well cared for. The ventilation was nearly always found in satisfactory condition and due consideration was given to provide reasonable safety for the men employed in the mine. A separate traveling road, of fair dimensions and in good condition, parallels the main haulage road.

The Wapello Coal company operates mines 3 and 4, located respectively west and northwest of Hite-man. No. 4 mine is in good condition, well cared for and fairly well ventilated. The system adopted in this mine, and used for the first time on an extensive scale in Iowa, of leaving the main cross entries solid and driving cross entries, from which the rooms are turned, connecting them, has given entire satisfaction. The adoption of this system has resulted in materially reducing the danger from squeezes. It has permitted the installation of an economical and efficient haulage system and it has proved of especial benefit to the ventilation of the mine. In mine No. 3 considerable work has been done to develop the south side of the mine and increase its output and at the same time efforts have been made to better its sanitary condition. The south air course is being enlarged, stoppings have been rebuilt and coated with cement, the mine stables have been moved to safer and better locations and other work has been done to improve the mine and benefit the men working in it. In both mines separate traveling roads, paralleling the haulage roads, have been provided and they are maintained in good condition.

The need of thorough and careful prospecting of supposed coal territory, before commencing its actual development, is again shown by the mistake made in opening the mine of the Excelsior Coal Co. in its present location. The mine has not proved a success, its total coal production has been small and in all probability it will soon be abandoned.

Mine No. 6 of the Phillips Fuel Co. has been made safer and its ventilation has been improved by the sinking of an additional air shaft. It was in this mine two shotfired lost their lives on January 20, 1904. Another fatal accident occurred in it on March 23, 1905, when Thos. Davis, a miner, was killed by a fall of slate in his room. Considerable improvement will have to be made in the ventilating apparatus and airways to keep the ventilation of the mine in satisfactory condition.

Mine No. 10, operated by the Whitebreast Fuel Co., of Illinois, is well arranged for the rapid and economical handling of a large output of coal. The tower is steel, the hoisting is done by a pair of first motion engines and labor saving devices are used to advantage. The mine is ventilated by a force fan, fourteen feet in diameter, set in a steel casing. While its engine is of ample power, the fan itself shows weakness in construction, and, although partially successful efforts have been made to strengthen it, it can only be run safely at a rather low speed, and consequently its efficiency is kept at a correspondingly low point. In parts of the mine the roof is rather tender, but notwithstanding this, no fatal accidents occurred in it during the last two years. The mine has been in operation more than four years with an average force of 175 miners employed, and in all that time not a miner lost his life while at work in his place.



The Hocking Coal Co. operates three mines, located a few miles south of Albia. Mine No. 1 will soon be abandoned. When the present Hocking Coal Co. bought this mine it was in bad condition and all efforts to improve it since have been but indifferently successful. I believe little regret will be felt over the closing of this mine. Mine No. 2 has been greatly improved during the last year and a half, and considering its extent and the number of men employed (350) is in very fair condition. The management intends to install mechanical haulage and when that is done the mine's future coal output should show a material increase. Mine No. 3 was opened this year and promises to become one of the largest coal producers in the State. The coal is of fair thickness and of good quality. A steel tower will be erected, self-dumping cages will be used, a first motion hoisting engine is already in place and the usual labor saving devices will be provided. The mine is ventilated by a force fan, fourteen feet in diameter, which is capable of delivering nearly 1,000 cubic feet of air per revolution. The shaft bottom (see sketch) has been well arranged to facilitate the rapid handling of coal and the underground arrangements for the future successful ventilation of the mine are good.

It is not probable that any new mines will be opened this year in the part of Monroe county belonging to this district, and as the mines in operation are in condition to greatly increase their output to meet any immediate future demand, there appears to be little need to add, for the present at least, to the number of mines now working.

MINES IN MONROE COUNTY (PART), THEIR LOCATION, ETC.

Corporation, Firm or Operator.	Mine number.	Location of Mine.	Railroad Connection, if Any.	Kind of opening.	System of Working.	Power used.	Means of ventilation.
Wapello Coal company	3	1 mile west of Hiteaman	C. & Q.	Shaft.	Room and pillar.	Steam	Fan.
Wapello Coal company	4	3 miles northwest of Hiteaman	C. & Q.	Shaft.	Room and pillar.	Steam	Fan.
Smoky Hollow Coal company	4	Hynes	C. & Q.	Slope	Room and pillar.	Steam	Fan.
Smoky Hollow Coal company	6	4 miles southeast of Hynes	C. & Q.	Slope	Room and pillar.	Steam	Fan.
Smoky Hollow Coal company	7	4 miles southeast of Hynes	C. & Q.	Slope	Room and pillar.	Steam	Fan.
Excelsior Coal company	1	1½ miles west of Foster	C. M. & St. P.	Shaft.	Room and pillar.	Steam	Fan.
Phillips Fuel company	6	West of Foster	C. M. & St. P.	Shaft.	Room and pillar.	Steam	Fan.
Whitebreast Fuel company	10	Hilton	C. M. & St. P.	Shaft.	Room and pillar.	Steam	Fan.
Hocking Coal company	1	Hocking	Iowa Central	Shaft.	Room and pillar.	Steam	Fan.
Hocking Coal company	2	Southeast of Hocking	Iowa Central	Shaft.	Room and pillar.	Steam	Fan.
Hocking Coal company	3	2½ miles south of Albia	Iowa Central	Shaft.	Room and pillar.	Steam	Fan.
Star Coal company	3	Northwest of Albia	Iowa Central	Shaft.	Room and pillar.	Steam	Fan.
White Ash Coal company	1	South of Avery	.....	Slope	Room and pillar.	Steam	Fan.

LUCAS COUNTY.

The coal production of Lucas county for the year ending June 30, 1903 amounted to 269,539 tons, for the year ending June 30, 1904, it was 239,384 tons, during last year 165,256 tons were produced and conditions, as they exist at present, seem to warrant the prediction that, in all probability, the year just entered upon will show no increase and may even show a further decline in the coal output. This is undoubtedly an unfavorable showing, but it should not be taken as an indication that the coal mining industry of the county is in a bad way and that another collapse of the mining business, like that which occurred fourteen years ago, need be feared. The outlook for the future growth of the county's coal industry was never better than at this time, and it is certain that this temporary present decline will be amply compensated for in the near future.

The shrinkage in tonnage last year was largely due to the slack work prevailing and the closing down of the Big Hill mine last April.

The principal mine in the county is located at Cleveland and is operated by the Whitebreast Fuel company of Illinois. The mine is provided with good machinery of ample power to take care of a large coal output, has a steel tippie and its safety devices and other equipments are in good order. The shaft is 321 feet deep. Motor haulage is used with satisfactory results. The mine is ventilated by a force fan twenty feet in diameter, set in a steel casing. The fan furnishes a fair air volume, but as the mine is large great care is necessary to keep the ventilation of all its parts in satisfactory condition. The difficulty is made greater by the existence of an extensive fault, running in a southwesterly direction and dividing the mine in two parts. The north side is now fairly well ventilated and the south will be improved in this respect. Work is now going on to clean and enlarge the south air course with the view of not only benefiting the ventilation but to also provide an available and safe traveling way, apart from the main haulage road, for the men working in the south part of the mine.

As stated above the Big Hill mine at Lucas was closed down last April. The cars, rails, pumps, etc., were removed from the mine, and it appeared that its abandonment was complete. Recently, however, arrangements were made to reopen the mine, and the indications are that it will be in operation again soon.

The Inland Fuel Company's mine, located north of Chariton, is in good condition.

In the above three mines the lower seam of coal is worked. Its average thickness is about five feet. The veins worked in the few small local mines in the county belong to the upper coal measures and their thickness seldom exceeds two feet.

The number of fatal accidents was less during the last two years than during the preceding two years. In the biennial period ending June 30, 1903, five fatal accidents occurred in the mines of the county, while but two occurred in the biennial period just closed.

MINES IN LUCAS COUNTY, THEIR LOCATION, ETC.

Corporation, Firm or Operator.	Mine number.	Location of Mine.	Railroad Connection, if Any.	Kind of opening.	System of Working.	Power used.	Means of ventilation.
Whitebreast Fuel company.	4	Cleveland	C, B. & Q.	Shaft.	Room and pillar.	Steam.	Fan.
Big Hill Fuel company.		Lucas	C, B. & Q.	Shaft.	Room and pillar.	Steam.	Fan.
Inland Fuel company.		8½ miles northeast of Chariton.		Shaft.	Room and pillar.	Steam.	Fan.
Skidmore Bros.		Northeast of Lucas.		Shaft.	Long wall.	Horse.	Furnace.

WAYNE COUNTY.

The coal output of Wayne county is at present produced by ten mines two of them having shipping facilities and eight doing a local business. The two shipping mines are located at Seymour, five of the local mines are located south of Confidence, two about five miles west and southwest of Seymour and one near Harvard. The Big Jim mine, connected with the C., M. & St. P. Railroad and operated by the Numa Block Coal Co. produced more coal during the last two years than any other mine in the Appanoose-Wayne field. At this mine the coal was reached at a depth of 202 feet. The hoisting is done by first motion engines and self-dumping cages and a box car loader facilitates the handling of the mine's output. A fan sixteen feet in diameter ventilates the workings satisfactorily. The Sunshine mine, connected with the Rock Island Railroad, was purchased about three years ago from the Seymour Coal Co. by the Numa Block Coal Co. At the time the purchase was made and for some time afterwards the mine was in bad condition, but the shafts have since been enlarged and timbered throughout, new cages have been provided, the underground workings have been improved and the mine's coal output has been materially increased. The ventilation of the mine is better than formerly and there is reasonable assurance that further improvement in that direction will be made.

Of the local mines the Frye mine south of Confidence and the Walker mine, five miles southwest of Seymour, are the best equipped. At both mines steam power is used, the mine buildings are of a substantial character and the safety devices, required by law, are in good condition.

The mines in the country are worked long-wall and the mine workings are fairly safe. While there were two fatal accidents during the last two years, none occurred at the face. John McCue was killed in mine No. 3 of the Numa Block Coal company on February 20, 1904, while crossing the shaft, and Ed Green lost his life on January 6, 1905, in the tippie of the Big Jim mine by being crushed between the slack car and a heavy timber.

The yearly coal output of the county was greater last year than ever before and for the first time exceeded 100,000 tons.

MINES IN WAYNE COUNTY, THEIR LOCATION, ETC.

Corporation, Firm or Operator.	Mine number.	Location of Mine.	Railroad Connection, If Any.	Kind of opening.	System of Working.	Power used.	Means of ventilation.
Numa Block Coal company.....	202	1 mile east of Seymour	C., M. & St. P.	Shaft.	Long wall	Steam	Fan.
Numa Block Coal company.....		Seymour	C., M. & St. P.	Shaft.	Long wall	Steam	Fan.
J. L. Slack.....		North of Sewal	C., M. & St. P.	Shaft.	Long wall	Horse	Furnace.
E. McCracken.....		5 miles west of Seymour		Shaft.	Long wall	Steam	Furnace.
Sam Walker.....		4 miles southwest of Seymour		Shaft.	Long wall	Steam	Furnace.
E. A. Sipes.....		4 miles south of Confidence		Shaft.	Long wall	Steam	Furnace.
A. H. Hayhurst.....		3 1/2 miles south of Confidence		Shaft.	Long wall	Horse	Furnace.
John Hayhurst.....		South of Confidence		Shaft.	Long wall	Horse	Furnace.
L. Frye.....		South of Confidence		Shaft.	Long wall	Steam	Fan.

TAYLOR COUNTY.

The principal mines in Taylor county are located near New Market and three of these have switches off the Burlington road. In the northwestern part of the county three or four small mines are operated during the fall and winter, but their coal output is limited. The coal vein is about sixteen inches thick, is reached by shafts and worked long-wall. The underground conditions are conducive to safe mining and accidents in the mines are rare, none of a serious nature having occurred in the last two years. Hoisting is done by horse power entirely and the apparatus used is now in fairly satisfactory condition. Ventilation is produced by small furnaces and not difficult to maintain.

The returns show that the coal output of the county has not been as great last year and the year before as in former years. Various causes have contributed to this end, but the principal one, I believe, was the opening of the mines near Clarinda.

MINES IN TAYLOR COUNTY, THEIR LOCATION, ETC.

Firm or Operator.	Mine number.	Location of Mine.	Railroad Connection, if Any.	Kind of opening.	System of Working.	Power used.	Means of ventilation.
Tomlinson & Pace	1	East of New Market.	C, B, & Q.	Shaft.	Long wall.	Horse.	Furnace.
Campbell Coal Co.	2	East of New Market.	C, B, & Q.	Shaft.	Long wall.	Horse.	Furnace.
Campbell Coal Co.		East of New Market.	C, B, & Q.	Shaft.	Long wall.	Horse.	Furnace.
Wm. Browning.		East of New Market.	C, B, & Q.	Shaft.	Long wall.	Horse.	Furnace.
N. Easter.		2 miles east of New Market.		Shaft.	Long wall.	Horse.	Furnace.
H. Ankeny		6 miles north of New Market.		Shaft.	Long wall.	Horse.	Furnace.
L. Ankeny		6 miles north of New Market.		Shaft.	Long wall.	Horse.	Furnace.
F. Heller.		6 miles north of New Market.		Shaft.	Long wall.	Horse.	Furnace.
W. E. Rogers		Henshaw.		Shaft.	Long wall.	Horse.	Furnace.

PAGE COUNTY.

The four mines in this county, located west and southwest of Clarinda and within a few miles of that town, produced during the last two years a little more than thirty-four thousand tons of coal. They have no railroad facilities and have done no shipping of coal by rail, but they have a good home market, and in the winter time the demand often exceeds the supply.

The vein worked averages less than eighteen inches in thickness and is of fair quality. Shafts of considerable depth are necessary to reach the coal, and this, together with the thinness of the coal, makes mining rather expensive.

The equipment of the mines compares favorably with the equipments of mines of like character elsewhere. The safety devices in use conform to the requirements of the law. Second openings have been made at all the mines and they are kept in available condition. The hoisting apparatus is kept in fair order. Ventilation is produced by small furnaces and is nearly always satisfactory.

Favorable natural conditions tend to make the work of the miner comparatively safe, yet two fatal accidents occurred in this county about a year and a half ago. One in a small mine located about five miles south of Clarinda, the other in the Johnston mine west of the county seat. No serious accident has occurred in any of the mines in Page county in the last year and a half.

MINES IN PAGE COUNTY, THEIR LOCATION, ETC

Firm or Operator.	Mine number.	Location of Mine.	Railroad Connection, if Any.	Kind of opening.	System of Working.	Means of ventilation.	Power used.
Johnston & Co.	1	3 miles west of Clarinda	.....	Shaft	Long wall	Horse	Furnace.
Van Arsdol & Woods	.....	West of Clarinda	.....	Shaft	Long wall	Horse	Furnace.
J. W. Berry Coal company.	.....	2 miles southwest of Clarinda	.....	Shaft	Long wall	Horse	Furnace.
J. S. Moore.	.....	2½ miles southwest of Clarinda	.....	Shaft	Long wall	Horse	Furnace.

ADAMS COUNTY.

On account of the smallness of the coal seam and the fact that no mines have been developed near the railroad, no coal is shipped from the county by rail, and as there are but few factories and no large coal consuming concerns in the county, the market is limited to the demands for home use and consequently the yearly coal production has never been large. In the aggregate, however, since the time mining first commenced in the county, until now, Adams county has made a fair record. While absolutely correct data are not available, I believe it can be safely assumed that its coal production during the last thirty years has amounted to about 300,000 tons.

The coal seam averages about sixteen inches in thickness, fairly free from impurities. It is reached by shallow shafts and worked long-wall. While the equipment of the mines is generally of a rather crude character, the safety of the miners is not neglected. Mining so far has been carried on only in the western half of the county, along the Nodaway river and its branches and the principal mining centers are near Carbon, Eureka, Briscoe and Hoyt.

No extensive systematic efforts have been made to discover the existence of available seams of coal below the one now worked and it is problematical if any can be found. At Carbon a hole was put down to the depth of more than 400 feet. The work was done with a core drill. The strata drilled through consisted principally of lime shale, limestone and sandstone, and no other indications whatever of coal were found.

As most of the work in the mines of this county is done during the colder months of the year, and as the mine workings are never extensive and the number of men working in each mine small, little difficulty is experienced in keeping the mine ventilation in satisfactory condition.

Owing to favorable natural conditions and the method of working the coal, accidents to miners of a serious nature are very rare, and none has occurred during the last two years.

MINES IN ADAMS COUNTY, THEIR LOCATION, ETC.

Firm or Operator.	Mine number.	Location of Mine.	Railroad Connection, if Any.	Kind of opening.	System of Working.	Power used.	Means of ventilation.
Chas. Crist.....		Eureka.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
Jas. Hartshorn.....		Eureka.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
J. M. Henton.....		Eureka.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
Ed. Amdor.....		North of Carbon.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
M. Jones.....		Carbon.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
J. F. Rush.....		Carbon.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
J. F. Wild.....		Carbon.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
Collins & Barker.....	2	Carbon.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
H. Houck.....		Carbon.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
Herm. Day.....		West of Carbon.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
Jas. Gammell.....		West of Carbon.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
Eclipse Coal company.....		Brisco.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
C. L. Harlan.....		Brisco.....		Shaft.....	Long wall.....	Horse.....	Furnace.....
Mason & Dougherty.....		Northwest of Nodaway.....		Shaft.....	Long wall.....	Horse.....	Furnace.....

List of corporations, firms and individuals operating mines in the first district, their postoffice address, number of mines operated by them in the district and shipping facilities, if any.

Corporation, Firm or Individual.	Address.	No. of mines.	Shipping Facilities.
Scandinavian Coal company.....	Centerville.....	2	Keokuk & Western.
Appanoose Coal and Fuel company..	Diamond.....	3	Keokuk & Western and Chicago, Milwaukee & St. Paul
Walnut Block Coal company.....	Centerville.....	1	Keokuk & Western.
Phoenix Coal company.....	Brazil.....	1	Keokuk & Western.
Centerville Block Coal company.....	Centerville.....	6	Keokuk & Western, Chicago, Rock Island & Pacific and Iowa Central
Tipton Co-operative Coal Co.....	Brazil.....	1	Keokuk & Western.
Peacock Coal company.....	Brazil.....	1	Keokuk & Western.
Oriental Coal company.....	Centerville.....	2	Keokuk & Western.
Keystone Coal company.....	Centerville.....	1	Keokuk & Western.
Anchor Coal company.....	Centerville.....	3	Keokuk & Western and Chicago, Rock Island & Pacific.
Dewey Coal company.....	Centerville.....	1	Keokuk & Western.
Hocking Valley Coal company.....	Cincinnati.....	2	Chicago, Burlington & Kansas City.
Mendota Coal and Mining company.	Cincinnati.....	2	Chicago, Burlington & Kansas City.
Thistle Coal company.....	Cincinnati.....	3	Chicago, Burlington & Kansas City.
Exline Coal company.....	Exline.....	2	Chicago, Burlington & Kansas City.
Iowa Block Coal company.....	Centerville.....	1	Chicago, Burlington & Kansas City.
Illinois and Iowa Fuel company.....	Ottumwa.....	1	Iowa Central.
Numa Block Coal company.....	Seymour.....	3	Chicago, Rock Island & Pacific and Chicago, Milwaukee & St. Paul.
Prairie Block Coal company.....	Centerville.....	1	Chicago, Rock Island & Pacific.
Center Coal company.....	Centerville.....	1	Chicago, Rock Island & Pacific.
Consumers Coal company.....	Cedar Rapids.....	1	Chicago, Milwaukee & St. Paul.
Big Jo Coal company.....	Harkes.....	1	Chicago, Milwaukee & St. Paul.
F. H. Juckett Coal company.....	Cedar Rapids.....	1	Chicago, Milwaukee & St. Paul.
Peerless Coal company.....	Centerville.....	6	Chicago, Milwaukee & St. Paul.
Egypt Coal company.....	Mystic.....	1	Chicago, Milwaukee & St. Paul.
Artie Coal company.....	Mystic.....	1	Chicago, Milwaukee & St. Paul.
Acken Coal company.....	Mystic.....	2	Chicago, Milwaukee & St. Paul.
Mystic Coal company.....	Mystic.....	1	Chicago, Milwaukee & St. Paul.
J. Helme Coal company.....	Mystic.....	1	Chicago, Milwaukee & St. Paul.
Diamond Block Coal company.....	Mystic.....	8	Chicago, Milwaukee & St. Paul.
Cedar Rapids Fuel Co.....	Cedar Rapids.....	1	Chicago, Milwaukee & St. Paul.
Beggs Coal company.....	Mystic.....	1	Chicago, Milwaukee & St. Paul.
Orr Bros. Coal company.....	Mystic.....	1	Chicago, Milwaukee & St. Paul.
Star Coal company.....	Rathbun.....	1	Chicago, Milwaukee & St. Paul.
Unity Block Coal company.....	Darbyville.....	1	Chicago, Milwaukee & St. Paul.
Manufacturers Coal & Coke company	Centerville.....	1	Keokuk & Western and Chicago Rock Island & Pacific.
Domestic Coal company.....	Cincinnati.....	1	
White Oak Coal company.....	Exline.....	1	
Red Oak Coal company.....	Exline.....	1	
O. W. Tunnell.....	Exline.....	1	
J. R. Pettigrew.....	Seymour.....	1	
Ira A. Guinn.....	Coal City.....	1	
Walnut Grove Coal company.....	Numa.....	1	Chicago, Rock Island & Pacific.
J. R. Wright.....	Centerville.....	1	
J. Sears.....	Centerville.....	1	
Wm. Smith.....	Centerville.....	1	
J. W. Shirey.....	Centerville.....	1	

LIST OF CORPORATIONS, ETC.—CONTINUED.

Corporation, Firm or Individual.	Address.	No. of Mines.	Shipping Facilities.
Happy Coal company.....	Centerville.....	1	
White Oak Coal company.....	Centerville.....	1	
Monitor Coal company.....	Centerville.....	1	
Star Coal company.....	Centerville.....	1	
Trio Coal company.....	Centerville.....	1	
Rock Valley Coal company.....	Centerville.....	1	
John Schrum.....	Centerville.....	1	
John Koontz.....	Mystic.....	1	
Elgin & Barrett.....	Mystic.....	1	
E. Bittinger & Co.....	Mystic.....	1	
Wm. Milburn.....	Hiteman.....	2	Chicago, Burlington & Quincy.
Wapello Coal company.....	Avery.....	3	Chicago, Burlington & Quincy.
Smoky Hollow Coal company.....	Albia.....	1	Chicago, Burlington & Quincy.
Star Coal company.....	Avery.....	1	Chicago, Burlington & Quincy.
White Ash Coal company.....	Foster.....	1	Chicago, Milwaukee & St. Paul.
Excelsior Coal company.....	Ottumwa.....	1	Chicago, Milwaukee & St. Paul.
Phillips Fuel company.....	Hocking.....	3	Iowa Central.
Hocking Coal company.....	Ottumwa.....	2	Chicago, Milwaukee & St. Paul and Chicago, Burlington & Quincy.
Whitebreast Fuel Co. of Illinois			
Inland Fuel company.....	Chariton.....	1	
J. L. Slack.....	Sewal.....	1	
Sam Walker.....	Seymour.....	1	
E. A. Sipes.....	Promise City.....	1	
A. H. Hayhurst.....	Promise City.....	1	
L. Frye.....	Promise City.....	1	
John Hayhurst.....	Promise City.....	1	
Tomlinson & Pace.....	Newmarket.....	2	Chicago, Burlington & Quincy.
Campbell Coal company.....	Newmarket.....	1	Chicago, Burlington & Quincy.
Wm. Browning.....	Newmarket.....	1	
N. Easter.....	Newmarket.....	1	
H. Ankeny.....	Newmarket.....	1	
I. Ankeny.....	Newmarket.....	1	
F. Heller.....	Villisca.....	1	
W. E. Rogers.....	Clarinda.....	1	
Johnston & Company.....	Clarinda.....	1	
Van Arsdol & Woods.....	Clarinda.....	1	
J. W. Berry Coal company.....	Clarinda.....	1	
J. S. Moore.....	Clarinda.....	1	
Chas. Christ.....	Corning.....	1	
J. M. Henton.....	Corning.....	1	
Ed. Amdor.....	Carbon.....	1	
M. Jones.....	Carbon.....	1	
J. F. Ruth.....	Carbon.....	1	
J. F. Wild.....	Carbon.....	1	
Collins & Barker.....	Carbon.....	1	
H. Houck.....	Nodaway.....	1	
H. Day.....	Nodaway.....	1	
Jas. Gammell.....	Nodaway.....	1	
Masan & Daugherty.....	Nodaway.....	1	
Eclipse Coal company.....	Briscoe.....	1	
C. L. Harlan.....	Cumberland.....	1	

SECOND DISTRICT.

LETTER OF TRANSMITTAL.

HON. ALBERT B. CUMMINS, Governor of Iowa.

Sir,—I have the honor to submit herewith, my first report as Mine Inspector of the Second District covering the biennial period ending June 30, 1905.

Very respectfully,

JAMES A. CAMPBELL,

Inspector Second District.

REPORT OF SECOND DISTRICT.

During the thirteen months of my service in the Second District, I have visited 173 mines, and, with but few exceptions, I found the safety and sanitary conditions of the mines to be reasonably satisfactory, and in mines where it was necessary to make changes to better the condition of the mine I found the owner ready and willing to comply with the orders of the inspector, and to use all efforts to comply with the mining laws.

There has been a large amount of prospecting and development work done in this district the last year, and it is evident from the number of new mines under construction, and more to follow, that there will be a natural increase in the coal tonnage from this district in the future.

There have been a number of mines abandoned in the past two years, however the number of new mines opened will more than offset the ones abandoned, particularly so in tonnage, as several of the mines that have gone out of business depended entirely upon the local trade, and the majority of the new mines that are under construction will do a shipping business and have a large tonnage.

It gives the inspector pleasure to note the care that is constantly exercised by the miners and mine owners to prevent accidents in the mines.

There have been fifty-five scales inspected and tested and out of the above number twenty-seven were found to be weighing incorrectly and were condemned. In all cases the mine owner showed a disposition to adjust the scales and put them into a position to weigh correctly.

FATAL ACCIDENTS IN SECOND DISTRICT FOR THE TWO YEARS ENDING JUNE 30, 1905.

CARL J. PETERSON.

A miner employed at mine No. 10 of the Consolidation Coal Company, Monroe county, was fatally injured on August 15, 1903, by a fall of slate. One wrist and one leg was broken and he received internal injuries from which he died two hours later.

CHARLES WINCHELL.

A driver in the employ of the Black Diamond Coal Company was instantly killed on September 30, 1903. He was blasting coal when slate fell crushing him and killing him instantly.

DAVID HOPKINS.

A shotfirer in the employ of the Consolidation Coal Company of Monroe county, was killed on December 22, 1903, while performing his duties as shotfirer. He had lighted shot when shot came through pillar tearing him all to pieces.

EMMET GRIGGS.

Top hand and chunker for the What Cheer Fuel Company at mine No. 1, Keokuk county, was killed on December 28, 1903, while working for the above company. He was trying to stop a coal rack partially loaded with coal when he was knocked down and car ran onto him. One leg was mangled below the knee; flange of wheel cut into groin and injured him internally. He died same day of accident.

GEORGE W. COURTNEY.

Miner, employed by the Waddell Coal Company of Wapello county, was killed by a fall of slate in above mine on October 27, 1903. He died about twenty minutes after accident occurred.

BIRD PARKER.

A miner, employed in mine No. 11, of the Consolidated Coal Company of Monroe county, was killed on July 1, 1904, by a fall of slate. He was at work in his room at the time. His neck was broken and head mashed and from appearances he must have been instantly killed.

W. A. SMITH.

A nightman, employed in mine No. 10, of the Consolidation Coal Company of Buxton, was fatally injured by a fall of slate on June 14, 1904. His skull was fractured in two places and death resulted from his injuries two hours after the accident.

WILBUR J. ELY.

A blacksmith, employed by the Spring Creek Coal Company of Mahaska county, was killed on April 20, 1904, by falling from the top of a tower. timbers caught his glove and caused him to fall.

LEVI WOUDI.

A cager, employed by the Dunreath Coal Company, was instantly killed at the above mine on July 15, 1904, by being caught in the cage and carried to the ground landing and dropped back into the shaft. He had signaled to hoist and then afterwards tried to put car on cage and was caught by the cage and was carried to the top of shaft as stated above.

DAVID JACKSON.

David Jackson, a miner employed by the Consolidation Coal Company in mine No. 10 was killed in said mine on the morning of August 20, 1904. He was waiting for shot to go off, and when shot went off it jarred down some slate which fell on him, injuring him so that he died within an hour.

JOHN KOELMAN.

John Koelman, a driver employed in the mine of the Bolton & Hoover Coal Company of Mahaska county, was killed on July 13, 1904, by being run over by a loaded car in the mine. He had failed to sprag car, and in hooking up mule got in front of car and it ran over him.

CHARLES BLANQUERT.

Charles Blanquert, a shotfirer in the employ of the Crescent Coal Company of Mahaska county, was killed on the afternoon of January 11, 1905, while engaged in the performance of his duties as shotfirer. Mr. Blanquert was killed by the shot making a break through into the place where he was when the shot went off. He was killed instantly.

OSCAR NELSON.

April 30, 1905, Oscar Nelson was killed by a fall of slate while engaged in mining coal in the mine at Coalfield. The accident resulting in his death was caused by a fall of slate. Mr. Nelson was working alone at the time, and no one saw the slate fall. He was one of the oldest miners in Coalfield. He lived for about twenty-four hours after the accident.

PORTER GLENN.

Porter Glenn, a miner in the employ of the Mammoth Vein Coal Company of Marion county, was killed on May 19, 1905, by a fall of roof in his room while engaged in his work in one of the mines of the above company.

Total Accidents in District No. 2 for Two Years Ending June 30, 1905.

Date,	Name of Deceased	Occupation.	Cause of Death.	Employed by—	County.
August 15, 1903	Carl J. Peterson.	Miner	Fall of slate	Consolidation Coal company	Monroe.
September 30, 1903	Charles Winchell.	Driver	Fall of slate	Black Diamond Coal company	Mahaska.
December 22, 1903	David Hopkins.	Shotfirer	Flying coal.	Consolidation Coal company	Monroe.
December 28, 1903	Emmet Griggs.	Top hand	Run over by car	What Cheer Fuel company	Keokuk.
October 27, 1903	Geo. W. Courtney.	Miner	Fall of slate	Waddell Coal company	Mahaska.
April 20, 1904	Wilbur J. Ely.	Blacksmith	Falling from top of tower.	Spring Creek Coal company	Mahaska.
June 1, 1904	Bird Parker.	Miner	Fall of slate	Consolidation Coal company	Monroe.
June 14, 1904	W. A. Smith.	Nightman	Fall of slate	Consolidation Coal company	Monroe.
July 15, 1904	Levi Wood.	Cager	Caught by cage	Dunreath Coal company	Marion.
August 20, 1904	David Jackson.	Miner	Fall of slate	Bolton & Hoover Coal Co.	Monroe.
July 13, 1904	John Koelmann.	Driver	Run over by car	Crescent Coal company	Mahaska.
January 11, 1905	Charles Blanquert.	Shotfirer	Flying coal	Coalfield Mine	Monroe.
April 30, 1905	Oscar Nelson	Miner	Fall of slate	Mammoth View Coal Co.	Marion.
May 19, 1905	Porter Glenn	Miner	Fall of slate		

LIST OF NON-FATAL ACCIDENTS IN THE SECOND DISTRICT FOR THE TWO YEARS ENDING JUNE 30, 1904.

July 18, 1903, Robert Roberts, bellman, two bones in arm broken in Consolidation Coal Company's mine in Monroe county.

July 22, 1903, T. Balzer, refuse mover, Crescent Coal Company, Mahaska county, hand bruised by fall of slate; was necessary to amputate hand.

August 7, 1903, E. T. Ferrand, miner, Illinois & Iowa Fuel Company, Wapello county, leg broken by fall of slate.

August 28, 1903, George Lee, cager, at mine No. 10, Consolidation Coal Company, Monroe county, engineer lost control of engine and cage dropped to bottom of shaft. Thigh was fractured.

August 28, 1903, John Nichols, miner, Consolidation Coal Company, Monroe county, cage dropped to bottom of shaft. Knee dislocated.

August 28, 1903, Elias Swanson, miner, Consolidation Coal Company, Monroe county, cage dropped to bottom of shaft. Both ankles injured and injured internally.

August 28, 1903, Alex Beard, miner, Consolidation Coal Company, Monroe county, engineer lost control of engine and cage dropped to bottom of shaft. Fractured ankle and breast injured.

September 10, 1903, J. C. Slaughter, carpenter, Illinois & Iowa Fuel Company, Wapello county. Fell off scaffold; arm broken.

July 24, 1903, Walter Johnson, coupler, Consolidation Coal Company, Monroe county. Hand mashed and one bone of leg broken.

September 22, 1903, J. Spears, miner, hand crushed by fall of slate, Consolidation Coal Company, Monroe county.

September 23, 1903, C. M. Jones, miner, bruised through bowels by fall of slate in mine of Consolidation Company, Monroe county.

October 9, 1903, Simon Harris, miner, Consolidation Coal Company, Monroe county. Fracture of spine caused by fall of slate.

October 30, 1903, C. J. Johnson, miner, Illinois & Iowa Fuel Company, Wapello county. Crushed by fall of slate.

October 23, 1903, Sampson Hyde, coupler, What Cheer Fuel Company, Keokuk county. Crushed arm by being caught between top of cage and cross arm.

November 26, 1903, W. H. Millhouse, miner, Brown Bros. Mine, Wapello county. Leg broken by fall of slate.

November 25, 1903, Elijah Miller, cager, Consolidation Coal Company, Monroe county. Slipped under cage, right foot mashed and bones broken in foot.

December 5, 1903, W. W. Carey, boss driver, Consolidation Coal Company, Monroe county, was riding on air locomotive and was caught by trap door. Two ribs broken.

December 11, 1903, Richard Graves, night driver, Consolidation Coal Company, Monroe county. Car ran over his foot, mashing bones in heel.

December 14, 1903, A. Meyers, timberman, Consolidation Coal Company, Monroe county. Ankle dislocated and fracture of one leg bone at ankle. Fall of slate.

January 4, 1904, James Dalziel, miner, What Cheer Fuel Company, Keokuk county. Caught under cage. Head bruised and back injured.

January 5, 1904, James Speoe, miner, Illinois and Iowa Fuel Company, Wapello county. Crushed by fall of slate.

January 18, 1904, John Black, gasoline engineer, Consolidation Coal Company, Monroe county. Hand caught in cog wheel. Mashed thumb and first finger off; also bones in wrist so that hand had to be taken off.

January 19, 1904, James Cheves, miner, leg broken by fall of slate in mine of Consolidation Coal Company, Monroe county.

February 12, 1904, R. J. Barber, driver, Consolidation Coal Company, Monroe county. Caught between loaded car and roof. Arm broken.

February 16, 1904, Robert Vaughner, timberman, Consolidation Coal Company, Monroe county. Both legs broken below knees by fall of slate.

March 3, 1904, Joe Melcher, miner, Oskaloosa Coal Mining Company, Mahaska county. Back badly bruised and hip dislocated by fall of slate.

March 4, 1904, Thomas Legon, night driver, Consolidation Coal Company, Monroe county. Was on top of car of timbers when head hit roof. Fracture of skull.

March 6, 1904, S. A. Gantz an electrician, Consolidation Coal Company, Monroe county. Leg broken; fall of slate.

May, 1904, James Smith, miner, Morgan Valley Coal Company, Marion county. He was putting in cut when a piece of sulphur chip struck his eye destroying the sight.

June 1, 1904, Mike Genochis, miner, Bear Creek Coal Company, Wapello county. Badly bruised by fall of slate.

June 2, 1904, E. E. Stuck, miner, Crescent Coal Company, Mahaska county. Head cut and leg bruised by fall of slate.

June 7, 1904, J. C. Jones, miner, Consolidation Coal Company, Monroe county. Foot smashed by fall of slate.

No date, John Coulter, miner, Spring Creek Coal Company, Mahaska county. Ankle bones broken by fall of slate.

June 24, 1904, Roger Griffith, miner, Illinois and Iowa Fuel Company, Wapello county. Crushed by fall of slate.

July 15, 1904, Pete Hanev, trapper, arm broken by being caught between car and rib of coal in mine of Dunreath Coal Company, Marion county.

July 11, 1904, William Mason, miner, leg broken by fall of slate in mine of Consolidation Coal Company, Buxton, Monroe county.

August 11, 1904, John Darbollo, track layer, both legs broken by flying coal in mine of Garfield Coal Company, Mahaska county.

August 22, 1904, John Hale, driver, hand mashed by being caught by car in mine of Consolidation Coal Company, Monroe county.

August 23, 1904, Charles Rose, shotfirer, both upper and lower jawbone broken by flying coal in mine of Consolidation Coal Company, Monroe county.

September 1, 1904, G. W. Miller, miner, leg broken by fall of slate in mine of Consolidation Coal Company, Monroe county.

September 17, 1904, Fred Grant, miner, hand mashed by fall of slate in mine of Consolidation Coal Company, Monroe county.

September 27, George Crosby, miner, leg broken by fall of slate in mine of What Cheer Fuel Company, Keokuk county.

September, 1904, Andy Boduar, miner, leg broken by fall of slate in mine of Mammoth Vein Coal Company, Marion county.

October 9, 1904, Sterling Murray, timberman, leg broken by car door falling on him at mine of Consolidation Coal Company of Monroe county.

October 26, 1904, Charles Garland, driver, foot mashed by car running over his foot, Consolidation Coal Company, Monroe county.

October 31, 1904, E. L. Shaw, miner, arm broken by flying coal from shot in mine of Consolidation Coal Company, Monroe county.

November 6, 1904, Rees Matthews, miner, cut on head by fall of slate in mine of Ottumwa Brick and Construction Company, Wapello county.

November 6, 1904, David Matthews, miner, body bruised by fall of slate in mine of Ottumwa Brick and Construction Company, Wapello county.

December 1, 1904, Morgan Phillips, miner, leg broken by fall of slate in mine of Ottumwa Brick and Construction Company, Wapello county.

December 26, 1904, Elmer George, miner and driver, leg broken by fall of slate in mine of Ottumwa Brick and Construction Company, Wapello county.

December 12, 1904, C. S. Stone, driver, leg broken by fall of slate in mine of Consolidation Coal Company, Monroe county.

December 17, 1904, Isaac Thomas, miner, internally injured by fall of slate in mine of Consolidation Coal Company, Monroe county.

January, 1905, Hailey Morris, miner, back injured by fall of slate in mine of Lost Creek Fuel Company, Mahaska county.

January 2, 1905, Mike Sirack, cager, foot broken by being run over by car, in mine of Consolidation Coal Company, Monroe county.

January 9, 1905, Mike Brokash, driver, leg broken by being caught by car in mine of Consolidation Coal Company, Monroe county.

January 26, 1905, Sam Rhoder, Jr., miner, collar bone broken by fall of slate in mine of Consolidation Coal Company, Monroe county.

February 6, 1905, Herman Sugar, driver, leg broken by fall of slate in mine of Consolidation Coal Company, Monroe county.

February 6, 1905, T. P. Price, miner, back injured by fall of slate in mine of Phillips Fuel Company, Wapello county.

February, 1905, James Howard, driver, back hurt, fell off chain between car and rib in mine of Mammoth Vein Coal Company, Marion county.

March, 1905, John W. Davis, miner, ribs broken by fall of slate in mine of Mammoth Vein Coal Company, Marion county.

March 14, 1905, Mike Swak, miner, leg broken by fall of slate in mine of Consolidation Coal Company, Monroe county.

April, 1905, Andy Elo, Jr., miner, shoulder dislocated by fall of slate in mine of Mammoth Vein Coal Company, Marion county.

May 4, 1905, George Payton, miner, bruised about the head by fall of slate in mine of Rex Fuel Company, Marion county.

June 9, 1905, Sam Scott, driver, body bruised by being knocked off of car at mine of Raven Coal Company, Mahaska county.

Non-fatal accidents in District No. 2, for two years ending June 30, 1905.

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TWELFTH BIENNIAL REPORT OF THE

Date.	Name.	Occupation.	Character of Injury.	Cause of Accident.	Mine Where Accident Occurred.	County.
July 18, 1903	Robert Roberts...	Bellman	Arm broken		Consolidation Coal company	Monroe.
July 22, 1903	T. Balzer	Refuse mover	Hand bruised, necessary to amputate hand	Fall of slate	Crescent Coal Co.	Mahaska.
July 24, 1903	Walter Johnson	Coupler	Hand Mashed	Fall of slate	Consolidation Coal company	Monroe.
August 7, 1903	E. T. Ferrand	Miner	Broken leg	Fall of slate	Illinois and Iowa Fuel company	Wapello.
August 28, 1903	George Lee	Cager	Broken leg	Engineer lost control of engine and cage dropped to bottom of shaft	Consolidation Coal company	Monroe.
August 28, 1903	John Nichols	Miner	Knee dislocated	Engineer lost control of engine and cage dropped to bottom of shaft	Consolidation Coal company	Monroe.
August 28, 1903	Elias Swanson	Miner	Both ankles injured	Engineer lost control of engine and cage dropped to bottom of shaft	Consolidation Coal company	Monroe.
September 22, 1903	J. Spears	Miner	Hand crushed	Fall of slate	Consolidation Coal company	Monroe.
September 23, 1903	C. M. Jones	Miner	Body bruised	Fall of slate	Consolidation Coal company	Monroe.
August 28, 1903	Alex Beard	Miner	Fractured ankle	Engineer lost control of engine and cage dropped to bottom of shaft	Consolidation Coal company	Monroe.
September 10, 1903	J. C. Slaughter	Carpenter	Arm broken	Fell off scaffold	Consolidation Coal company	Monroe.
October 9, 1903	Simon Harris	Miner	Fracture of spin	Fall of slate	Illinois and Iowa Fuel company	Wapello.
October 23, 1903	Sampson Hyde	Coupler	Body crushed	Caught by cage	Consolidation Coal company	Monroe.
October 30, 1903	C. J. Johnson	Miner	Body crushed	Fall of slate	What Cheer Fuel company	Keokuk.
November 26, 1903	W. H. Millhouse	Miner	Leg broken	Fall of slate	Illinois and Iowa Fuel company	Wapello.
November 25, 1903	Elijah Miller	Cager	Foot mashed	Shipped under cage	Brown Bros. mine, Consolidation Coal company	Wapello, Monroe.
December 5, 1903	W. W. Carey	Driver	Ribs broken	Caught by trap door	Consolidation Coal company	Monroe.
December 11, 1903	Richard Graves	Driver	Foot mashed	Car ran over foot	Consolidation Coal company	Monroe.
December 14, 1903	A. Meyers	Timberman	Ankle dislocated	Fall of slate	Consolidation Coal company	Monroe.
January 4, 1904	James Dalziel	Miner	Back injured	Caught under cage	What Cheer Fuel company	Keokuk.
January 5, 1904	James Speer	Miner	Body crushed	Fall of slate	Illinois and Iowa Fuel company	Wapello.
January 18, 1904	John Black	Gasoline engineer	Hand mashed	Hand caught in cog wheel	Consolidation Coal company	Monroe.
February 12, 1904	R. J. Barber	Driver	Arm broken	Caught between loaded car and roof	Consolidation Coal company	Monroe.
February 16, 1904	Robert Vaughner	Timberman	Both legs broken	Fall of slate	Consolidation Coal company	Monroe.
March 3, 1904	Joe Melcher	Miner	Hip dislocated	Fall of slate	Oskaloosa Coal Mining company	Mahaska.
March 4, 1904	Thomas Legon	Driver	Fracture of skull	Caught by car	Consolidation Coal company	Monroe.
March 6, 1904	S. A. Gantz	Electrician	Leg broken	Fall of slate	Consolidation Coal company	Monroe.
May, 1904	Jas. Smith	Miner	Sight of one eye destroyed	Struck by piece sulphur chip	Morgan Valley Coal company	Marion.
June 1, 1904	Mike Genochis	Miner	Badly bruised	Fall of slate	Bear creek mine	Wapello.
June 2, 1904	E. E. Stuck	Miner	Head cut and leg bruised	Fall of slate	Crescent Coal Co.	Mahaska.
June 7, 1904	J. C. Jones	Miner	Foot mashed	Fall of slate	Consolidation Coal company	Monroe.
Winter, 1904	John Coulter	Miner	Ankles broken	Fall of slate	Spring Creek Coal company	Mahaska.
June 24, 1904	Roger Griffith	Miner	Body crushed	Fall of slate	Illinois and Iowa Fuel company	Wapello.
July 15, 1904	Pete Haney	Trapper	Arm broken	Caught between car and rib	Ducreath Coal Co.	Marion.
July 11, 1904	Wm. Mason	Miner	Leg broken	Fall of slate	Consolidation Coal company	Monroe.
August 11, 1904	John Darbollo	Tracklayer	Both legs broken	Flying coal	Garfield Coal Co.	Mahaska.
August 22, 1904	John Hale	Driver	Hand mashed	Caught by car	Consolidation Coal company	Monroe.
August 23, 1904	Chas. Rose	Miner	Both upper and lower jaw-bone broken	Flying coal	Consolidation Coal company	Monroe.
September 1, 1904	G. W. Miller	Miner	Leg broken	Fall of slate	Consolidation Coal company	Monroe.
September 17, 1904	Fred Grant	Miner	Hand mashed	Fall of slate	Consolidation Coal company	Monroe.
September 27, 1904	Geo. Crosby	Miner	Leg broken	Fall of slate	What Cheer Fuel company	Keokuk.
September, 1904	Andy Bodnar	Miner	Leg broken	Fall of slate	Mammoth Vein Coal company	Marion.

STATE MINE INSPECTORS.

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Date.	Name.	Occupation.	Character of Injury.	Cause of Accident.	Mine where Accident Occurred.	County.
October 9, 1904	Starling Murray.	Timberman	Leg broken	Car door fell on him.	Consolidation Coal company	Monroe.
October 26, 1904	Chas. Garland.	Driver	Foot mashed.	Car ran over foot	Consolidation Coal company	Monroe.
October 31, 1904	E. L. Shaw	Miner	Arm broken	Prying coal.	Consolidation Coal company	Monroe.
November 6, 1904	Ross Matthews.	Miner	Out on head	Fall of slate	Consolidation Coal company	Wapello.
November 6, 1904	David Matthews.	Miner	Body bruised	Fall of slate	Ottawa Brick and Construction Co.	Wapello.
December 1, 1904	Morgan Phillips	Miner	Leg broken	Fall of slate	Ottawa Brick and Construction Co.	Wapello.
December 26, 1904	Elmer George	Miner	Leg broken	Fall of slate	Ottawa Brick and Construction Co.	Wapello.
December 31, 1904	C. S. Stone	Driver	Leg broken	Fall of slate	Consolidation Coal company	Wapello.
December 12, 1904	Isaac Thomas	Miner	Internally injured	Fall of slate	Consolidation Coal company	Monroe.
January 1, 1905	Hatley Morris	Miner	Back injured	Fall of slate	Consolidation Coal company	Monroe.
January 2, 1905	Mike Strick	Cager	Bones of foot broken	Run over by car.	Consolidation Coal company	Malaska.
January 9, 1905	Mike Brochash	Driver	Leg broken	Caught by car.	Consolidation Coal company	Monroe.
January 26, 1905	Sam Hoskins, Jr.	Miner	Collar bone broken	Fall of slate	Consolidation Coal company	Monroe.
January 26, 1905	Herman Sugar	Driver	Leg broken	Fall of slate	Consolidation Coal company	Monroe.
February 6, 1905	T. P. Price	Miner	Back injured	Fall of slate	Consolidation Coal company	Monroe.
February 9, 1905	Jas. Howard	Driver	Back hurt	Squeezed between car and rib of coal.	Phillips Fuel Co.	Monroe.
March, 1905	John W. Davis	Miner	Ribs broken	Fall of slate	Maunoth V. & H. Coal company	Marion.
March 14, 1905	Mike Swak.	Miner	Leg broken	Fall of slate	Maunoth V. & H. Coal company	Marion.
April, 1905	Audy Elio, Jr.	Miner	Shoulder dislocated	Fall of slate	Maunoth V. & H. Coal company	Marion.
May 4, 1905	Gus Dayton	Miner	Spined about head	Fall of slate	Maunoth V. & H. Coal company	Marion.
May 6, 1905	Sam Scott	Driver	Body bruised	Kicked off car	Maunoth V. & H. Coal company	Marion.

MAHASKA COUNTY.

Mahaska, for years the leading coal county of the State but which for the past five years has shown a decrease in its production, is again coming to the front with new mines that are well equipped with the latest improved machinery, and these mines give every assurance of an increase in the production the coming year.

This county has still a large and undeveloped coal area and with the new mines already opened and under construction will again forge to the front.

The Garfield Coal Company has opened a new slope, No. 3, two miles west of Beacon; also one two and one-half miles southwest of Evans. This shaft is sunk in a new field of coal with four or five hundred acres proven to be underlain with a thick seam. This shaft will be equipped with modern machinery and will have a capacity of about 1,000 tons daily.

Mr. William Cricket has a shaft in the vicinity of White City, which is equipped to hoist a large tonnage.

Bolton & Hoover Coal Company of Bolton is a new mine with Mr. J. W. Canty in charge, and this mine is a good producer. The Union Coal company, two miles north of Buxton, has a new mine located on the North-Western railroad. The National Union Coal company, located three and one half miles southwest of Beacon, is a new mine on the C., R. I. & P. railway.

This county produced for the biennial period ending June 30, 1905, 1,206,837 tons of coal.

There were five fatal and seven non-fatal accidents reported from the mines of this county during the past two years.

MONROE COUNTY.

But a very small portion of this county is included in the Second District, the county properly being a part of the First District, but on account of that portion of the county lying north and east of the C., B. & Q. railroad being so difficult for the inspector in the First District to reach by railroad, and the tonnage decreasing so rapidly in the Second District to make the districts more equal the county was divided as above. The portion of the county in the Second District includes the mines of the Central Coal Company at Lockman, the Miller Creek Coal Company with mines near Coalfield, and the Consolidation Coal Company with mines near Buxton. This last is one of the largest companies in the State, and they are now operating four large mines in the vicinity of Buxton and are at present engaged in opening up a fifth, and this last one gives evidence of being a large producer. This company has the best equipped and best ventilated mines in the State. For the two years ending June 30, 1905, this company produced more than a million and a half tons of coal.

The Central Coal Company located near Lockman also does an extensive shipping business. The Miller Creek Coal Company have mines near Coalfield and do a good business.

WAPELLO COUNTY.

This county has steadily increased the output of coal for the last ten years, and in this last biennial period has produced 691,212 tons. The coal in this county is fine for steam and domestic purposes and the seam varies from three and one-half to five feet in thickness.

Mr. George Ramsay, of the Garfield Coal Company of Mahaska county, has prospected a coal field about three and one-half miles north of Ottumwa. The results were very favorable and this company will open and equip a mine for a large tonnage.

C. A. Hoover of Okaloosa is prospecting south of Ottumwa some four miles, on a large tract of land, and Henry Phillips is drilling north and east of Rutledge, while the Jones Bros. are drilling north of the present mine they are operating.

There are fifteen mines in this county; five of these are shipping mines located on the Chicago, Burlington & Quincy Railroad, the Chicago, Rock Island & Pacific Railroad and the Milwaukee Railroad.

The reports coming to this office would indicate that several new mines will be opened up in the near future.

There were twelve non-fatal accidents reported from the mines of this county for the biennial period ending June 30, 1905.

MARION COUNTY.

This county has been a large coal producer for many years and is constantly increasing its coal tonnage. The coal measures that are now worked are among the thickest in the State, ranging from four to twelve feet in thickness, and found at a depth of from fifty to 150 feet.

The principal field is now worked by the Mammoth Vein Coal company, who, by the way, are the pioneer coal men in this county. This company, in addition to their No. 5 mine, has in the last two years opened up three large slopes. Two of them will have steam power, and the other one in addition to their No. 5 mine will be equipped with electric haulage. When these mines are fully developed this company will be one of the largest coal producers in the State.

There are at present numerous drilling machines at work and the results from this prospecting seem to be satisfactory, as new companies are buying large tracts of land with a view to opening mines, and other large companies are constantly adding to their already large holdings.

Several small openings have been made in various parts of the county which will mine coal through the fall and winter months, and furnish employment to a number of men.

VAN BUREN COUNTY.

This is another of the small coal producing counties of the State. The mines are located in the vicinity of Douds Station, and in and near Farmington.

Findlay & Son have operated mines very profitably for a number of years about two miles north of Douds Station. They haul the coal produced to Douds Station in wagons and deliver the same to the C., R. I. & P. Railway company, who handle their entire output. By reason of their having a contract with the railroad company they are able to operate their mines the entire year. The Ratcliff Coal Company, also located north of Douds, supply coal to the Rock Island road, delivering it in wagons, and they operate the entire year.

A number of small mines located near Douds and near Farmington do a good business supplying the local trade during the fall and winter months. The coal in this county is of a good quality and the veins run from three to four feet in thickness.

KEOKUK COUNTY.

This county at one time enjoyed the distinction of being one of the large coal producing counties of the State, but of late years the coal production of this county has become less and less each year, until now it produces less than one-fourth what it did ten years ago, and unless new fields are opened soon it will not be long until it will cease to be classed with the coal producing counties of the State. Whereas, in former years hundreds of thousands of tons of coal were shipped from this county, now the business is for the most part local and the small mines are operated only during the fall and winter months. For the year ending June 30, 1894, this county produced 215,625 tons of coal, and ten years later (1904) the production had fallen to 52,375 tons, and each year this tonnage will be less as no new mines are being developed and the older ones are being worked out and abandoned.

The coal production of this county for the two years ending June 30, 1905, was 70,566 tons. One fatal and two non-fatal accidents were reported from the mines of this county during the biennial period ending June 30, 1905.

DAVIS COUNTY.

But little coal is mined in this county, but what is produced is of a very good quality, the vein averaging about three feet in thickness. The most of the operations of mining are confined to the vicinity of Laddsdales, Lunsford and Belknap and one mine is located near Floris.

It has been reported to this office that a coal mining company was recently organized at Bloomfield. This company has drilled several prospect holes near Belknap and have found a good vein of coal averaging three and one-half feet in thickness. Preparations are being made to open a mine and equip it for a good tonnage.

No fatal or non-fatal accidents were reported from the mines of this county during the past two years.

Possibly at some time in the future this county will produce much more coal than it does now, as this county joins Appanoose county, which is one of the best producing counties in the State.

WARREN COUNTY.

The coal tonnage in this county runs from ten to fifteen thousand tons yearly. The larger mines of the county are located near Somerset. But two of these do a shipping business. Most of the mines of the county are purely local and are in operation only during the fall and winter months. A few mines are operated near Milo, some near Liberty Center, and some near Lacona.

Owing to the fact that the railroad facilities are not the best in this county partly explains the small production of the county. With the advent of more railroads in the county a larger tonnage will be mined, as there is no doubt but what there is considerable land underlaid with coal in the county.

Two different seams have been worked; the upper seam is about three feet thick and is worked long-wall, the lower seam is somewhat thicker and is worked on the room and pillar plan.

This county produced for the biennial period 26,120 tons of coal. No fatal or non-fatal accidents were reported from the mines of this county during the past two years.

JEFFERSON COUNTY

The production of coal in this county is very limited. While coal has been mined in the county for a number of years, operations have not been extensive as the demand is purely local. There are a number of small mines south and west of Fairfield that do a very profitable business during the fall and winter months in supplying the local demand of Fairfield and other towns in the county. The Perlee Fuel company have recently opened a new mine near Perlee, and the outlook for the mine is good. The coal in this county is about three and one-half feet in thickness and generally free from impurities. No accidents were reported from the mines of this county during the past two years.

STATE MINE INSPECTORS.

LIST OF COMPANIES, SUPERINTENDENTS, ETC., IN SECOND DISTRICT.

MAHASKA COUNTY.

Name of Company.	Superintendent.	Postoffice Address.	Shaft or Slope.	Plan of Working.	How Ventilated.	Power Used.	Shipping or Local.
Harry Little Coal company.	Harry Little.	Pakay	Slope	Room and pillar.	Furnace	Horse	Local.
Morrow Coal company.	Jas. Nangle.	Oakblow	Shaft.	Room and pillar.	Furnace	Steam	Shipping.
Garfield Coal Company No. 1.	J. H. Ramsey	Oakblow	Shaft.	Room and pillar.	Furnace	Steam	Shipping.
Garfield Coal Company No. 2.	E. Williams	St. Charles	Slope	Room and pillar.	Furnace	Horse	Local.
Garfield Coal Company.	N. J. Kiseck	Oakblow	Shaft.	Room and pillar.	Furnace	Steam	Shipping.
Bavert Coal company.	J. H. Timbrell	Long Creek	Shaft.	Room and pillar.	Furnace	Steam	Shipping.
Long Creek Coal company.	J. H. Timbrell	Long Creek	Shaft.	Room and pillar.	Furnace	Steam	Shipping.
Barrowman Coal company.	J. H. Timbrell	Oakblow	Sh. H.	Room and pillar.	Furnace	Horse	Local.
Re and Coal company.	John Price	Erskine	Slope	Room and pillar.	Furnace	Steam	Shipping.
Swan Coal company.	John Price	Erskine	Slope	Room and pillar.	Furnace	Horse	Local.
J. H. Swinden Coal company.	J. H. Swinden	Oakblow	Slope	Room and pillar.	Furnace	Horse	Local.
Edwin & Son Coal company.	J. H. Swinden	Edinboro	Slope	Room and pillar.	Furnace	Steam	Shipping.
Green Coal company.	Jas. Chow	White City	Shaft.	Room and pillar.	Furnace	Steam	Shipping.
Wilmington Coal company.	John Brown	Oakblow	Shaft.	Room and pillar.	Furnace	Horse	Local.
Whitewater Fuel company.	Owen Boone	Pakay	Slope	Room and pillar.	Furnace	Steam	Shipping.
Kanabie Coal company.	S. Love	Whitewater	Slope	Room and pillar.	Furnace	Horse	Local.
Reason Coal company.	Andrew Latron	Reason	Slope.	Room and pillar.	Furnace	Horse	Local.

MARION COUNTY.

Name of Company.	Superintendent.	Post-office Address.	Shaft or Slope.	Plan of Working.	How Ventilated.	Power Used.	Shipping on Local.
Hayes Coal company.....	Thos. Hayes	Knoxville.	Slope.	Room and pillar.	Stove.....	Horse.....	Local.
Knoxville Coal company.....	J. F. Hunt	Engler	Shaft.	Room and pillar.	Stove.....	Horse.....	Local.
Brinding & Kersay Coal company	J. A. Jones	Hamilton	Shaft.	Room and pillar.	Furnace.....	Horse.....	Local.
Freeland Coal company.....	Wm. E. Homan	Edin.	Shaft.	Room and pillar.	Fan.....	Steam.....	Local.
M. M. Oiler Coal company.....	M. Oiler	Hamilton	Shaft.	Room and pillar.	Natural.	Horse.....	Local.
Mammoth Vein Coal company No. 2	J. A. Powers.	Hamilton	Slope.	Room and pillar.	Fan.....	Steam.....	Shipping.
Mammoth Vein Coal company No. 1	J. A. Powers.	Hamilton	Slope.	Room and pillar.	Fan.....	Steam.....	Shipping.
Mammoth Vein Coal company No. 6 & 7	J. A. Powers.	Hamilton	Slope.	Room and pillar.	Fan.....	Steam.....	Shipping.
Mammoth Vein Coal company No. 10 & 11	J. A. Powers.	Hamilton	Slope.	Room and pillar.	Fan.....	Steam.....	Shipping.
Mountain Valley Coal company.....	Robt. Hawley	Mountain Valley	Shaft.	Room and pillar.	Furnace.....	Horse.....	Local.
Southeastern Iowa Coal company	S. P. Pace	Haworth	Slope.	Room and pillar.	Furnace.....	Horse.....	Local.
Southwestern Iowa Coal company	Wm. H. Hager	Hamilton	Slope.	Room and pillar.	Furnace.....	Horse.....	Shipping.
American Coal company No. 1	J. Schulte	Hamilton	Drift.	Room and pillar.	Furnace.....	Steam.....	Shipping.
Daits Brook Coal company.....	Wm. Wilson	Hager	Slope.	Room and pillar.	Jet.....	Steam.....	Shipping.
Edwards Coal company.....	D. Phillips	Knoxville.	Slope.	Room and pillar.	Fan.....	Horse.....	Local.
Edwards Bros. Coal company.....	Edwards	Knoxville.	Shaft.	Room and pillar.	Stove.....	Horse.....	Local.
Edwards Valley Coal company	Wm. Edwards	Mountain Valley	Shaft.	Room and pillar.	Stove.....	Horse.....	Shipping.
Franklin Coal company.....	J. E. Phillips	Knoxville.	Shaft.	Room and pillar.	Fan.....	Steam.....	Shipping.
London Coal company.....	L. E. Phillips	Other	Slope.	Room and pillar.	Furnace.....	Horse.....	Shipping.

WAPELLO COUNTY.

[illegible]

KEOKUK COUNTY.

Maxwell Coal company.....	Robt. Maxwell.....	What cheer.....	Natural.....	Horse.....
Karston Bros. Coal company.....	Tom Karston.....	What cheer.....	Room and pillar.....	Local horse.....
Wm. H. Clegg & Co., coal company.....	Chas. Clegg.....	What cheer.....	Room and pillar.....	Local horse.....
Wm. Moffat & Kuhnle Coal company.....	Edw. Moffat.....	What cheer.....	Room and pillar.....	Local horse.....

MONROE COUNTY.

Central Coal Company No. 1	Engine	Lookman	Slope	Room and pillar	Furnace	Steam	Shipping
Central Coal Company No. 2	P. L.	Lookman	Slope	Room and pillar	Furnace	Horse	Shipping
Central Coal Company No. 3	E. C. Burton	Baxton	Shaft	Room and pillar	Furnace	Steam	Shipping
Consolidation Coal Company No. 1	H. C. Burton	Baxton	Shaft	Room and pillar	Furnace	Steam	Shipping
Consolidation Coal Company No. 2	H. C. Burton	Baxton	Shaft	Room and pillar	Furnace	Steam	Shipping
Consolidation Coal Company No. 3	H. C. Burton	Baxton	Shaft	Room and pillar	Furnace	Steam	Shipping
Adcock Coal company	Jos. Adcock	Coalfield	Slope	Room and pillar	Furnace	Horse	Shipping
Miller Creek Coal company		Coalfield	Drift	Room and pillar	Furnace	Steam	Shipping

VAN BUREN COUNTY.

H. Dudley & Son Coal company	H. Dudley	Donals	Shelft	Room and pillar	France	Horse	Shipping
Blasler & Co's Coal company	John Wacker	Permutation	Shelft	France	France	France	Shipping
A. R. Gavelner Coal company	A. R. Gavelner	Insurance, L. & I	Shelft	Room and pillar	France	France	Shipping
Beckoff Coal company	A. L. Racfling	Donals	Shelft	Room and pillar	France	France	Shipping
Beckoff Coal company	P. M. Cahill	Permutation	Shelft	Room and pillar	France	France	Shipping

WARREN COUNTY.

Name of Company.	Superintendent.	Postoffice Address.	Shaft or Slope.	Plan of Working.	How Ventilated.	Power Used.	Shipping or Local.
Diamond Coal company.....	Bert W. Williams.	Lacona.....	Shaft.....	Room and pillar.	Furnace.....	Horse.....	Local.
Bryant Coal company.....	S. C. Bryant.....	Milo.....	Shaft.....	Room and pillar.	Furnace.....	Horse.....	Local.
Somerset Coal company.....	R. W. Earle.....	Somerset.....	Shaft.....	Room and pillar.	Fan.....	Horse.....	Shipping.
Utterson & Milligan.....	D. L. Utterson.....	Carlisle.....	Shaft.....	Long wall.....	Furnace.....	Horse.....	Local.
Bales Coal company.....	M. D. Bales.....	Milo.....	Shaft.....	Room and pillar.	Furnace.....	Horse.....	Local.

JEFFERSON COUNTY.

Perlee Fuel company.....	B. B. Stuff.....	Perlee.....	Slope.....	Room and pillar.	Grate.....	Horse.....	Local.
George T. Stever company.....	Geo. T. Stever.....	Fairfield.....	Shaft.....	Room and pillar.	Furnace.....	Horse.....	Local.

DAVIS COUNTY.

J. M. Sickle Coal company.....	J. M. Sickle.....	Florida, R. F. D. No. 3.	Slope.....	Room and pillar.	Furnace.....	Horse.....	Local.
Big Diamond Coal company.....	A. C. Lunsford.....	Lunsford.....	Shaft.....	Room and pillar.	Furnace.....	Horse.....	Local.
C. D. Sharp mine.....	C. D. Sharp.....	Laddsdale.....	Shaft.....	Room and pillar.	Furnace.....	Horse.....	Local.

TABLE No. 1.

Showing number of mines, output of coal, number of miners and other employees in District No. 2, for year ending June 30, 1904.

Name of County.	Number of mines.	Amount of coal of all kinds produced.	Number of miners employed.	Number of other inside employees.	Number of outside employees.	Total number of employees.
Madison.....	14	530,438	873	220	160	1,248
Warren.....	5	10,667	42	8	9	59
Krook.....	3	22,775	80	33	19	137
Van Buren.....	6	17,844	81	5	15	101
Marion.....	18	346,029	881	144	81	1,403
Montone.....	7	680,427	902	370	122	1,403
Jefferson.....	1	130	4	0	1	4
Davis.....	12	324,183	531	154	106	791
Wapello.....	12	324,183	531	154	106	791
Total.....	72	1,972,323	3,748	948	534	4,230

TABLE No. 2.

Showing number of mines, output of coal, number of miners and other employees in District No. 2, for year ending June 30, 1905.

Name of County.	Number of mines.	Amount of coal of all kinds produced.	Number of miners employed.	Number of other inside employees.	Number of outside employees.	Total number of employees.
Madison.....	22	670,400	1,071	250	149	1,500
Warren.....	5	9,483	48	11	9	68
Krook.....	3	18,191	23	8	7	44
Van Buren.....	6	12,648	24	5	15	54
Marion.....	19	372,853	601	159	80	840
Montone.....	7	687,770	1,114	353	97	1,545
Jefferson.....	1	2,080	9	1	2	12
Davis.....	11	1,115	11	6	4	21
Wapello.....	12	308,029	665	149	106	910
Total.....	82	2,448,530	7,472	973	459	4,904

THIRD DISTRICT.

LETTER OF TRANSMITTAL.

HON. ALBERT B. CUMMINS, Governor of Iowa.

Sir,—I have the honor to submit herewith the report of the Third Inspection District, covering the biennial period ending June 30, 1905.

Very respectfully,

EDWARD SWEENEY,

Inspector Third District.

REPORT OF THIRD DISTRICT.

This district includes the following counties as producers of coal: Polk, Jasper, Boone, Webster, Greene, Dallas, Guthrie and Scott.

It is difficult to determine the whole number of mines producing coal within the territorial jurisdiction of the Third Inspection District, as there are so many small openings in the district that employ from one to three men. Such places produce some coal, but to secure data as to tonnage is almost impossible. There are, however, more than sixty shipping mines in the counties above named, and over one hundred mines covered by observation of the entire district. There have been opened, developed, or under construction during the biennial period twenty-six mines. Several more are in contemplation. Twenty-nine mines have been abandoned in the district during the biennial period. These were mostly small local mines employing during the fall and winter months from four to ten men.

WORK AND WAGES.

Although the mines of the district have not worked steadily the past few months, yet the fact remains that the tonnage of the district has increased materially and during the past year there has been mined in the district more than 2,000,000 tons of coal, an excess, as shown by the tables, over what has been mined in former years. This increased tonnage is due to the fact that many more miners were employed during the past year in the mines of the district than were ever employed before.

During the month of April, 1904, all the coal mines of the State were idle for about three weeks, owing to a difference of opinion as to terms of the wage scale agreement which, however, was amicably adjusted, thanks to the good sense and business judgment of our miners' officers and operators' association, and the wages in our mining industry will remain stable and unchanged until April 1, 1906. The rate is satisfactory and good, compared with other industries; in fact it is generally conceded that our coal miners have a wage scale and employment conditions that are suggestive of intelligent conservatism in the management of their organization and negotiations with the Iowa coal operators. It is an evidence of intelligence and honesty in the joint wage movement existing between our coal operators and coal miners that merits consideration.

Work has been dull for several months and the mine workers net earnings have diminished accordingly. The Iowa coal operator requires a close vigilance to stay the crowding encroachments of cheap coal produced in eastern fields, where nature has favored the mine owner with a thick coal which is usually easily mined.

POLK COUNTY.

Polk county ranks as the second coal producing county in the State of Iowa; the first in the State being Monroe county, situated in the southeastern part of the State. The future prospects of Polk county in the coal business are bright, owing to the fact that there were recently opened up, several new mines, which will be large coal producers and do a large shipping business when fully developed. The majority of these new mines are equipped with the latest improved machinery which will facilitate the handling of a large tonnage, and these new mines will give employment to several hundred more men. There has also been a great deal of prospecting going on in this county within the past few months, and if reports are correct, it will be a question of only a short time until Polk will be the leading coal county in the State.

There are more than thirty coal producing mines in Polk county at the present time and a number of these have a capacity of from 500 to 700 tons per day. Out of the above number of mines there are ten or fifteen which depend entirely on local trade throughout the fall and winter months and do a very profitable business at this season of the year.

The coal fields in Polk county start in the southeastern part of the county and extend as far north as Enterprise. The majority of the mines are within a radius of six miles of the court house. While there is considerable coal shipped into Des Moines for local consumption, at the same time we have several large railroad mines that ship their entire output to the north and west and do not supply any coal for local consumption. In fact several thousand more tons of coal are mined here each year than could possibly be used in Des Moines and Polk county.

The increased growth of the manufacturing business in Des Moines has had much to do with the development of the coal industry of Polk county. Many manufacturing establishments are here; others are coming, for they realize the value of good railroad facilities and plenty of good fuel right at hand, and these Des Moines and Polk counties have to offer. This influx of manufacturing establishments offers an incentive to coal operators to develop this field, and we look for an increased growth in the coal industry the coming year.

Two fires have occurred in this county during the biennial period. On the night of August 13, 1904, fire destroyed the shaft house and a portion of the dump trestle of the Coaldale Fuel Company, burned two cars of coal standing on the track near the mine, a large amount of valuable machinery, and resulted in throwing about 150 men out of employment until the shaft house was rebuilt. The property loss approximated close to ten thousand dollars.

On November 19, 1904, fire destroyed the engine and boiler house of the O. K. Coal Company, located north of Des Moines, entailing considerable loss.

NEW MINES OPENED.

The West Riverside Coal Company has opened up a new mine known as No. 2, on the Interurban Railroad northwest of Des Moines, and about one-

half mile east of their No. 1 shaft. This mine is being equipped with modern machinery and when fully developed will give employment to 150 or 200 miners.

Walnut Creek Coal Company mine is located southwest of the city of Des Moines and has railroad connections with the C. & M. & St. Paul Railroad. This mine when fully equipped will employ from fifty to seventy-five men.

The Bennett Bros., old and experienced coal men, have opened up a large mine southwest of Des Moines. The mine is well equipped and will furnish employment to over 100 men.

The Maple Block Coal Company has opened by shaft a new mine known as No. 2, located northeast of Des Moines. This is a good property and is sure to figure prominently in the coal business of Iowa for a long period of years. Some 150 miners are employed and shipping is done over the Rock Island railroad. The machinery and equipment are first class, and the management very capable men.

The Hollingsworth Coal Company of Des Moines has recently sunk a shaft 7 x 14 feet in size and 156 feet deep. The location is about three and one-half miles southwest of Des Moines. The coal is from four to five feet in thickness and is of a good quality. Several hundred acres of coal was proven ere sinking was commenced. This is sure to prove a valuable property and ought to be good for a number of years.

The Deer Creek Coal Company mine is located about a mile and a half from the Enterprise mine, along the same line of railroad. This mine is equipped to handle a large tonnage. The company has also erected a large number of houses to accommodate their employees.

BOONE COUNTY.

Boone county ranks second in coal production in the Third District, its output for the year ending June 30, 1904, being 345,472 tons, and for the year ending June 30, 1905, 421,802 tons, making a total of 767,274 tons for the biennial period. This production shows a net gain of 192,919 tons of coal over the preceding biennial period.

There are seventeen mines in operation in this county, with an annual output of more than 350,000 tons of coal. All of these mines but three are shipping mines and are operating fairly regular during the entire year.

The coal measures of Boone county extend north and south across the entire county, along the Des Moines river. The principal mining, however, is done around Fraser and Boonsboro, in the north and central portions of the county. Some small mines are in operation in the southern part of the county, but little mining is done. Formerly there was a great deal of coal mined in the vicinity of Angus, and while the vein there ranges from four to six feet in thickness there is usually a large volume of sand and water overlaying a thin strata of slate, making a bad roof, and the coal can not be mined at a profit.

The coal in Boone county is of an excellent quality for commercial purposes and is found at depths varying from thirty to two hundred and fifty feet.

The mines around Boonsboro have direct connection with the main line of the Chicago & Northwestern railroad, while the mines at Fraser connect with the Newton & Northwestern, and the Minneapolis and St. Louis lines running north; thus affording excellent facilities for the shipment of coal into the territory where no coal is produced. The smaller mines not doing a shipping business supply the local demand only and are usually operated through the fall and winter months.

This county has for years been a large producer and will continue to be for many years to come. While the vein is not as thick as in the central part of the Iowa coal field, yet it is of a uniform thickness and of a good quality and is said to be mined at a profit to both the operator and the miner.

There has been a great deal of prospecting done recently west of Boone, and reports coming to the inspector's office would indicate that there will be some new openings in this field in the near future.

Among the largest coal producers in this county, are the Boone Valley Coal & Railroad Company, which operates four shafts and one slope near Fraser and produce nearly one-third of the entire tonnage of the county. The W. D. Johnson Coal Company, the Crowe Coal Mining Company, the Heaps & Crowe Coal Company, the Rogers Coal Company and the Heaps Coal Company. These latter are located near Boonsboro.

The condition of the mines in Boone county have been much improved in late years, especially with regard to ventilation, safety catches, and covers on the cages, and other safety appliances, escape shafts and better traveling ways.

There were two fatal and six non-fatal accidents reported from this county for the biennial period ending June 30, 1905.

JASPER COUNTY.

Jasper county produces annually over 300,000 tons of coal, being the third largest coal producing county in the Third District. Coal has been mined in this county for more than forty years. Veins of coal in this county run from three to six feet in thickness.

The Colfax Consolidated Coal Company's mines are among the largest in the State. This company operates two large mines, Nos. 6 and 7, the former located three miles south of Colfax, and the latter at Seevers, four miles from Colfax. They are now opening another mine, No. 8, and this new mine will be connected with the switch running up to No. 7 mine. They are equipping their No. 8 with the latest and best machinery, and when the mine is fully developed it will be one of the largest coal producers in Jasper county and will rank among the best in the State.

Three miles south of Newton is the oldest mining field in the county and mining operations are still carried on there. At present four good local mines are operated, viz., Snooks, Listers, Carsons and French. They employ from six to fifteen miners each during the fall and winter months and the coal from these mines is sold locally and in Newton. There is also the

Worrick Bros. Coal Company of Colfax with an output of about 5,000 tons per year, and the C. M. Norris Company of Prairie City with a lesser production. Other small mines employing from two to six men in the winter months are located at different parts of the county. All the mines in this county are worked on the room and pillar plan and furnish employment to about 700 miners and other workmen.

The Diamond Coal Company opened up a new mine the fall of 1904. This mine is located one and one-half miles northeast of Mitchellville and is a shaft opening, 128 feet deep. The vein is about four feet in thickness of a very good quality. The mine will depend on local trade entirely as they do not have railroad connections.

There were two fatal and seventeen non-fatal accidents in the mines in this county during the past two years.

WEBSTER COUNTY.

Webster county with fifteen mines in operation produces annually about 160,000 tons of coal. Nine of these mines do a shipping business and six supply the local demand only. Nearly 500 men are furnished employment.

The principal coal fields in this county are located near Lehigh, Coalville and Kalo. Owing to the fact that Webster county occupies the extreme northern part of the Iowa coal fields gives to the county an excellent market for its output in the counties north and west.

The mines at Lehigh, Kalo and Coalville have connection with the main line of the Chicago Great Western Railway, running north. The mines at Lehigh also have connection with the Crooked Creek Railroad, which runs to Webster City and connects with the main line of the Illinois Central, running east and west.

The local mines usually start mining operations about the first of September and run only through the fall and winter months. The coal in this county varies in thickness from two and one-half to four feet, and is found at depths varying from sixteen to one hundred feet, beneath the surface. The quality of the coal is good and the mines are generally well equipped and in good condition.

Two accidents, one fatal and one non-fatal, occurred in the mines of this county during the biennial period ending June 30, 1905.

GUTHRIE COUNTY.

There are a number of small mines in this county, the majority of them being located near Fansler, Bayard and Panora. The Raccoon river runs diagonally across the county and most of the mines are located near the river. None of these mines are large and most of them are too far from the railroads to do a shipping business and they are, therefore, purely local mines employing from five to twenty-five miners during the fall and winter months. The majority of these mines commence taking out coal about the first of September, as that is about the time the local trade begins, and they continue to operate until spring when they shut down till fall again.

On account of lack of shipping facilities the mining of coal has not been developed to any great extent, yet I believe the time is not far distant when the county will produce much more coal than is needed for home consumption. The coal vein in this county does not run as thick as the coal vein in other parts of the State, yet it is easily mined and should be handled at a profit to the operator.

The mines in this county vary in depth from fifty to one hundred and twenty feet and the majority of the shaft mines are operated by horse power, while the miners in the drift mines push their coal out. There were 58,769 tons of coal produced in this county the past two years, and this is a decided increase over the tonnage of former years. But few of the mines make the necessary improvements to store coal ready for the extra demand during the winter months and as a consequence there are many times when the local demand can not be satisfied, and much business is thus lost to the operators.

The mines of this county are all worked on the long-wall system of mining, and the natural conditions favor this method of mining. The coal thus mined is nearly all lumps and is of a good quality, being very hard, bright, and a free burner. I believe with good railroad facilities this coal could be produced as cheaply as in any other part of the State.

On my first tour of inspection of this district I found many of the mines with but one opening. I immediately ordered that the number of men working under such conditions be reduced to four to comply with section 2486 of the State mining laws, until the second opening was made. A number of the companies immediately started to sink escape shafts, while others simply complied with the law by reducing the number of men employed and running on a smaller scale. For the most part the conditions existing in the mines of this county were found to be satisfactory, as regards sanitary conditions, general safety appliances, etc.

No fatal or non-fatal accidents were reported from this county during the past two years.

GREENE COUNTY.

But six mines are now in operation in this county, three of which are located at Angus, two at Rippey, and one at Grand Junction. The entire output from these mines is about 18,000 tons yearly. Most of the coal mined is found in the southeastern part of the county, and the coal in this field generally lays near some creek tributary to the north branch of the Raccoon river. There has been a decrease in the production of coal in this county in recent years. Only about one sixth of the former tonnage is mined as compared with that of twenty years ago.

The Keystone Coal Company of Angus is the largest producer in the county at present and it has an annual output of about 7,000 tons. Next comes the Michael Feith mine of Angus with a tonnage of 6,000 annually. Following these are the mines of the Goodwin Coal Company of Grand Junction, the Ditchburn Coal Company of Angus, the Willow Grove Coal Company of Angus and the Snake Creek Coal Company of Rippey. This latter is a new mine opened during the fall of 1904.

The Keystone Coal Company employs from twenty to twenty-five men, and the other companies from eight to twenty each. The Goodwin Coal Company does some shipping. The others run during the fall and winter months, only, and supply the local demand.

But two accidents, one fatal and one non-fatal have been reported from this county during the past two years.

SCOTT COUNTY.

Scott county is located in the eastern part of the State and is a river county. The first coal was mined here more than half a century ago, the principal mines being located in the vicinity of Buffalo and Jamestown, in the southern part of the county.

The coal lies in pockets and is worked by shaft openings at the depth of from fifty to seventy feet. It is hoisted to the surface by the gin method. The seams are from two and one-half to three feet in thickness. Most of the coal in this county is mined by the pick method and after being mined is wedged down, no powder being used.

The important mines in the county are: The Long mine, operating near Jamestown and employing from ten to fifteen men, with an annual output of about 2,000 tons. The Sass Bros. Coal Company near Jamestown employ from eighteen to twenty men and have an annual output of 3,500 tons. The Langwith Coal Company near Jamestown employ from eight to ten men and produce about 2,500 tons annually. Carlin & Buchmeyer near Jamestown employ from twelve to fifteen men and have an output of about 3,500 tons annually.

These mines do not do a shipping business as they are not located on a railroad, and most of the coal is sold at the mines locally, and the balance is delivered by wagons to Davenport and sold there. The coal is of good

quality and is sold at a good price. All the mines in this county have a second opening and are ventilated by furnaces, which supply sufficient ventilation for all requirements.

There were no accidents from the mines of this county reported to this office.

DALLAS COUNTY.

The coal measures in this county are about the same as in Guthrie county, but not so many mines are in operation. The leading mines are those of the Hutchison Bros. at Dawson, and of the Reese Bros. at Madrid. The former are operating a mine two miles west of Dawson. The depth of the main shaft is eighty feet, and thickness of the vein worked about three and one-half feet. This mine is equipped with steam power and is ventilated with a fan. The output of this mine is about 6,000 tons per year.

The Reese Bros. are operating two mines about six miles south of Madrid. Their mines are also equipped with steam power, and they have a tonnage of about 7,000 per year. Other mines are those of the Vernon Coal Company and William Knox operating mines near Madrid. The Mills Coal Company also operate a small mine near Linden. The mine at Van Meter, formerly one of the largest coal producers in the county, has been closed down for some time. There were two non-fatal accidents reported from this county during the biennial period ending June 30, 1905.

LIST OF COMPANIES, SUPERINTENDENTS, ETC., IN THIRD DISTRICT.

POLK COUNTY.

Name of Company.	Superintendent.	Postoffice Address.	Shaft or Slope.	Plan of Working.	How Ventilated.	Power Used.	Shipping or Local.
Des Moines Coal company	Chas. Morris.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Saylor Coal company	J. D. Owen.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Smith-Lowe Coal Company No. 3.	E. C. Smith.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Smith-Lowe Coal Company No. 4.	E. C. Smith.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Norwood Coal company	Josh Norwood.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Michigan Coal company	John Norwood.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Black Coal company	C. A. Swenson.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Bloomfield Coal company	George Yarn.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Keystone Coal company	E. M. Gray.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Eagle Coal company	E. M. Holmes.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Midway Coal company	E. Z. Row.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
West Riverside Coal company	Joseph Jones.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Wint Coal and Iron company	John Quinn.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Wint Coal company	John Quinn.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Oak Park Fuel company	J. P. McClelland.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
O K Coal company	Benj. Mann.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Glenwood Coal company	Caleb Johns.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Elko Coal company	Thos. Beck.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Capital Coal company	Daniel Johns.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Madison Coal company	Ralph Madison.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Walnut Creek Coal company	Ben Bealey.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Economy Coal company	W. E. Evans.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Hollingsworth Coal company	Geo. Simpson.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Bennett Bros Coal company	Edward Herdman.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Coaldale Fuel company	O. M. Carpenter.	Des Moines.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Diamond Joe Coal company	John Shuler.	Runcells.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Enterprise Coal company	G. E. Walters.	Enterprise.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Deer Creek Mining company	H. Bealey.	Enterprise.	Shaft.	Room and pillar.	Fan.	Steam.	Shipping.
Valley Coal & Mining company	H. Bealey.	Commerce.	Shaft.	Longwall.	Fan.	Steam.	Shipping.

WEBSTER COUNTY.

Name of Company.	Superintendent.	Postoffice Address.	Shaft or Slope.	Plan of Working.	How Ventilated.	Power Used.	Shipping or Local.
Crooked Creek Coal and Railroad company	F. E. Wilson	Webster City	Shaft	Long wall	Fan	Steam	Shipping.
Pleasant Valley Coal company	Jerry Dawson	Fort Dodge	Shaft	Room and pillar	Fan	Steam	Shipping.
Gleason Coal company	John Gleason	Fort Dodge	Shaft	Room and pillar	Fan	Steam	Shipping.
McEwan Coal company	Wm. McEwan	Coalville	Shaft	Room and pillar	Furnace	Steam	Local.
Craig & Dawson Coal company	Wm. Dawson	Kalo	Shaft	Long wall	Fan	Steam	Shipping.
Daily Coal company	Thos. Adamson	Lehigh	Shaft	Long wall	Fan	Steam	Shipping.
Rogers Coal company	E. W. Collins	Fort Dodge	Shaft	Room and pillar	Fan	Steam	Shipping.
Johnson Coal company	A. P. Campbell	Kalo	Shaft	Long wall	Furnace	Horse	Shipping.
Bennett Coal company	S. Bennett	Kalo	Slope	Long wall	Furnace	Horse	Local.
Sam McClure Coal company	Sam McClure	Lehigh	Shaft	Long wall	Fan	Steam	Shipping.
Butler & Rhodes Coal company	D. Rhodes	Coalville					

BOONE COUNTY.

Boone Coal and Mining company—No. 1	Robt. Kennedy	Fraser	Shaft	Long wall	Fan	Steam	Shipping.
Boone Coal and Mining company—No. 3	Robt. Kennedy	Fraser	Shaft	Long wall	Fan	Steam	Shipping.
Boone Coal and Mining company—No. 5	Robt. Kennedy	Fraser	Shaft	Long wall	Fan	Steam	Shipping.
Boone Coal and Mining company—No. 6	Robt. Kennedy	Fraser	Shaft	Long wall	Fan	Steam	Shipping.
Eagle Coal company	W. J. Conway	Boonesboro	Shaft	Long wall	Fan	Steam	Shipping.
Crowe Coal company	Wm. Crowe	Boonesboro	Shaft	Long wall	Fan	Steam	Shipping.
The Heaps Coal company	A. Heaps	Boonesboro	Shaft	Long wall	Fan	Steam	Shipping.
Risher Coal company	Thos. W. Hughes	Boonesboro	Shaft	Long wall	Fan	Steam	Shipping.
Rogers Coal company	Geo. W. Rogers	Boonesboro	Shaft	Long wall	Fan	Steam	Shipping.
Albert Davis Coal company	Albert Davis	Pilot Mound	Shaft	Room and pillar	Furnace	Horse	Local.
Big Five Coal company	A. L. Carpenter	Moingona	Shaft	Long wall	Steam jet	Horse	Shipping.
W. D. Johnson Coal company	H. H. Canfield	Boonesboro	Shaft	Long wall	Fan	Steam	Shipping.
W. H. Bernard Coal company	W. H. Bernard	Madrid	Shaft	Long wall	Furnace	Horse	Local.
Heaps & Crowe Coal company	George Heaps	Boonesboro	Shaft	Long wall	Fan	Steam	Shipping.

JASPER COUNTY.

Colfax Consolidated Coal Company No. 6	W. C. Sheppard, Jr.	Colfax	Shaft	Room and pillar	Fan	Steam	Shipping.
Colfax Consolidated Coal Company No. 7	W. C. Sheppard, Jr.	Colfax	Shaft	Room and pillar	Fan	Steam	Shipping.
Colfax Consolidated Coal Company No. 8	W. C. Sheppard, Jr.	Colfax	Shaft	Room and pillar	Fan	Steam	Local.
Minden Coal company	Martin Minden	Colfax	Shaft	Room and pillar	Furnace	Horse	Local.
French Coal company	E. P. French	Newton	Shaft	Room and pillar	Natural	Horse	Local.
Carson Bros. Coal company	A. Carson	Newton	Shaft	Room and pillar	Natural	Steam	Local.
Lister Coal company	Alfred Lister	Newton	Shaft	Room and pillar	Fan	Horse	Shipping.
Worrick Bros. Coal company	Jas. Worrick	Colfax	Shaft	Room and pillar	Furnace	Horse	Local.
C. M. Norris Coal company	C. M. Norris	Prairie City	Drift	Room and pillar	Furnace	Horse	Local.
Snooks Bros. Coal company	Thos. Snooks	Newton	Shaft	Room and pillar	Natural	Horse	Local.

GUTHRIE COUNTY.

Robert MacCulloch Coal company	Robert MacCulloch	Stuart	Drift	Long wall	Natural	Horse	Local.
Batschlet & Marchant Coal company	John Marchant	Panora	Shaft	Long wall	Furnace	Horse	Local.
J. W. King Coal company	J. W. King	Bagley	Shaft	Long wall	Fan	Horse	Local.
Murphy & Mallon Coal company	W. F. Murphy	Yale	Shaft	Long wall	Furnace	Horse	Local.
Scott Coal company	W. H. Scott	Yale	Shaft	Long wall	Natural	Horse	Local.
Sipe & Hughes Coal company	J. D. Sipe	Yale	Shaft	Long wall	Furnace	Horse	Local.
Mansell Coal company	John Mansell	Panora	Shaft	Long wall	Fan	Horse	Local.
Reese Coal company	David Reese	Panora	Shaft	Long wall	Furnace	Horse	Local.
Jas. Ritchie & Son Coal company	Jas. Ritchie	Stuart	Shaft	Long wall	Furnace	Horse	Local.
Scott Bros. Coal company	Isaac Scott	Bayard	Shaft	Long wall	Furnace	Horse	Local.
Clipper Coal company	Wm. Marchant	Bagley	Shaft	Long wall	Furnace	Horse	Local.
Greenbrier Coal company	E. E. Cleaveland	Jamaica	Shaft	Long wall	Natural	Horse	Local.

DALLAS COUNTY.

Driscoll Bros. Coal company	Wm. Driscoll	Woodard		Room and pillar		Horse	Local.
Wm. Knox Coal company	Wm. Knox	Madrid	Slope	Room and pillar		Steam	Local.
Rees Bros. Coal company	W. J. Rees	Madrid	Shaft	Room and pillar	Fan	Steam	Shipping.
Hutchison Bros. Coal company	W. C. Hutchison	Dawson	Shaft	Room and pillar	Fan		

SCOTT COUNTY.

Sass Bros. Coal company	Wm. Sass	Jamestown	Shaft	Room and pillar	Furnace	Horse	Local.
Langwith Coal company	E. T. Longwith	Jamestown	Shaft	Room and pillar	Furnace	Horse	Local.
Long Coal company	Lewis E. Long	Jamestown	Shaft	Room and pillar	Furnace	Steam	Local.

GREENE COUNTY.

Name of Company.	Superintendent.	Postoffice Address.	Shaft or Slope.	Plan of Working.	How Ventilated.	Power Used.	Shipping or Local.
Ditchburn Coal company.....	Robert Ditchburn.....	Angus.....	Shaft.....	Long wall.....	Fan.....	Horse.....	Local.....
Buckeye Coal company.....	M. Feith.....	Rippey.....	Shaft.....	Room and pillar.....	Natural.....	Horse.....	Local.....
Goodwin Coal company.....	Thos. Goodwin.....	Grand Junction.....	Shaft.....	Long wall.....	Fan.....	Steam.....	Shipping.....
Willow Grove Coal company.....	H. A. McElheny.....	Angus.....	Shaft.....	Long wall.....	Fan.....	Steam.....	Local.....
Keystone Coal company.....	Wm. Bennett.....	Angus.....	Shaft.....	Long wall.....	Furnace.....	Horse.....	Local.....
Snake Creek Coal company.....	Geo. Richards.....	Rippey.....	Shaft.....	Room and pillar.....	Exhaust from pump.....	Steam.....	Local.....

TABLE No. 1.

Showing number of mines, output of coal, number of miners and other employes in District No. 3, for year ending June 30, 1904.

Name of County.	Number of mines.	Amount of coal of all kinds produced.	Number of miners employed.	Number of other inside employes.	Number of outside employes.	Total number of employes.
Polk.....	27	966,172	1,547	500	280	2,327
Webster.....	15	155,323	813	121	47	481
Boone.....	16	345,472	789	169	112	1,070
Jasper.....	11	302,599	477	170	62	709
Guthrie.....	12	29,353	137	11	16	164
Dallas.....	5	16,586	49	19	8	76
Scott.....	6	14,983	54	23	5	82
Greene.....	5	15,898	62	11	7	80
Total.....	97	1,846,386	3,428	1,024	537	4,989

TABLE No. 2.

Showing number of mines, output of coal, number of miners, and other employes in District No. 3, for year ending June 30, 1905.

Name of County.	Number of mines.	Amount of coal of all kinds produced.	Number of miners employed.	Number of other inside employes.	Number of outside employes.	Total number of employes.
Polk.....	30	1,094,521	1,905	593	334	2,832
Webster.....	11	122,056	233	95	39	367
Boone.....	15	422,802	766	272	113	1,161
Jasper.....	12	308,027	454	143	74	671
Guthrie.....	15	29,416	102	81	17	150
Dallas.....	5	13,599	43	17	10	70
Scott.....	4	5,210	38	14	6	58
Greene.....	6	17,470	74	23	11	108
Total.....	98	2,010,101	3,615	1,161	604	5,380

TABLE No. 3.

Showing the output of coal of the counties comprising District No. 3 for the past five years.

Counties.	1901	1902	1903	1904	1905
Polk	938,600	981,610	996,573	966,172	1,004,521
Boone	902,800	286,800	288,055	345,472	422,802
Jasper	134,500	133,400	323,312	302,569	305,027
Webster	167,300	132,477	159,990	155,323	122,056
Greene	12,400	16,192	12,711	15,898	17,470
Guthrie	16,750	17,250	16,545	29,355	39,416
Dallas	29,400	34,750	19,990	16,586	13,599
Scott	22,469	28,973	18,280	14,983	5,210

TABLE No. 4.

Showing tonnage in District 3, for past ten years, with number of fatal accidents and number of employees with tonnage per accident, etc.

Year.	Number of fatal accidents.	Tons of coal mined during each year.	Number of employees.	Tons of coal mined per accident.	Number of employees for each accident.
1896	9	1,059,022	3,376	117,690	375
1897	8	1,201,788	3,649	150,223	456
1898	10	1,370,459	3,382	137,045	338
1899	11	1,555,050	3,437	141,368	312
1900	8	1,508,020	3,819	188,502	477
1901	7	1,607,690	3,904	229,670	558
1902	13	1,653,152	3,878	127,160	298
1903	5	1,835,456	3,691	367,091	733
1904	10	1,846,886	4,989	184,639	499
1905	11	2,010,101	5,380	182,736	489

ACCIDENTS.

There were twenty-one fatal and sixty non-fatal accidents during the biennial period, the particulars of which will be found in the details by counties. In canvassing the causes of mine accidents it will be found that the usual story is told; falling slate, premature blast, caught by cage, drivers caught under car, and shotfireds are listed among the killed. Like in all the affairs of life, where any dangerous condition is found, accidents will occur. Men at times expose themselves needlessly to danger, and in very many cases we can see where a "stitch in time saves nine", and with just a little care a death or an injury could have been averted.

Mining rules or mining laws can not prevent such accidents; they are peculiarly a part of man and a feature of the employment. Some men will neglect to put up needed timbers or props, some will use reckless methods in handling powder, and drivers become heedless to all danger and take needless risk. Only a strong guardian could save some men from accidents occurring in our mines.

The mining laws of the State are observed in a satisfactory manner; some of our mine owners are continually instituting plans and ways to make their mines safe and no expense is spared to protect life and provide good ventilation and sanitary conditions.

Fatal accidents in District No. 3, for two years ending June 30, 1905.

Date.	Name of Deceased.	Occupation.	Cause of Death.	Employed by—	County.
July 6, 1903	Guy Weston Parker	Miner	Fall of slate	Keystone Coal company	Polk.
July 23, 1903	Gus Carlson	Miner	Flying coal	Saylor Coal company	Polk.
August 27, 1903	William Thomas	Miner	Fall of slate	Colfax Consolidated Coal company	Jasper.
October 20, 1903	Ernest Foreman	Driver	Fall of slate	Gibson Coal Mining company	Polk.
November 17, 1903	Andrew Anderson	Miner	Fall of slate	W. D. Johnson Coal company	Boone.
November 7, 1903	Charles Holmes	Miner	Fall of coal	Maple Grove Coal company	Polk.
December 11, 1903	George Smith	Superintendent	Fell into sump	Pleasant Valley Coal company	Webster.
December 29, 1903	Hoyt Dunskin	Driver	Run over by car	Saylor Coal company	Polk.
April 27, 1904	Joseph Smith	Miner	Fall of slate	Norwood Coal company	Polk.
June 28, 1904	Harry Gibson	Shotfirer	Flying coal	Colfax Consolidated Coal company	Jasper.
July 23, 1904	James Crowe	Superintendent	Caught by cage	Heaps & Crowe Coal company	Boone.
September 7, 1904	Ed Stuart	Driver	Run over by cars	Saylor Coal company	Polk.
October 6, 1904	Wm. Laidler	Miner	Fall of slate	Ditchburn Coal company	Greene.
October 12, 1904	John W. Logan	Miner	Fall of coal	Saylor Coal company	Polk.
November 17, 1904	L. A. Brown	Miner	Fall of slate	Diamond Joe Coal company	Polk.
November 30, 1904	Peter Johnson	Miner	Fall of slate	Smith-Lowe Coal company	Polk.
January 17, 1905	Samuel Taylor	Miner	Fall of slate	West Riverside Coal company	Polk.
January 18, 1905	John Bacon	Miner	Explosion of powder	Oak Park Fuel company	Polk.
January 18, 1905	Henry Connack	Miner	Fall of slate	Bennett Bros. Coal company	Polk.
February 2, 1905	Thomas Hammond	Driver	Run over by cars	Elko Coal Mining company	Polk.
February 6, 1905	Adam Waitkum	Miner	Fall of slate	Smith-Lowe Coal company	Polk.

Non-fatal accidents in District No. 3, for two years ending June 30, 1905.

Date.	Name.	Occupation.	Character of Injury.	Cause of Accident.	Mine Where Accident Occurred.	County.
July 9, 1903	John Wilding	Miner	Arm broken	Caught in cars	Colfax Consolidated Coal Co.	Jasper.
July 22, 1903	J. T. Jones	Timberman	Finger cut off	Ax fell on hand	Colfax Consolidated Coal Co.	Jasper.
July 23, 1903	Geo. Ewing	Driver	Internally injured	Fall of slate	Crook Creek No. 4	Webster.
September 23, 1903	Jos. Birmingham	Laborer	Skull broken	Fall of slate	Saylor Coal Co.	Polk.
September 29, 1903	Thos. Colzon	Miner	Hip bruised	Fall of slate	Hanlon Mine	Scott.
October 1, 1903	J. R. Anderson	Miner	Ankle broken	Fall of slate	Enterprise Coal Co.	Polk.
November 11, 1903	Wm. Underwood	Miner	Collar bone broken	Fall of slate	Goodwin Coal Co.	Greene.
November 17, 1903	H. F. Scott	Miner	Back hurt	Fall of slate	Colfax Consolidated Coal Co.	Jasper.
November 21, 1903	Jno. Killion	Timberman	Foot mashed	Fall of slate	Boone County Coal company	Boone.
November 21, 1903	Andrew Johnson	Miner	Leg broken	Fall of slate	Boone County Coal company	Boone.
December 8, 1903	Geo. Newcomb	Miner	Finger pinched off	Riding extra	Colfax Consolidated Coal Co.	Jasper.
January 14, 1904	Mark Jones	Miner	Broken leg	Fall of slate	Des Moines Coal Co	Polk.
January 18, 1904	B. H. McCarty	Timberman	Hip broken	Fall of timber	Des Moines Coal Co	Polk.
January 20, 1904	John Birmingham	Miner	Leg broken	Fall of slate	W. D. Johnson Mine	Boone.
January 21, 1904	Fred Norwood	Pit foreman	Mashed hips	Fall of slate	Norwood Coal Co.	Polk.
February 4, 1904	W. J. Jackson	Driver	Fingers mashed	Caught in car	West Riverside Coal company	Polk.
February 13, 1904	Geo. Cook	Miner	Rib broken	Fall of slate	Smith-Lowe Coal company	Polk.
February 25, 1904	David Scott	Miner	Leg broken	Fall of slate	Smith-Lowe Coal company	Polk.
Winter, 1903-1904	T. B. Smith	Miner	Leg broken	Fall of slate	Enterprise Coal Co.	Polk.
March 19, 1904	Malone	Miner	Ribs fractured	Fall of coal	Des Moines Coal Co	Polk.
April 27, 1904	Roy Mercer	Miner	Crushed hips	Caught by cars	Des Moines Coal Co	Polk.
May 10, 1904	Chas. Lundeen	Roadman	Leg broken	Fall of Rock	Rogers Coal Co	Boone.

NON-FATAL ACCIDENTS—CONTINUED.

Date.	Name.	Occupation.	Character of Injury.	Cause of Accident.	Mine Where Accident Occurred.	County.
June 28, 1904	Gay Stover	Miner	Bones in foot broken.....	Fall of slate.....	Colfax Consoli- dated Coal Co.	Jasper.
July 8, 1904	Dave Budie	Cager	Arm broken	Caught by cage.	Colfax Consoli- dated Coal Co.	Jasper.
July 28, 1904	E. H. Ballard	Miner	Arm broken	Fall of slate.....	Greenbrier Coal Co.	Guthrie.
July 25, 1904	John Sullivan	Driver	Thighs bruised	Falling timbers.....	Saylor Coal Co.	Polk.
September 8, 1904	Geo. Wisham	Driver	Leg broken	Fall of slate.....	Smith-Lowe Coal company	Polk.
September 8, 1904	Geo. Rupe	Miner	Bruised back.....	Fall of slate.....	Coaldale Fuel Co.	Polk.
September 19, 1904	H. DeVan	Driver	Arm broken	Car ran off track.....	Smith-Lowe Coal company	Polk.
September 21, 1904	John Cotton	Miner	Leg broken	Fall of slate.....	Center Coal Co.	Polk.
September 23, 1904	John Heffron	Miner	Ribs broken.....	Caught between car and col- lar overhead	Coaldale Fuel Co.	Polk.
October 31, 1904	Ed. Cocoonut	Shotfirer	Leg broken	Flying coal	Enterprise Coal Co.	Polk.
December 1, 1904	Albert Davis	Miner	Leg broken	Fall of slate	Davis mine.....	Boone.
December 8, 1904	Joe Bostoletti	Miner	Foot broken.....	Fall of slate.....	Colfax Consoli- dated Coal Co.	Jasper.
December 5, 1904	Albert Grandquist	Driver	Ribs broken.....	Caught between car and timbers	Colfax Consoli- dated Coal Co.	Jasper.
December 6, 1904	Joe Lilly	Miner	Badly burned.....	Powder explosion.....	Maple Block Coal company	Polk.
January 21, 1905	Peter Frisk	Miner	Leg broken	Fall of slate.....	Glenwood Coal Co.	Polk.
January 23, 1905	Chas. Evans	Shotfirer	Cut about head	Flying coal	Enterprise Coal Co.	Polk.
January 24, 1905	M. V. Carpenter	Miner	Back hurt	Fall of slate	Smith-Lowe Coal company	Polk.
February 15, 1905	W. Robinson	Driver	Ear cut.....	Kicked by mule.....	Norwood Coal Co.	Polk.
February 17, 1905	Jasper Kinney	Miner	Both legs and 3 ribs broken	Flying coal	Keystone Coal Co.	Polk.
February 23, 1905	John Peterson	Miner	Two ribs broken.....	Fall of slate	Madison Coal Co.	Polk.
February 25, 1905	A. Trevelthorn.....	Miner	Four ribs broken.....	Fall of slate	Colfax Consoli- dated Coal Co.	Polk.
March 2, 1905	N. E. Setz	Miner	Thumb taken off.....	Fall of slate.....	Colfax Consoli- dated Coal Co.	Polk.
March 4, 1905	Aug. Storchovich	Miner	Two fingers taken off	Caught in sheave wheel.....	Colfax Consoli- dated Coal Co.	Jasper.
March 8, 1905	Chas. Krohn	Timberman	Back dislocated.....	Fall of slate	Colfax Consoli- dated Coal Co.	Jasper.
March 10, 1905	Jno. R. Owens	Timberman	Bruised hips	Fall of slate	Des Moines Coal Co.	Polk.
March 12, 1905	Jim Watkins	Miner	Hip dislocated.....	Fall of slate	Enterprise Coal Co.	Polk.
April 27, 1905	J. B. Bird	Miner	Two ribs broken.....	Fall of slate	Des Moines Coal Co.	Polk.
April 2, 1905	Peter Axner	Timberman	Back dislocated.....	Fall of slate	Enterprise Coal Co.	Polk.
May 2, 1905	Dominac Bimbi	Miner	Wrist broken	Runaway car	Saylor Coal Co.	Polk.
May 21, 1905	Emmet Ward	Miner	Leg broken	Fall of slate.....	Norwood Coal Co.	Polk.
May 22, 1905	Wm. Murray	Miner	Strained back.....	Caught between mule and car	Des Moines Coal Co.	Polk.
May 25, 1905	John Ford	Miner	Back injured	Fall of slate.....	Coaldale Fuel Co.	Polk.
May 27, 1905	Wm. Turner	Shotfirer	Arm broken	Flying coal	Saylor Coal Co.	Polk.
May 29, 1905	Jacob Walters	Miner	Both legs and one rib broken	Fall of coal.....	Center Coal Co.	Polk.
May 3, 1905	H. E. Hathaway	Miner	Arm broken	Fall of slate.....	Oak Park Fuel Co.	Polk.
June 3, 1905	Angelo Biondi	Miner	Four ribs broken.....	Fall of slate.....	Saylor Coal Co.	Polk.
June 29, 1905	Robert Holmes	Miner	Hips bruised.....	Fall of slate.....	Colfax Consoli- dated Coal Co.	Jasper.
June 1905	Jacob Watter	Miner	Leg and ribs broken.....	Fall of coal.....	Center Coal Co.	Polk.

FATAL ACCIDENTS IN THE THIRD DISTRICT FOR THE YEAR ENDING JUNE 30, 1904.

GUY WESTON PARKER.

Guy Weston Parker, a miner, in the employ of the Keystone Coal Company of Des Moines, was killed by a fall of slate on the morning of July 6, 1903. Mr. Parker was in his room at the juncture of the fifth south and main entries. When slate fell on him he was standing on the front of the car. The roof had been examined that morning and was considered safe. Charles Moore, pit boss, was near him at the time when he was caught by the falling slate and helped carry him out. A doctor was called and an ambulance secured, and he was taken to his home at 1925 North Washington street. The piece of slate which fell on him was about seven feet long, three feet wide, and would average about nine inches in thickness.

GUS CARLSON.

Gus Carlson, a miner, in the employ of the Saylor Coal Company, was instantly killed in room 10 on the eighth east, on the north side of the Saylor Coal Company's mine, at about 4:30 p. m., July 23, 1903. He was found dead about eighteen feet from the face of his room and directly across his roadway. His limbs were broken and badly crushed by flying coal caused from a shot, evidently fired by himself. There was no fall of slate or any other material about him. He, in company with C. C. Rice and William Wiley, had been firing shots. Each had fired one shot, and Wiley and Rice, not knowing that Carlson intended firing another, had walked out of the entry. At about 6:30 p. m. it was learned that he had been killed, evidently by a second shot fired after Rice and Wiley had gone out.

WILLIAM THOMAS.

William Thomas, a miner, in the employ of the Colfax Consolidated Coal Company, of Colfax, Jasper county, was killed by a fall of slate in mine No. 6, on the 27th day of August, 1903. His left leg was broken above the ankle and the right leg between the knee and ankle, while on his left side three ribs were broken loose from the breast bone and crushed in. He was about seventy years of age. A shot had been put in the entry; the entry was low and he had been warned by R. M. Jones that it was in a dangerous condition. He (Thomas) sounded it and said it was all right, and just then it fell and caught him. The piece that struck him was a feather edge and was not large; would weigh perhaps, two hundred pounds. The accident happened about 10:30 a. m., August 27, 1903, and he died two hours later.

CHARLES HOLMES.

Charles Holmes, a miner, in the employ of the Maple Grove Coal Company, was killed in mine No. 2 of the above company on November 7, 1903. He was at work in his room at the time and was struck by a fall of coal, which dislocated one hip and injured him internally, from which injuries he died at 7:15 of the same day. He was a practical miner, and had been in the employ of the Maple Grove Coal Company for four years.

ANDREW ANDERSON.

Andrew Anderson, a miner employed by the W. D. Johnson Coal company of Boone county, Iowa, was instantly killed by a section of roof falling on him while he was engaged at work in his room in the above mine. The accident resulting in his death occurred at 10 o'clock on the morning of November 17, 1903. He was sixty years of age, a practical miner and had been in the employ of the above company for eighteen years.

GEORGE SMITH.

On December 11, 1903, at 10 a. m., George Smith, superintendent of the Pleasant Valley Coal company, mine No. 3, at Coalville, Webster county, Iowa, was instantly killed by falling into the sump at the bottom of the shaft, which was full of hot water at the time. He was burned from the waist down. The accident was due entirely to his own work. He had caused the exhaust pipe from the steam pump to be turned into the sump, which heated the water to a boiling heat. This also caused steam on the entry and rendered it impossible to see the sump. In that condition he did not know he was so close to the shaft and accidentally walked into the sump.

ERNEST FOREMAN.

On October 20, 1903, Earnest Foreman, a mule driver, in the employ of the Gibson Coal and Mining Company, No. 4 mine, was fatally injured on the main entry, about 1,500 feet from the main shaft. The accident happened about 9 a. m., and injury consisted in the outer part of the backbone being crushed about one inch in width. This accident was caused by falling slate, and at the time was not thought to be fatal and was so reported to this office; but later Mr. Foreman succumbed to his injuries, dying on November 19, 1903.

JOSEPH SMITH.

Joseph Smith was fatally injured at the Norwood Coal Mine on April 27, 1904, at about 10:45 a. m., by a fall of slate. The accident happened twenty feet inside of the last break through on the third west entry, south side. His back was broken, and he also received other internal injuries. He was immediately removed to the hospital, but succumbed to his injuries a few days later. It is presumed the injured person went to look for work and went below without the knowledge of any one in charge. The company shot examiners go to work about 10:30 a. m., and had called for a cage and injured person got on with them, and started around the mine in search of mine foreman. The injured man was not in the employ of the company.

HOYT DUNSKIN.

Hoyt Dunskin, a driver, employed by the Saylor Coal Company, was fatally injured at 11:20 A. M., on the morning of December 29, 1903. Mr. Dunskin was coming out of the first east entry on the south side with a loaded trip of cars, and in some unknown way he fell under the trip and was instantly killed. This happened opposite room twelve. There was no one present at the time of his death. He was killed on a grade, and the supposition is, that tail chain came unhooked and that he attempted to recouple while cars were in motion. He was found under his trip by dayman. His back was broken and he was internally injured.

HARRY GIBSON.

Harry Gibson, a shotfirer, in the employ of the Colfax Consolidated Coal Company, mine No. 6, Colfax, Iowa, was instantly killed while performing his duties as shotfirer in mine No. 6, between the hours 4 and 6 P. M., June 28, 1904. When accident occurred he was in the first plug entry from the fifth west, about twenty or twenty-five feet from the first plug entry. His death was caused by flying coal from a shot in a break-through near the face of plug entry off fifth west. He had evidently lighted a few shots on the inside entry, and expected to have time to go from there to the outside plug entry and light that shot and get out before the break-through shot would go off, but it seems there was not time enough for him to make the run back and the shot must have caught him while in there. The left side of his head was crushed, arms broken and many bruises and cuts covering the body, so that death must have resulted instantly.

JAMES CROWE.

On July 22, 1904, James Crowe, vice-president and superintendent of the Heaps & Crowe Coal company of Boone, Iowa, was found dead in the sump of the main shaft. He had evidently been caught in some unknown manner between the cage and the side of the shaft and dragged from the bottom to the ground landing; from there his body dropped back into the sump, a distance of 225 feet, where it was found two or three hours later. Coroner J. C. Walker was summoned and decided that an inquest before a jury was unnecessary, as death was caused in a purely accidental manner, and that no blame attached to anyone connected with the mine. Mr. Crowe was one of the well known coal operators of Boone county.

ED STUART.

Ed Stuart, a driver in the employ of the Saylor Coal company, was instantly killed in the mine of the above company on September 7, 1904, by a loaded car passing over him. Mr. Stuart was employed at the mine as a regular mule driver and was coming out of the first east entry on the south side of the mine with a trip of cars at about 3 o'clock on above date when the accident occurred. It can not be determined by what means Mr. Stuart came to be under the cars, as no one witnessed the accident, but it is evident he was killed instantly, as the first car passed over his body, breaking his back and crushing him internally. He was found under the front of the second car a few minutes after the accident occurred by D. W. Roberts, who was coming out of the entry.

ADAM WAITKUM.

Adam Waitkum, a miner in the employ of the Smith-Low Coal Company of Carbondale, Iowa, was fatally injured by a fall of slate which occurred on the afternoon of February 6, 1905. He was in room 2, third north entry, when fall of slate occurred, crushing him internally. The accident occurred in mine No. 4. Mr. Waitkum had been in the employ of the company about four months.

THOMAS HAMMOND.

On February 2, 1905, a fatal accident occurred to Thos. Hammond, a mule driver in the employ of the Elko Coal and Mining Company of Des Moines, Iowa. Mr. Hammond was on the top of a hill coming out to the shaft bottom with a loaded trip of cars, when he was evidently kicked by the mule under the loaded cars. His leg was broken and he was hurt internally. The cause of the accident is only known by his own statement, which was that the mule kicked him. Accident happened February 2, 1905, at 3:30 P. M., and he died two days later. He was twenty-seven years old, and had been in the employ of the company for eight weeks.

JOHN BACON.

John Bacon was fatally injured in the mine of the Oak Park Fuel Company of Des Moines, Iowa, on January 18, 1905. Mr. Bacon was working with his father in the first east entry on the above date, and while in the act of pouring powder from a keg into a coffee pot that was being utilized for a powder can, it is supposed that a spark fell from his lamp, which ignited a full keg of powder, burning him severely, both externally and internally. He was at once removed to the hospital where he died twenty-four hours later.

HENRY CONNACK.

Henry Connack, a miner in the employ of the Bennett Bros. Coal company of Des Moines, Iowa, was fatally injured at 9:30 A. M. on January 18, 1905, by a fall of slate in above mine. He was in the first south entry, forty-five or fifty feet from the face, when a fall of slate occurred, crushing him internally, from which injuries he died two days later. Timbermen were at work timbering up place six or eight feet from where slate fell when the accident occurred. He was twenty-six years old and had been in the employ of the company about three months.

SAMUEL TAYLOR.

Samuel Taylor, a miner, in the employ of the West Riverside Coal Company, was killed in this mine on the 17th of January, 1905. While in the act of mining off a shot in the face of his room, a piece of draw slate, weighing about one ton, fell on him, crushing him to the floor and injuring him internally, from which injuries he died the following day. Mr. Taylor was warned to stay from under the slate, but it seems he was indifferent to the danger, receiving injuries as above stated.

L. A. BROWN.

L. A. Brown, a miner in the employ of the Diamond Joe Coal Company of Runnells, Iowa, was instantly killed at 11 A. M. November 17, 1904. He was in room 7, inside of fourth east entry on main north when fall of slate occurred. The fall of slate was caused by two unknown slips in the roof coming together in a V shape. He was taken from under the slate by H. H. Innis, J. B. Williams and H. H. Davis, fellow miners. It took them fifteen or twenty minutes to remove slate from off of body as the slate would weigh between two and three tons. Mr. Brown was but seventeen years old. He had been in the employ of the company for three years.

PETER JOHNSON.

Peter Johnson, a miner in the employ of the Smith-Lowe Coal company of Carbondale, Iowa, was fatally injured in mine No. 3 of said company on the morning of November 30, 1904. He was at work in room 2, off of room 19, sixth east entry, when fall of slate occurred, crushing him around chest and shoulders. After he was taken from under the slate he was able to walk to the street car and return to his home, but died from his injuries two days later. He was an old experienced miner and had been in the employ of the company for three and one-half years.

WILLIAM LAIDLER.

William Laidler, a miner, in the employ of the Ditchburn Coal Company of Angus, Iowa, was fatally injured in the mine of the above company about 3:30 P. M. October 6, 1904, from which injuries he died two days later. He was drawing a pillar. The roof had made one fall and had broken off. He holed through the pillar and left a stump. As cars were plentiful that afternoon he thought he could get a car or two off the stump, and in so doing a chunk of draw slate fell on him, breaking his back and injuring him about the head and face. He was an old time experienced mine.

JOHN W. LOGAN.

John W. Logan, a miner in the employ of the Saylor Coal Company was fatally injured at said mine on the afternoon of October 12, 1904. Accident occurred in room 3, ninth east north entry. He was undermining his shot when coal fell on him crushing his skull. He was found a few minutes later by Robert Heathcote, Luke Wilfan and Frank Wilfan. He was not dead when taken from under the coal, but died in about three minutes after being removed.

**FOLLOWING IS THE LIST OF NON-FATAL ACCIDENTS WHICH
OCCURRED IN THE THIRD DISTRICT OF IOWA FOR THE
TWO YEARS ENDING JUNE 30, 1905.**

July 9, 1903, John Wilding, arm broken coupling cars at Colfax, Consolidated Coal Company, Colfax, Jasper county.

July 22, 1903, J. T. Jones, timberman, finger cut off by ax while timbering at Colfax, Consolidated Coal Company, Jasper county.

July 28, 1903, George Ewing, driver, internally injured by fall of slate at Crooked Creek Mine No. 4, Webster county.

September 28, 1903, Joseph Birmingham, laborer, skull broken by fall of slate at Saylor coal mine, Polk county.

September 29, 1903, Thomas Colgon, miner, hip bruised and ribs broken by fall of slate at Hanlon coal mine, Scott county.

October, 1903, J. R. Anderson, miner, ankle broken by fall of slate at Enterprise mine, Polk county.

November 11, 1903, William Underwood, miner, collar bone broken and ankle dislocated by fall of slate in mine of the Goodwin Coal Company, Grand Junction, Greene county.

November 17, 1903, H. F. Scott, miner, back hurt by fall of slate at Colfax, Consolidated Coal Company's mine, Jasper county.

November 21, 1903, John Killion, timberman, foot fractured by fall of slate in mine of Boone County Coal Company.

November 21, 1903, Andrew Johnson, miner, leg broken by fall of slate at Boone County Coal Company, Boone County.

December 8, 1903, George Newcomb, miner, finger pinched off riding extras at mine of Colfax Consolidated Coal Company.

January 14, 1904, Mark Jones, miner, bone of leg fractured by fall of slate at mine of Des Moines Coal Company, Polk county.

January 18, 1904, B. H. McCarty, timberman, hip broken by fall of timber at mine of Des Moines Coal Company, Polk county.

January 20, 1904, John Birmingham, miner, leg broken by fall of slate in the W. D. Johnson mine, Boone county.

January 21, 1904, Fred Norwood, pit foreman, back dislocated and mashed through hips by fall of slate at Norwood mine, Polk county.

February 4, 1904, W. J. Jackson, driver, two fingers mashed off by car in West Riverside mine, Polk county.

February 13, 1904, George Cook, miner, rib broken by fall of slate in Smith-Lowe mine, Carbondale, Polk county.

February 25, 1904, David Scott, miner, leg broken by fall of slate in Smith-Lowe mine, Carbondale, Polk county.

Winter 1903-4, T. B. Smith, miner, leg broken by fall of slate in mine of Enterprise Coal Company, Polk county.

March 19, 1904, Malone, miner, shoulder and ribs fractured by fall of coal at mine of Des Moines Coal Company, Polk county.

April 27, 1904, Roy Mercer, miner, crushed about hips by cars at mine of Des Moines Coal Company, Polk county.

May 10, 1904, Charles Lundeen, roadman, leg broken by fall of rock at mine of Rogers Coal Company, Boone county.

June 28, 1904, Guy Stover, miner, one bone broken in left foot at mine of Colfax Consolidated Coal Company, Colfax, Jasper county.

July 8, 1904, Dave Budie, cager, arm broken by cage at mine of Colfax Consolidated Coal Company, Colfax, Jasper county.

July 23, 1904, E. H. Ballard, miner, arm broken by fall of slate in mine of Greenbrier Coal Company, Jamaica, Guthrie county.

July 25, 1904, John Sullivan, driver, thighs bruised by falling timbers in mine of Saylor Coal Company, Polk county.

September 3, 1904, George Wisham, driver, leg broken by fall of slate in mine of Smith-Lowe Coal Company, Polk county.

September 8, 1904, George Rupe, miner, badly bruised back and legs by fall of slate in mine of Coaldale Fuel Company, Polk county.

September 19, 1904, H. DeVan, driver, arm broken by car running off track at mine of Smith-Lowe Coal Company, Polk county.

September 21, 1904, John Cotton, miner, leg broken by fall of slate in mine of Center Coal Company, Polk county.

September 23, 1904, John Heffron, miner, two ribs broken by being caught between top of car and collar overhead in mine of Coaldale Fuel Company, Polk county.

October 31, 1904, Ed Cocoonut, miner and shotfirer, leg broken by flying coal, mine of Enterprise Coal Company, Polk county.

December 1, 1904, Albert Davis, miner, leg broken by fall of slate in mine of Albert Davis, Pilot Mound, Boone county.

December 3, 1904, Joe Bostoletti, miner, bone of foot broken by fall of slate, Colfax Consolidated Coal Company, Jasper county.

December 5, 1904, Albert Grandquist, driver, back dislocated and four ribs broken, caught between cars and timber, Colfax Consolidated Coal Company, Colfax, Jasper county.

December 6, 1904, Joe Lilly, miner, badly burned about face and back by powder explosion in mine of the Maple Block Coal Company, Polk county.

January 21, 1905, Peter Frisk, miner, leg broken by fall of slate in mine of the Glenwood Coal Company, Polk county.

January 23, 1905, Charles Evans, shotfirer, cut about head, got lost in room after lighting shot. Enterprise Coal Company.

January 24, 1905, M. V. Carpenter, miner, back slightly hurt by fall of slate in mine of Smith-Lowe Coal Company, Polk county.

February 15, 1905, W. Robinson, driver, ear partly kicked off by mule in mine of Norwood Coal Company, Polk county.

February 17, 1905, Jasper Kinney, miner, both legs and three ribs broken by flying coal from explosion in mine of the Keystone Coal Company, Polk county.

February 23, 1905, John Peterson, miner, two ribs and one ankle broken by fall of slate in mine of Madison Coal Company, Polk county.

February 25, 1905, A. Trevethon, miner, four ribs broken by fall of slate in Colfax Consolidated Coal Company's mine, Colfax.

March 2, 1905, N. E. Setz, miner, thumb taken off at first joint by fall of slate, Colfax Consolidated Coal Company, Jasper county.

March 4, 1905, Aug. Storchevich, miner, two fingers taken off in sheave wheel, Colfax Consolidated Coal Company, Jasper county.

March 8, 1905, Charles Krohn, driver and timberman, back dislocated and hurt about lungs and kidneys, fall of slate, Colfax Consolidated Coal Company, Colfax, Jasper county.

March 10, 1905, John R. Owens, timberman, squeezed through hips and back by fall of slate, Des Moines Coal Company, Polk county.

April 12, 1905, Jim Watkins, miner, hip dislocated by fall of slate in mine of Enterprise Coal Company, Polk county.

April 27, 1905, J. B. Bird, miner, two ribs broken by fall of slate at mine of Des Moines Coal Company.

May 2, 1905, Peter Axuer, timberman, back dislocated by fall of slate in mine of Enterprise Coal Company, Polk county.

May 2, 1905, Dominac Bimbi, miner, wrist broken by car breaking loose in mine of Saylor Coal Company.

May 21, 1905, Emmet Ward, miner, leg broken by fall of slate in mine of Norwood Coal Company, Polk county.

May 22, 1905, William Murray, driver, strained back and hips, was caught between mule and car in mine of Des Moines Coal Company.

May 25, 1905, John Ford, miner, back injured by fall of slate in mine of Coaldale Fuel Company, Polk county.

May 27, 1905, Wm. Turner, shotfirer and shot examiner, arm broken by flying coal while firing shots at mine of Saylor Coal Company, Polk county.

May 29, 1905, Jacob Walters, miner, both legs and one rib broken by falling coal at mine of Center Coal Mining Company, Polk county.

June 3, 1905, H. E. Hathaway, miner, arm broken by fall of slate in mine of Oak Park Fuel Company, Polk county.

June 28, 1905, Angelo Biondi, miner, four ribs broken by fall of slate at mine of Saylor Coal Company, Polk county.

June 29, 1905, Robert Holmes, miner, Bruised through hips and shoulders by fall of slate at mine of Colfax Consolidated Coal Company, Colfax, Jasper county.

June, 1905, Jacob Watter, miner, leg and ribs broken by falling coal at mine of Center Coal Mining Company, Polk county.