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ELEVENTH BIENNIAL REPORT

OF THE

STATE MINE INSPECTORS

TO THE

GOVERNOR OF THE STATE OF IOWA.

FOR THE

Two Years Ending June 30, 1903.

JOHN VERNER, District No. 1.

EDWARD SWEENEY, District No. 2.

JAMES W. MILLER, District No. 3.

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BOARD OF EXAMINERS
FOR MINE INSPECTORS, MINE FOREMEN, PIT BOSSES AND
HOISTING ENGINEERS.

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JOHN CALDWELL, *Secretary*, Seymour.
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EDWARD GRAY, Des Moines.
JOHN OWENS, Beacon.

REVIEW OF STATISTICS REGARDING MINING IN IOWA
FOR THE TWO YEARS ENDING JUNE 30, 1903.

The coal mining industry of Iowa made greater advance during the last two years than during any like period of time since mining commenced in the state. The year ending June 30, 1903, was especially prosperous and established a new record in the annual amount of coal produced. For the first time the annual coal production in the state exceeded 6,000,000 tons.

The following tables give a summary of the number of mines in the three inspection districts, their coal output and number of men employed.

Number of mines in each district, their coal output, number of miners and other employes for the year ending June 30, 1902.

DISTRICT.	Number of mines	Tons of coal of all grades produced.	Number of miners employed.	Number of other employes.	Total number employed.
Number 1.....	119	2,918,535	4,161	1,776	5,937
Number 2.....	97	1,542,510	2,296	921	3,187
Number 3.....	18	1,653,152	2,882	906	3,778
Total.....	384	5,514,206	9,309	3,603	13,002

Number of mines in each district, their coal output, number of miners and other employes for the year ending June 30, 1903.

DISTRICT.	Number of mines	Tons of coal of all grades produced.	Number of miners employed.	Number of other employes.	Total number employed.
Number 1.....	124	2,883,675	4,355	2,004	6,359
Number 2.....	97	1,406,033	2,133	1,009	3,142
Number 3.....	92	1,865,456	2,681	1,010	3,691
Total.....	313	6,155,164	9,169	4,023	13,192

Number of mines in operation in each county, their coal output, number of miners and other employes for the year ending June 30, 1902.

Number.	COUNTY.	Number of mines	Tons of coal of all grades produced.	Number of miners employed.	Number of other employes.	Total number employed.
1	Monroe	16	1,268,973	1,779	812	2,591
2	Polk	30	981,610	1,264	467	1,731
3	Mahaska	26	734,885	962	433	1,400
4	Appanoose	18	733,973	1,752	715	2,467
5	Wapello	18	318,029	414	214	628
6	Marion	18	303,042	500	147	647
7	Boone	17	286,300	680	211	891
8	Lucas	4	235,468	289	160	449
9	Jasper	17	232,000	353	95	453
10	Keokuk	15	138,880	248	78	326
11	Webster	16	132,477	255	130	385
12	Wayne	8	45,950	133	53	186
13	Dallas	7	34,750	83	38	121
14	Scott	12	28,973	106	18	124
15	Warren	10	21,435	60	19	79
16	Taylor	7	20,556	83	17	100
17	Guthrie	12	17,250	121	39	160
18	Van Buren	7	16,713	42	15	57
19	Greene	4	16,192	46	16	62
20	Adams	12	11,765	100	12	112
21	Jefferson	4	4,785	22	6	28
22	Davis	4	3,850	18	4	22
23	Story	1	2,200	9	3	12
24	Page	4	1,850	25	7	32
	Total	334	5,514,206	9,309	3,693	13,002

Number of mines in operation in each county, their coal output, number of miners and other employes for the year ending June 30, 1903.

Number.	COUNTY.	Number of mines	Tons of coal of all grades produced.	Number of miners employed.	Number of other employes.	Total number employed.
1	Monroe	19	1,600,148	1,758	1,081	2,839
2	Polk	25	996,573	1,127	483	1,610
3	Appanoose	70	892,692	1,889	610	2,499
4	Mahaska	26	678,826	929	453	1,382
5	Wapello	13	365,165	506	254	765
6	Jasper	13	323,312	508	182	700
7	Marion	18	293,875	400	175	575
8	Boone	12	288,055	480	165	645
9	Lucas	3	269,539	327	202	529
10	Webster	10	159,990	280	104	384
11	Keokuk	15	82,532	158	70	226
12	Wayne	8	74,542	185	65	250
13	Taylor	8	20,618	74	22	96
14	Warren	10	20,265	65	25	90
15	Dallas	6	19,990	75	35	110
16	Van Buren	7	18,740	52	20	72
17	Scott	7	18,280	80	12	92
18	Guthrie	13	16,545	75	15	90
19	Adams	12	16,462	85	16	101
20	Greene	6	12,711	53	9	65
21	Page	4	9,674	37	8	45
22	Jefferson	4	4,000	13	3	16
23	Davis	4	3,200	12	4	16
	Total	313	6,185,734	9,169	4,023	13,192

ACCIDENTS.

During the year ending June 30, 1902, fifty-five fatal and seventy-nine serious accidents occurred in the mines of the state. The exceedingly large number of fatal accidents is a matter of much regret, and was due principally to a number of disastrous mine explosions which occurred during that year. Twenty-nine deaths were caused through blasting operations. A summary for the three districts follows:

DISTRICT NO. 1.

Number of fatal accidents, 11.

Cause of accidents:

Falls of slate or coal	6
Crushed by railroad car	1
Explosion	4

DISTRICT NO. 2.

Number of fatal accidents, 31.

Cause of accidents:

Falls of slate or coal	9
Struck by flying coal from shot	1
Caught between cage and shaft	1
Explosion	20

DISTRICT NO. 3.

Number of fatal accidents, 13.

Cause of accidents:

Fall of slate or coal	7
Struck by coal flying from shot	4
Falling down shaft	1
Caught under pit car	1

Total 55

SERIOUS ACCIDENTS.

District No. 1 25

District No. 2 35

District No. 3 19

Total 79

During the year ending June 30, 1903, twenty-one fatal and fifty-eight serious accidents were reported. No lives were lost through explosions and the record for that year is very gratifying when compared with the record of

previous years. The shot examination law was certainly a large factor in preventing loss of life, and its enactment has proved a blessing to the operators and miners of Iowa.

DISTRICT NO. 1.

Number of fatal accidents, 11.

Cause of accidents:

Struck by timber.....	1
Fall of slate or coal.....	8
Premature explosion of dynamite	1
Caught under pit car	1

DISTRICT NO. 2.

Number of fatal accidents, 5.

Cause of accidents:

Fall of slate.....	3
Falling down shaft.....	1
Caught under pit car	1

DISTRICT NO. 3.

Number of fatal accidents, 5.

Cause of accidents:

Fall of slate.....	3
Falling down shaft.....	1
Struck by coal flying from shot	1

Total 21

SERIOUS ACCIDENTS.

District No. 1	27
District No. 2	18
District No. 3	13
Total	58

Fatal and serious accidents in the mines of the state during the year ending June 30, 1902, 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.	11	25	2,318,535	210,776	92,741	5,937	537	237
District No. 2.	31	35	1,542,519	49,753	44,072	3,187	103	92
District No. 3.	13	19	1,653,152	127,165	85,005	3,878	221	204
Total...	55	79	5,514,206	100,258	69,802	13,002	236	164

Fatal and serious accidents in the mines of the state during the year ending June 30, 1903, 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.	11	27	2,883,675	262,152	106,803	6,959	578	235
District No. 2.	5	18	1,466,603	293,320	81,478	3,142	628	173
District No. 3.	5	13	1,835,456	367,091	125,804	3,601	738	284
Total.....	21	58	6,185,734	294,559	106,650	13,192	628	227

BIENNIAL REPORT OF THE
FIRST DISTRICT

EMBRACING THE COUNTIES OF

MONROE,
LUCAS,
TAYLOR,
ADAMS,

APPANOOSE,
WAYNE,
PAGE.

JOHN VERNER, INSPECTOR.

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, 1903.

Very respectfully,

JOHN VERNER,

Inspector First District.

REPORT OF FIRST DISTRICT.

My work as inspector of the first district, comprising the counties of Monroe, Appanoose, Lucas, Wayne, Taylor, Page and Adams, commenced April 1, 1902. As I was fairly well acquainted with the conditions in nearly all the mines in the territory assigned me I had few of the difficulties to overcome that come to a mine inspector in commencing in a field he knows little about. From April 1, 1902, to June 30, 1903, 283 inspections were made and twenty-three scales were tested, and I am pleased to be able to report that appreciable progress was made in that time in improving the mines and their equipments. The improvements made in and about the mines of the district, of which more will be said later on, have been extensive and valuable, and it is a pleasing feature that the operators as well as the miners shared in the benefits that have come from them.

The mining industry of the district has not suffered or been disturbed by strikes or lockouts. The relations between operators and miners have been friendly, and the yearly agreement between them as to wages and labor conditions practically removed the elements likely to bring discord.

The coal production of the district was very much larger during the last two years than during any like period of time in the past. Last year especially showed substantial gains. The cessation of work in the anthracite mines during the summer of 1902 had undoubtedly considerable influence in stimulating the coal trade in this territory. It seems unlikely that all the trade that came to the Iowa coal operator on that account can be retained in the future, but it appears reasonably certain that the advantage gained will prove a fairly permanent one, and that a considerable number of those who purchased Iowa coal last year through force of circumstances have found out that it is a very fair fuel after all, and will remain willing customers in the future.

The prospect for the future development of the coal wealth of the district appears to be good. A number of new mines have been opened recently, others are being developed now and the opening of others will commence soon. The prospecting for new coalfields is carried on with greater activity than ever before.

The coal mined in the district during the year ending June 30, 1903, amounted to 2,883,675 tons, exceeding that of the preceding year by 565,140 tons. This output came from 124 mines giving direct employment to 6,359 persons. Every county in the district showed a gain in coal production; in some counties the gain was small, in others quite marked. The gain was mainly due to the more steady operation of the mines last year and the correspondingly increased production by the individual miner. In Monroe county the annual output of coal per miner was raised from 713 tons (mine

run), for the year ending June 30, 1902, to 910 tons for last year. In Appanoose county the output of the individual miner reached 472 tons (lump) last year as against 419 tons in the year preceding. The Lucas county mines showed 824 tons of coal (mine run) per miner last year. The year before the average was 814 tons. In Wayne county the output increased from 345 tons (lump), year before last, to 403 tons last year.

The following tables give 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 employes in District No. 1 for the year ending June 30, 1902.

COUNTY.	NUMBER OF MINES.		TONS OF COAL OF ALL GRADES PRODUCED.		NUMBER OF MINERS.		NUMBER OF OTHER EMPLOYES.	
	Increase.	Decrease.	Increase.	Decrease.	Increase.	Decrease.	Increase.	Decrease.
Monroe	3		331,175			21	200	
Appanoose	2		153,719		137			105
Lucas		1	34,071		38			42
Wayne			28,592		52			12
Taylor	1		62		9			5
Page			7,824		12			1
Adams			4,697		15			4
Total	5		595,140		194		228	

Number of mines in operation in each county, their coal output, number of miners and other employes in District No. 1 for the year ending June 30, 1903.

COUNTY.	Number of miners.	Tons of coal of all grades produced.	Number of miners employed.	Number of other employes.	Total number employed.
Appanoose	70	892,692	1,839	610	2,449
Lucas	3	269,539	327	202	529
Wayne	3	74,542	125	65	190
Taylor	3	20,618	74	22	96
Page	4	9,674	37	3	40
Adams	12	16,462	85	16	101
Total	124	2,883,675	4,955	2,004	6,959

Increase or decrease in the number of mines, etc., for the year ending June 30, 1903, in comparison with the year ending June 30, 1902.

COUNTY.	NUMBER OF MINES.		TONS OF COAL OF ALL GRADES PRODUCED.		NUMBER OF MINERS.		NUMBER OF OTHER EMPLOYES.	
	Increase.	Decrease.	Increase.	Decrease.	Increase.	Decrease.	Increase.	Decrease.
Monroe	3		331,175			21	200	
Appanoose	2		153,719		137			105
Lucas		1	34,071		38			42
Wayne			28,592		52			12
Taylor	1		62		9			5
Page			7,824		12			1
Adams			4,697		15			4
Total	5		595,140		194		228	

Coal production in tons of the counties now comprising the first district for the last six years.

COUNTY.	1898.	1899.	1900.	1901.	1902.	1903.	TOTAL.
Monroe	500,800	662,500	641,928	937,750	1,208,973	1,600,148	5,701,509
Appanoose	421,100	444,282	645,232	650,400	739,973	892,692	3,787,729
Lucas	10,800	12,800	133,196	249,803	235,468	269,539	911,606
Wayne	41,200	48,300	48,800	50,200	45,950	74,542	308,992
Taylor	11,800	14,100	22,682	20,400	20,556	20,618	110,156
Page	5,050	6,085		1,500	1,850	9,614	24,559
Adams	21,300	22,800	16,370	18,881	11,765	16,462	107,078
Total	1,101,550	1,120,867	1,508,258	1,928,634	2,818,535	2,883,675	10,951,510

MINES OPENED AND MINES ABANDONED IN THE LAST TWO YEARS.

MONROE COUNTY.

MINES OPENED.	MINES ABANDONED
No. 4. Wapello Coal Co. No. 1. Excelsior Coal Co. No. 6. Phillips Fuel Co. No. 2. Miller Creek Coal Co. No. 3. Miller Creek Coal Co.	No. 1. Wapello Coal Co. Frederic. Smoky Hollow Coal Co. No. 1. Deep Vein Coal Co.

APPANOOSE COUNTY.

Oriental Coal Co. Exline Coal Co. No. 7 Peerless Coal Co. No. 30. Manufacturers Coal and Coke Co.	Economy Coal Co. No. 7. Centerville Block Coal Co.
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LUCAS COUNTY.

Inland Fuel Co.	Lucas & Cleveland Coal Co
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WAYNE COUNTY.

E. A. Sipes. No. 2. L. Frye.	
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TAYLOR COUNTY.

No. 2. Campbell Coal Co.	
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PAGE COUNTY.

Johnston & Company. Winger Bros. I. Vanarsdal.	
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CONDITIONS OF THE MINES WITH REGARD TO THEIR SAFETY.

It seems unnecessary to give the conditions existing at each mine in detail, as that already has been done in the monthly reports made by me to the Governor. In a general way it can be stated, however, that a commendable spirit has been shown on the part of most operators to get their mines in such condition, that mining may be carried on in them as safely as possible. The men selected by them to handle machinery and look after the safety of the mine workers have proved themselves generally competent and reliable. The traveling roads were fairly well looked after, and the fact that not a miner, while passing through them in going to or returning from his working place, was injured during the last two years, showed that such was the case. In a number of mines, having mechanical haulage, separate traveling ways have been provided, to be used during working hours while the haulage system was in motion. The roads leading to the escapes have been kept reasonably safe and unobstructed. The escapes, however, and especially the shafts, were not found always in available condition, due to the accumulation of ice in them during the winter season. While it may be difficult to prevent ice forming in some of these shafts, they could have been kept ready for use any time, even in the coldest weather, if only timely attention had been given to the matter and the necessary work had been done to keep them open.

The safety devices provided for by the mining law, have been found in most cases to be in satisfactory condition, and no accident of a serious nature occurred in the last two years owing to the absence or defectiveness of these devices. This does not mean, however, that they were always in good working order at every mine. In the few cases noticed, where any of the devices were found out of order, the neglect to keep them in repair appeared to be due to the fact that no one in particular was charged with looking after them. In above instances, and whenever occasion seemed to require it, I admonished the hoisting engineers in charge, that I should hold them responsible for the safe and reliable condition of the whole hoisting apparatus from the engine to the cage and its appurtenances, and that I considered it their business to know that every single part of the apparatus was in perfect working order, so men could be lowered and hoisted with the utmost safety. The law to license hoisting engineers was evidently enacted to provide better protection to life. The state of Iowa, through the board of examiners, declared the men receiving such license to be competent to bring about this result and as the state has assumed a certain responsibility in this matter, it and the people directly interested have a right to expect good service to that end. Such service can be rendered only by the engineer having full control of the whole hoisting apparatus and by his being held responsible for the reliable working of all its parts.

MINE VENTILATION.

Of twenty-seven mines with an output of more than 25,000 tons of coal each last year, twenty-six were ventilated by fans and one by furnace. Of the forty-six mines with a yearly output of from 5,000 to 25,000 tons each, eighteen were ventilated by fans, twenty-six by furnaces and two by steam jets, and of the mines with an output of less than 5,000 tons, one had fan ventilation, many had small furnaces, while some of the small country mines, working only during the winter, depended on natural ventilation. I am pleased to be able to state that, in a general way, appreciable progress has been made during the last year to improve the ventilation of the mines of this district. Air courses have been cleaned and enlarged, at some mines better ventilating machinery has been provided and at others additional air shafts have been sunk. In this connection it can be said that very creditable work has been done by some of the operators. Since July 1, 1902, four air shafts have been sunk to improve the ventilation of mines that had been in operation for some years, four others of this class were commenced and will be completed at an early date, while eight air shafts were sunk for mines recently opened, making a total of sixteen of these shafts provided in the last year.

Improvements in mining conditions are necessarily of slow growth, and their need is often not sufficiently appreciated, but in the matter of mine ventilation I believe it can be truthfully said that the operators of this district realize more and more that, apart from the human view of the case, efficient ventilation of their mines is a very desirable thing to have, because it really is a good investment bringing fair returns on the money paid out to secure it. The work now going on or contemplated in this direction in the district, indicates that a material improvement in mine ventilation may be expected in the near future.

SCALES.

Of the twenty-three scales tested since April 1, 1902, some were not found in satisfactory condition, but they were either adjusted to weigh accurately or were replaced by new scales. Several track scales were taken up this summer, while the coal trade was dull and the work could be done with the least loss to all concerned, sent to the factory and thoroughly overhauled, adjusted and replaced by competent men, so it appears that, for the time being at least, the coal weighing apparatus of the district is in very fair shape.

SHOT EXAMINERS.

The shot examination law, enacted by the Twenty-ninth General Assembly, became effective April 17, 1902. By May 1st provisions had been made at all the mines in the district affected by the law, so the shots prepared in them could be examined by competent persons. In order to help these men to do their work as effectively and with as much uniformity as possible, the following circular was prepared and mailed to them.

To the Shot Examiners of the First Inspection District of Iowa:

"In all mines, where coal is blasted from the solid, competent persons shall be employed to examine all shots before they are charged. Said examiners to have the power to prohibit the charging and firing of any shot which, in their judgment, is unsafe. Before entering upon the discharge of their duties, said examiners shall give proof of their competency to the state mine inspector of the district in which the mine, where they are employed, is located, and said inspector shall certify to the operator of each mine the persons who have given proof of their competency to act in the capacity of shot examiners. The state mine inspector to have the power to refuse to give permission to any person to act as shot examiner who, in his judgment, is not sufficiently competent; or he may revoke the permission granted, should it appear that a shot examiner is negligent or careless in the performance of his work."

This is the law relating to shot examination passed by the Twenty-ninth General Assembly of Iowa. Under the present mode of mining the coal in this state by the use of powder, it would be difficult to construct a law on shot examination which promises better results and a greater measure of safety than the above. It centers the responsibility on the few; it gives the inspector the right of selection and removal; it gives the shot examiner freedom of action, which perhaps would be lacking sometimes, if the unrestricted right of selecting shot examiners remained with the operator, and I am sincere in the belief that, if you do your duty fairly and fearlessly, there is reasonable assurance that the danger from explosions will not only be successfully overcome, but a greater efficiency of workmanship will result.

Reasonable speed in examination of shots is desirable, but thorough and careful work is essential. You should commence your work as early in the day as circumstances will permit. Gain and hold the confidence and respect of the miners by your fairness, impartiality and firmness. If you have occasion to reject a shot as prepared, which you might accept if some additional work were done on it or some alteration made, tell the miner what should be done to make the shot acceptable, and if he is willing to follow your advice, reward his willingness by visiting his place again before firing time and pass the shot, if it has been prepared as you directed. If in the above case the miner is unwilling to do as you request, do not stop to argue the case, but reject the shot and pass on to the next place.

In examining a shot take into consideration the depth and direction of the hole, the size and shape of the shot, the condition of the coal, roof and bottom, the location of the hole with regard to remaining parts of previously fired holes, cracks and fissures made by them, the location of the hole with regard to adjoining working places and the amount of powder to be used. By making inquiry as to the amount of powder to be used, it is not intended that you should determine the size of the charge; that part should be left largely with the miner, but you should be informed about it, so you can determine whether the charge is safe or not.

A shot may be termed safe when there is reasonable assurance that the force and heat due to the explosion of the powder will be used up almost completely in the removal of the coal or other material; a shot may be considered dangerous when it appears that in all probability the major portion of the force and heat developed by the powder's explosion will not be so used up, but be projected into the dust-laden mine air in the immediate vicinity of such shot, with results that may prove disastrous.

To be more definite, however, your attention is called to the following shots; some of them should be rejected outright, and the others should share the same fate if, in your judgment, danger is likely to come from them:

1. A hole which has blown the tamping must not be recharged and fired again. The dangerous character of such shots was recognized by the recent conference of the miners and operators in Des Moines, and in their yearly agreement they condemned them as unsafe.

2. A hole drilled near the remaining part of an old hole or cracks and fissures made by previously fired shots, if there is danger of the force and flame of the charge finding ready vent through such part of an old hole, crack or fissure, must not be fired.

3. A hole located along the rib should receive your careful attention. If it is drilled in such manner that there is probability of the force of the charge being projected into the adjacent working place, it is a dangerous shot and must be rejected.

4. A shot measuring more across the point than the height of the material to be removed, especially if the hole is gripping, is in most cases not only unprofitable to the miner, but more or less dangerous and should not be accepted.

5. Holes drilled parallel with the cut in narrow work should not be drilled ahead of the back of the cut. It is true that under favorable conditions such shots have been fired without bad results, but in order to accord all as uniform treatment as possible and to relieve you of unnecessary responsibility you should invariably reject them.

6. A shot following another and depending on the success of the first is an indication of lack of skill on the part of the miner in working his place properly, and I advise you to reject such shots. In mines where the practice prevails of drilling sump holes to relieve the heavier top shots, such top shots depending on properly located sump shots may be accepted, provided that the shots are not fired together and that the top shot cannot be fired should the sump shot fail to do its work.

7. Holes drilled parallel with the plane of stratification, especially if the coal contains smooth and frequent partings, are not safe holes on account of the possibility of an easy release of the charge by having only to remove the thin layer of coal between such partings.

8. An improperly or insufficiently tamped hole is dangerous, and you will insist that the miner use the kind of tamping prescribed in the Des Moines agreement and that he tamp the hole firmly from the powder to its mouth. The matter of properly tamping the holes is an important factor in promoting safety at firing time, and I urge you to see to it that the provisions of the agreement with regard to tamping are strictly carried out.

9. Short holes, holes over or behind a bowlder, breaking down shots in narrow work, slim shots, shots with slight heels and thickening rapidly towards the point and shots with obstructions in either top or bottom, should receive your careful attention, and you should be fully convinced of their safe character before you accept them.

The number of shots that may be fired in one working place must be determined by local conditions. It is advisable, however, that not more than two coal shots be prepared in entries or in rooms not fully opened. If

more than one shot be fired in a place, provisions must be made so the shots will not go off at the same time.

Pure air is essential to the formation of a "dust" explosion. You will therefore be particularly careful in your work in that part of the mine where the ventilation is especially efficient. Experience has brought out the fact that on account of superior ventilation and for other reasons dry dip workings provide very favorable conditions for the starting of a "dust" explosion, and for that reason you should exercise great care in the examination of shots in such workings.

Remember that lack of room for the rapid expansion and dissipation of heat produced by the firing of a risky shot carries with it an element of danger, which must not be underestimated. You can do much to eliminate this element of danger by careful work on your part.

Aside from your supervision over placing and preparing of shots, it is your duty to see that accumulations of dust in the working parts of the mine are prevented as far as practicable, and that the working entries and all other places, which in your judgment need it, are sprinkled and kept in damp condition.

You will keep a brief record of all shots rejected by you, naming entry, number of room and cause of rejection. Should there be a windy shot in the territory under your charge, make a personal investigation as to its cause.

As far as your qualifications to do the work acceptably could be established by examination and inquiry, you have given satisfactory proof that you are well qualified. Knowing how to do the work right and doing it right are not, however, synonymous terms. I hope in your case your actions will show that there was no mistake made in choosing you as shot examiners, and that you will fill the responsible position with credit to yourselves and with benefit to the miner and operator. If I find that a shot examiner is careless or negligent in the performance of his work, I shall withdraw his name from the certified list, but I trust there will be no occasion to make this necessary.

In conclusion, I will say that if you will act in accordance with the above suggestions and in addition carefully read the report of the commission on explosions in Iowa, a copy of which will be sent you, if you not already have one, and apply the knowledge gained from its perusal in a practical way your work will prove an almost sure preventive for future explosions in the mines of the first district.

JOHN VERNER,
Inspector District No. 1.

The Iowa shot examination law has been in force for fifteen months, it has passed the experimental stage and the benefits gained by its enactment have been fully established. This desirable result was largely due to the fact that the operators and miners of the state have labored together to make the law a success. The miners realized that adequate protection to life and property could not be provided by the operators alone and that their own assistance was needed to help bring it about. They have given that

assistance and have been doing their share in securing an increased measure of safety in mining, and the gratifying success attained so far is a pleasing indication that co-operation in this direction has come to stay.

ACCIDENTS.

During the year ending June 30, 1902, eleven fatal accidents occurred in and about the mines in this district, and twenty-five serious accidents were reported to this office. Of the eleven fatal accidents, ten occurred in the mines and one outside; of the former, four were due to explosions and six were caused by falls of rock or coal. The majority of the serious accidents occurred at the working face and were due to falls of rock or coal.

In the year ending June 30, 1903, eleven fatal and twenty-six serious accidents were recorded. Three of the fatal accidents occurred on the entries, five miners lost their lives at the working face through falls of slate or coal, and one was killed by a premature explosion of dynamite. The last is the only instance of loss of life in this district through the use of explosives since the passage of the shot examination law in April, 1902. It was one of the few accidents that can be termed unavoidable. The man killed was one of the most careful miners in the employ of the Wapello Coal company. The dynamite evidently exploded in his hands while he was preparing it for charging a hole, but the cause of its exploding will never be known. In none of all the above accidents could any proof be found indicating that they had been caused through lack of care or non-compliance with the provisions of the mining law on the part of the management of the mines where they occurred. The following tables give the accidents in detail and their relation to the output of coal and number of men employed:

Fatal accidents in District No. 1, July 1, 1901-June 30, 1902.

DATE.	NAME OF DECEASED.	OCCUPATION.	CAUSE OF DEATH.	EMPLOYED BY—	COUNTY.
July 19, 1901	James Hall	Miner	Fall of coal	Hocking Coal Co.	Monroe.
July 23, 1901	John Young	Miner	Fall of slate	Hocking Coal Co.	Monroe.
September 24, 1901	R. Collingwood	Driver	Fall of coal and rock	Big Hill Coal Co.	Lucas
October 22, 1901	Geo. Robinson	Shotfirer	Explosion	Whitebreast Fuel Co.	Monroe.
December 18, 1901	John E. Grime	Miner	Fall of slate	Star Coal Co.	Monroe.
December 31, 1901	Albert Olds	Pusher	Fall of rock	W. S. Ell-nwood	Adams.
January 7, 1902	A. B. McDowell	Shotfirer	Explosion	Whitebreast Fuel Co.	Lucas.
January 29, 1902	Jas. Bender	Timberman	Fall of slate	Whitebreast Fuel Co.	Monroe.
February 7, 1902	Alf. Rockhold	Night watch	Crushed by railroad car	Whitebreast Fuel Co.	Lucas.
February 18, 1902	Nels Rogers	Shotfirer	Explosion	Hocking Coal Co.	Monroe.
February 18, 1902	W. C. Palmer	Shotfirer	Explosion	Hocking Coal Co.	Monroe.

Table of fatal accidents in District No. 1, July 1, 1902-June 30, 1903.

DATE.	NAME OF DECEASED.	OCCUPATION.	CAUSE OF DEATH.	EMPLOYED BY—	COUNTY.
July 19, 1902	John H. Evans	Timberman	Struck by timber	Inland Fuel Co.	Lucas.
August 16, 1902	S. Strathair	Timberman	Fall of slate	Whitebreast Fuel Co.	Lucas.
September 11, 1902	Geo. E. Howe	Miner	Fall of coal	Peacock Coal Co.	Appanose
October 27, 1902	A. Bowdre	Miner	Fall of slate	Smoky Hollow Coal Co.	Monroe.
December 5, 1902	Geo. Wims	Miner	Fall of slate	Consolidation Coal Co.	Monroe.
December 19, 1902	John Rowley	Driver	Caught under car	Hocking Coal Co.	Monroe.
December 30, 1902	John Peterson	Miner	Fall of slate	Wapello Coal Co.	Monroe.
January 3, 1903	Thos. Newton	Miner	Fall of slate	Phillips Fuel Co.	Monroe.
January 10, 1903	Jas. Wild	Miner	Premature explosion of dynamite	Wapello Coal Co.	Monroe.
February 13, 1903	C. Conger	Miner	Fall of coal	Exline Coal Co.	Appanose.
March 20, 1903	A. J. Riley	Miner	Fall of slate	Hocking Coal Co.	Monroe.

Serious accidents in District No. 1, for the year ending June 30, 1902.

DATE OF ACCIDENT.	NAME OF INJURED.	OCCUPATION.	CHARACTER OF INJURY.	CAUSE OF INJURY.	EMPLOYED BY -	COUNTY.
July 12, 1901	John Neighbour.	Laborer	Leg broken	Fall of slate	Wapello Coal Co.	Monroe.
July 22, 1901	Robert Young	Miner	Rib broken	Fall of slate	Hocking Coal Co.	Monroe.
July 27, 1901	John Cadell	Miner	Collar bone broken hip dislocated	Fall of slate	Consolidation Coal Co.	Monroe.
August 2, 1901	Wm. Packard	Miner	Ankle crushed	Fall of coal	Economy Coal Co.	Appanoose
August 19, 1901	Wm. Mitchell	Driver	Leg broken	Fell under car.	Wapello Coal Co.	Monroe.
August 22, 1901	K. Benson	Miner	Jaw broken	Fall of slate	Smoky Hollow Coal Co.	Monroe.
October 22, 1901	J. B. Woodridge.	Miner	Ribs broken	Fall of slate	Whitebreast Fuel Co.	Lucas.
October 29, 1901	T. Davison.	Driver	Ribs broken	Struck by pit car	Whitebreast Fuel Co.	Lucas.
November 24, 1901	C. Fisher.	Miner	Leg broken	Fall of coal	Economy Coal Co.	Appanoose
January 8, 1902	T. Moon	Miner	Collar bone broken	Fall of coal	Rock Valley Coal Co.	Appanoose
January 10, 1902	Ed. Swanson	Miner	Leg broken	Fall of slate	Consolidation Coal Co.	Monroe.
January 15, 1902	C. Townsend	Miner	Leg broken	Fall of coal	Illinois and Ia. Coal Co.	Appanoose
January 24, 1902	Sam Thomas	Driver	Leg broken	Fell under car	Wapello Coal Co.	Monroe.
February 7, 1902	John Rae	Driver	Arm broken	Fall of rock	Mendota C. and M. Co.	Appanoose
February 22, 1902	J. Pooelick	Miner	Leg broken	Fall of slate	Hocking Coal Co.	Monroe.
February 27, 1902	P. E. Smith	Driver	Shoulder broke	Coal falling down shaft	Economy Coal Co.	Appanoose
March 27, 1902	C. V. Peterson	Driver	Back injured	Fall of slate	Consolidation Coal Co.	Monroe.
March 21, 1902	John Cobley	Laborer	Leg broken	Caught between cars	Hocking Coal Co.	Monroe.
April - 1902	W. Pete	Miner	Leg broken	Fall of coal	Columbia Coal Co.	Appanoose
April 10, 1902	C. W. Moss	Driver	Arm broken	Fall of slate	Smoky Hollow Coal Co.	Monroe.
April 12, 1902	E. Armstrong	Miner	Back injured.	Fall of slate	Smoky Hollow Coal Co.	Monroe.
April 5, 1902	H. Canvin	Trapper	Arm broken	Fell under car	Wapello Coal Co.	Monroe.
May 16, 1902	A. Welch	Driver	Leg broken	Fell under car	Wapello Coal Co.	Monroe.
May 20, 1902	John Haisley	Driver	Arm broken	Kicked by mule	Smoky Hollow Coal Co.	Monroe.
June 14, 1902	G. W. Exline	Miner	Small bones in foot broken	Fall of coal	Exline Coal company.	Appanoose

Serious accidents in District No. 1, for the year ending June 30, 1903.

DATE OF ACCIDENT.	NAME OF INJURED.	OCCUPATION.	CHARACTER OF INJURY.	CAUSE OF INJURY.	EMPLOYED BY	COUNTY.
July 13, 1902	M. Jones	Miner	Leg broken	Fall of slate	Hocking Coal Co.	Monroe.
August 7, 1902	R. Lennie	Miner	Ribs fractured	Fall of slate	Smoky Hollow C. Co.	Monroe.
August 7, 1902	J. Barrow	Miner	Ankle fractured	Fall of slate	Smoky Hollow C. Co.	Monroe.
September 11, 1902	J. W. Anderson	Timberman	Spine injured	Fall of slate	Consolidation C. Co.	Monroe.
September 11, 1902	Geo. Shortridge.	Miner	Back injured	Fall of slate	Consolidation C. Co.	Monroe.
October 13, 1902	A. Wilson	Top hand	Leg broken	Fell from dirt dump.	Hocking Coal Co.	Monroe.
October 16, 1902	S. Gugerien	Miner	Leg broken	Fall of coal	Ill. & Iowa Coal Co.	Appanoose
November 3, 1902	P. Morgans	Miner	Hip dislocated	Fall of coal	Star Coal Co.	Appanoose
November 15, 1902	Wm. Smith	Miner	Broken ankle	Fall of coal	Consumers Coal Co.	Appanoose
November 15, 1902	D. Wolf	Miner	Back injured.	Fall of slate	Wapello Coal Co.	Monroe.
December 2, 1902	J. Gollis	Miner	Foot broken	Fall of coal	Star Coal Co.	Appanoose
December 24, 1902	J. Peckham	Driver	Leg broken	Fell between cars	Tipton Coal Co.	Appanoose
January 9, 1903	S. Coddington.	Miner	Leg broken	Fall of slate	Nima Block Coal Co.	Wayne.
January 17, 1903	C. M. Roberts.	Miner	Leg broken	Fell under car	Smoky Hollow C. Co.	Monroe.
January 19, 1903	W. Burt	Miner	Leg broken	Fall of coal	Smoky Hollow C. Co.	Monroe.
January 29, 1903	W. Winston.	Track layer.	Back injured.	Fall of slate	Wapello Coal Co.	Monroe.
February ... 1903	J. D. Clark	Foreman	Foot injured	Fall of slate.	Big Hill Coal Co.	Lucas.
February ... 1903	M. Mischell	Miner	Foot injured	Fall of slate	Big Hill Coal Co.	Lucas.
February 5, 1903	F. Stice	Driver	Arm broken	Struck by car	Smoky Hollow C. Co.	Monroe.
February 13, 1903	G. Mild	Miner	Back injured	Premature explosion of dynamite.	Wapello Coal Co.	Monroe.
February 28, 1903	H. Matthews	Miner	Arm broken	Fall of coal	Smoky Hollow C. Co.	Monroe.
March 13, 1903	F. Laningham	Driver	Leg broken	Run over by car	Wapello Coal Co.	Monroe.
March 17, 1903	Geo. Hughes	Driver	Hand broken	Falling timber.	Hocking Coal Co.	Monroe.
March 18, 1903	M. Davis	Driver	Arm broken	Fell from tail chain	Hocking Coal Co.	Monroe.
May 5, 1903	F. Seddon	Driver	Leg broken	Run over by car	Whitebreast Fuel Co.	Lucas.
June 7, 1903	John Price	Driver	Leg broken	Fall of slate	Whitebreast Fuel Co.	Monroe.
June 27, 1903	E. Winston	Miner	Wrist and leg broken.	Fall of slate	Consolidation C. Co.	Monroe.

Fatal and serious accidents from July 1, 1901, to June 30, 1902, 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
Monroe	7	15	1,998,473	181,282	84,598	2,801	370	
Appanoose	1	2	261,473	97,729	97,729	2,449	152	
Linn	3	2	285,493	78,489	117,739	146	182	
Warren	1	1	45,451	45,451	45,451	100	100	
Wayne	1	1	20,551	20,551	20,551	82	82	
Waver	1	1	1,580	1,580	1,580	112	112	
Adair	1	1	1,768	1,768	1,768	112	112	
Total.	11	25	2,818,585	219,776	92,741	6,957	839	

Fatal and serious accidents from July 1, 1902, to June 30, 1903, 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
Monroe	7	13	1,600,148	228,592	88,997	2,839	405	
Appanoose	2	5	892,692	446,346	178,538	2,460	590	
Linn	3	3	298,539	89,561	89,561	252	176	
Warren	1	1	74,512	74,512	74,512	250	250	
Wayne	1	1	20,551	20,551	20,551	48	48	
Waver	1	1	20,678	20,678	20,678	101	101	
Adair	1	1	16,492	16,492	16,492	101	101	
Total.	11	27	2,888,675	292,132	106,868	6,859	878	

MINES IN OPERATION IN DISTRICT NO. 1, THEIR LOCATION, ETC.

MONROE COUNTY.

CORPORATION, FIRM OR OPERATOR.	Mine number.	LOCATION OF MINE.	RAILROAD CONNECTION, IF ANY.	Kind of opening.	SYSTEM OF WORKING.	Kind of hoist.	Method of ventilation.
Wapello Coal company	3	1 mile west of Hiteman	C. B. & Q.	Shaft.	Room and pillar.	Steam	Furnace.
Wapello Coal company	4	3 miles northwest of Hiteman	C. B. & Q.	Shaft.	Room and pillar.	Steam	Furnace.
Smoky Hollow Coal company	4	Hynes	C. B. & Q.	Slope.	Room and pillar.	Steam	Furnace.
Smoky Hollow Coal company	6	4 miles southeast of Hynes	C. B. & Q.	Slope.	Room and pillar.	Steam	Furnace.
Consolidated Coal company.	10	2 1/2 miles southwest of Buxton	C. & N. W.	Shaft.	Room and pillar.	Steam	Furnace.
Consolidated Coal company.	11	3 miles south of Buxton.	C. & N. W.	Shaft.	Room and pillar.	Steam	Furnace.
Excelsior Coal company.	11	1 1/2 miles west of Foster.	C. M. & St. P.	Shaft.	Room and pillar.	Steam	Furnace.
Phillips Fuel company	6	West of Foster	C. M. & St. P.	Shaft.	Room and pillar.	Steam	Furnace.
White-brest Fuel company	10	Hilton	C. M. & St. P.	Shaft.	Room and pillar.	Steam	Furnace.
Hooking Coal company	1	Hooking	Iowa Central	Shaft.	Room and pillar.	Steam	Furnace.
Hooking Coal company	2	Southeast of Hooking.	Iowa Central	Shaft.	Room and pillar.	Steam	Furnace.
Central Coal company	1	Lockman	Iowa Central	Slope.	Room and pillar.	Steam	Furnace.
Miller Creek Coal company.	1	West of Coalfield	Iowa Central	Slope.	Room and pillar.	Steam	Furnace.
Miller Creek Coal company	2	Southeast of Coalfield.	Iowa Central	Drift.	Room and pillar.	Steam	Furnace.
Miller Creek Coal company.	3	Southwest of Coalfield.	Iowa Central	Drift.	Room and pillar.	Steam	Furnace.
Star Coal company	1	2 1/2 miles northwest of Albia	Iowa Central	Slope.	Room and pillar.	Steam	Furnace.
White Ash Coal company	1	1 1/2 mile south of Avery.		Slope.	Room and pillar.	Steam	Furnace.

APPANOOSE COUNTY.

Columbia Coal company	3	West of Brazil	K. & W.	Slope.	Long wall	Electricity	Furnace.
Centerville Block Coal company	7	West of Brazil	K. & W.	Slope.	Long wall	Horse	Furnace.
Brazil Coal company	1	Brazil	K. & W.	Drift.	Long wall		Furnace.
Phenix Coal company	1	Brazil	K. & W.	Drift.	Long wall		Furnace.
Centerville Block Coal company.	5	Brazil	K. & W.	Slope.	Long wall	Steam	Furnace.
Tipton Co-operative Coal company	1	Brazil	K. & W.	Drift.	Long wall		Furnace.
Peacock Coal company	1	Brazil	K. & W.	Drift.	Long wall		Furnace.
Oriental Coal company	1	South of Brazil	K. & W.	Slope.	Long wall	Steam	Furnace.

APPANOOSE COUNTY—CONTINUED.

CORPORATION, FIRM OR OPERATOR.	Mine number.	LOCATION OF MINE.	RAILROAD CONNECTION, IF ANY.	Kind of opening.	SYSTEM OF WORKING.	Kind of hoist.	Means of ventilation.
Domestic Coal company	1	1 mile southeast of Brazil	K. & W.	Shaft.	Long wall	Steam	Fan.
Centerville Block Coal company	8	West of Centerville	K. & W. and Iowa Cen.	Shaft.	Room and pillar	Steam	Fan.
Anchor Coal company	1	Centerville	K. & W.	Shaft.	Room and pillar.	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	2	1 1/2 miles southwest of Cincinnati	C. B. & K. C.	Slope.	Long wall	Horse	Furnace.
Hocking Valley Coal company	2	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.	R. & P. long wall	Steam	Fan.
Mendota Coal and Mining company	1	Cincinnati	C. B. & K. C.	Shaft.	R. & P. long wall	Steam	Fan.
Mendota Coal and Mining 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.	Room and pillar.	Steam	Fan.
Thistle Coal company	2	1 1/2 miles east of Cincinnati	C. B. & K. C.	Shaft.	Room and pillar.	Steam	Fan.
Exline Coal company	1	1 1/2 mile west of Exline	C. B. & K. C.	Shaft.	Room and pillar.	Steam	Jet.
Royal Coal company	1	Northeast of Exline	C. B. & K. C.	Slope.	Long wall	Steam	Furnace.
Centerville Block Coal company	2	Numa	C. R. I. & P.	Shaft.	Long wall	Steam	Fan.
Numa Coal company	1	Numa	C. R. I. & P.	Shaft.	Long wall	Steam	Fan.
Anchor Coal company	3	3 1/2 miles southwest 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.
Centerville Block Coal company	10	East of Centerville	C. R. I. & P.	Shaft.	Room and pillar.	Steam	Fan.
Centerville Block Coal company	9	West of Centerville	Iowa Central	Shaft.	Room and pillar	Steam	Fan.
Illinois and Iowa Coal company	1	Forbush	Iowa Central	Shaft.	Long wall	Steam	Fan.
Consumers Coal company	1	Jerome	C. M. & St. P.	Shaft.	Long wall	Steam	Fan.
Big Jo Coal company	1	1 1/2 miles east of Jerome	C. M. & St. P.	Shaft.	Long wall	Steam	Fan.
F. H. Jackett Coal company	1	3 miles southwest of Mystic	C. M. & St. P.	Slope.	Long wall	Steam	Furnace.
Columbia Coal company	1	Diamond	C. M. & St. P.	Slope.	Long wall	Horse	Furnace.
Peerless Coal company	4	1 1/2 miles west of Mystic	C. M. & St. P.	Shaft.	Long wall	Steam	Furnace.
Peerless Coal company	5	1 1/2 miles 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	Steam	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	Furnace.
Acken Coal company	2	West of Mystic	C. M. & St. P.	Slope.	Long wall	Steam	Jet.
Peerless Coal company	7	West of Mystic	C. M. & St. P.	Shaft.	Long wall	Steam	Fan.
Mystic Coal company	1	West of Mystic	C. M. & St. P.	Slope.	Long wall	Horse	Furnace.
Big Three Coal company	1	West of Mystic	C. M. & St. P.	Slope.	Long wall	Horse	Furnace.

Lodwick Bros. Coal company	2	Mystic	C. M. & St. P.	Shaft.	Long wall	Steam	Fan.
Peerless Coal company	6	Mystic	C. M. & St. P.	Drift.	Long wall	Furnace	Furnace.
McGrann Coal company	1	Mystic	C. M. & St. P.	Drift.	Long wall	Steam	Furnace.
Phillips Bros.	1	Mystic	C. M. & St. P.	Drift.	Long wall	Steam	Furnace.
Peerless Coal company	3	Mystic	C. M. & St. P.	Drift.	Long wall	Steam	Furnace.
Lodwick Bros. Coal company	1	Mystic	C. M. & St. P.	Slope.	Long wall	Steam	Furnace.
Orr Bros.	1	1 1/2 mile east of Mystic	C. M. & St. P.	Shaft.	Long wall	Steam	Fan.
Diamond Block Coal company	1	Clarkdale	C. M. & St. P.	Shaft.	Long wall	Steam	Fan.
Star Coal company	1	Rathbun	C. M. & St. P.	Shaft.	Long wall	Steam	Fan.
Stone Co 1 company.	1	East of Rathbun	C. M. & St. P.	Shaft.	Long wall	Horse	Furnace.
Geo. Gill	1	Darby	C. M. & St. P.	Slope.	Long wall	Steam	Furnace.
Manufacturers Coal & Coke company	30	1 1/2 miles south of Centerville	I. & St. L.	Shaft.	Room and pillar.	Steam	Fan.
Happy Coal company	1	Centerville		Shaft.	Long wall	Horse	Furnace.
Star Coal company	1	Centerville		Shaft.	Room and pillar	Horse	Furnace.
Monitor Coal company	1	Centerville		Shaft.	Room and pillar	Horse	Furnace.
Rock Valley Coal company	1	1 mile northeast of Centerville		Shaft.	Room and pillar.	Horse	Furnace.
White Oak Coal company	1	Centerville		Shaft.	Room and pillar.	Horse	Furnace.
Superior Coal company	1	South of Jerome		Shaft.	Long wall	Horse	Furnace.
White Oak Coal company	1	North of Exline		Shaft.	Room and pillar.	Horse	Furnace.

LUCAS COUNTY.

White Breast Fuel company	4	Cleveland	C. B. & Q.	Shaft.	Room and pillar.	Steam	Fan.
Big Hill Coal company	1	Lucas	C. B. & Q.	Shaft.	Room and pillar	Steam	Fan.
Inland Fuel company.	1	3 1/2 miles northeast of Chariton.		Shaft.	Room and pillar	Steam	Fan.

WAYNE COUNTY.

Numa Block Coal company	2	1 mile northeast of Seymour	C. M. & St. P.	Shaft.	Long wall	Steam	Fan.
Numa Block Coal company	3	Seymour	C. R. I. & P.	Shaft.	Long wall	Steam	Fan.
J. L. Slack	1	Harvard		Shaft.	Long wall	Horse	Furnace.
E. A. Sipes	1	4 miles south of Confidence		Shaft.	Long wall	Horse	Furnace.
L. Frye	1	1 1/2 miles south of Confidence		Shaft.	Long wall	Steam	Fan.

TAYLOR COUNTY.

Tomlinson & Miller	1	East of New Market	Burlington	Shaft.	Long wall	Horse	Furnace.
Campbell Coal company	1	East of New Market	Burlington	Shaft.	Long wall	Horse	Furnace.
Campbell Coal company	2	East of New Market	Burlington	Shaft.	Long wall	Horse	Furnace.
Wm. Browning	1	East of New Market	Burlington	Shaft.	Long wall	Horse	Furnace.
N. Easter	1	2 miles east of New Market	Burlington	Shaft.	Long wall	Horse	Furnace.
Wm. Welch	1	2 miles east of New Market	Burlington	Shaft.	Long wall	Horse	Furnace.

PAGE COUNTY.

CORPORATION, FIRM OR OPERATOR.	Mine number.	LOCATION OF MINE.	RAILROAD CONNECTION, IF ANY.	Kind of opening.	SYSTEM OF WORKING.	Kind of hoist.	Means of ventilation.
Johnston & Company	9 miles west of Clarinda	.....	Shaft.	Long wall	Horse	Furnace
W. B. Coal company	2 1/2 miles southwest of Clarinda	.....	Shaft.	Long wall	Horse	Furnace
Winger Bros.	2 1/2 miles southwest of Clarinda	.....	Shaft.	Long wall	Horse	Furnace
L. Vanarsdal.	West of Clarinda	.....	Shaft.	Long wall	Horse	Furnace.

ADAMS COUNTY.

W. S. Ellenwood	.....	Earlsda.	.....	Shaft.	Long wall	Horse	Furnace.
J. M. Hudson	.....	Earlsda.	.....	Shaft.	Long wall	Horse	Furnace.
Wm. Collins	.....	Carbon.	.....	Shaft.	Long wall	Horse	Furnace.
M. Jones.	.....	Carbon.	.....	Shaft.	Long wall	Horse	Furnace.
Keesee & Perks	.....	Carbon.	.....	Shaft.	Long wall	Horse	Furnace.
J. F. Wild.	.....	Carbon.	.....	Shaft.	Long wall	Horse	Furnace.
J. F. Ruth.	.....	Carbon.	.....	Shaft.	Long wall	Horse	Furnace.
Jas. Spangur.	.....	8 miles west of Carbon	.....	Shaft.	Long wall	Horse	Furnace.
Phillipe Coal company.	.....	Briscove.	.....	Shaft.	Long wall	Horse	Furnace.

MONROE COUNTY.

The production of 1,600,000 tons of coal last year by the nineteen mines of Monroe county, places it at the head of the coal producing counties of Iowa, and it seems certain that it will retain that position for years to come. The largest mines in the state are located here and their number is rapidly increasing. Five railroads are available for coal shipment. Connected with the Chicago, Burlington and Quincy railroad are mines of the Wapello Coal company and the Smoky Hollow Coal company; the Chicago and North-Western railway carries the product of the mines of the Consolidated Coal company; on the Iowa Central railway are located the mines of the Hocking Coal company, the Central Coal company and the Miller Creek Coal company; tributary to the Chicago, Milwaukee and St. Paul railroad are the mines of the Whitebreast Fuel company of Illinois, the Excelsior Coal company and the Phillips Fuel company. One railroad, the Wabash, has so far no mines connected with its line running through the county. Two mines, the White Ash mine, near Avery, and the Star mine, northwest of Albia, have no railroad connection, although considerable coal is shipped from them.

The coal measures of the county are comparatively shallow and contain several workable seams of coal. The thin upper seams, two feet and less in thickness, are worked only in a small way in a few places during the winter for home trade, and their development on a large scale is yet a long way off. The seam now so extensively worked, has a thickness of from three to seven feet, lies fairly level, is reached by shafts and slopes and is worked on the room and pillar plan.

Seven fatal accidents occurred in the mines of Monroe county during the year ending June 30, 1902, and seven during the year ending June 30, 1903. While the number of fatal accidents in each year was the same, the last year showed quite an improvement over its predecessor. In the first year 181,282 tons of coal were mined for each life lost; in the second year 228,592 tons were produced for each fatal accident. In the first year one death occurred to every 370 men employed; in the second year the ratio was lowered to one death to every 405 employees.

All the large mines are ventilated by fans and only four of the smaller ones have furnaces. The ventilation of most of these mines was, in a general way, satisfactory, but in a few, considerable difficulty was experienced in airing them properly. Natural disadvantages, mistakes in mine development, extensive airways of rather small dimensions and other drawbacks together with low fan efficiency made the problem of ventilating them an extremely hard one to solve. Nearly all the fans in the county showed a rather low efficiency against a heavy mine resistance, because incapable of producing a correspondingly high water gauge. The fan on No. 10 mine of the Consolidation Coal company gave better results in this respect than any other fan in the county. Considerable work was done in the last year

to improve the sanitary condition of the mine, and fair progress has been made in this direction.

Judging from the number of new mines already commenced or contemplated in the near future and the improvements made in the mines now running, a large increase in the coal production of Monroe county may be expected the coming year. The Consolidation Coal Co. has started and will develop extensively several mines which promise to become large producers. The Central Coal Co. is opening a new slope, the Smoky Hollow Coal Co. is preparing to sink slope No. 7, the new mine of the Excelsior Coal Co. is being rapidly developed, and the Wapello Coal Co. and the Hocking Coal Co. have lately completed extensive improvements in their mines to facilitate the rapid handling of the coal output. With a fair market and no break in the friendly relations between the operators and miners, the coal production of Monroe county for the coming year will probably exceed 1,800,000 tons.

APPANOOSE COUNTY.

While Monroe county heads the list of coal producing counties of the state, as far as coal production is concerned, Appanoose county stands in front as having a larger number of mines than any other county in Iowa. The amount of coal produced by the Appanoose county mines was the largest annual production, since mining commenced in the county, and far exceeded that of any former year; yet, large as it was, it has not done justice to the remarkable mineral resources of this county. Without adding a single new mine to the present number, its annual coal production could be made to surpass that of any other county in Iowa, but to accomplish this, the slow and somewhat crude system of handling coal, that has been followed for years, must be improved.

The Iowa Central Railway, the Chicago, Milwaukee and St. Paul, the Rock Island, two branches of the Burlington system and the Iowa and St. Louis Railway furnish shipping facilities for the coal product of the county: The Wabash, running through the eastern portion of the county, is the only railroad having no mines connected with it. The Chicago, Milwaukee and St. Paul railroad serves the greater number of mines, twenty-six; next comes the Keokuk and Western with thirteen; then the Chicago, Burlington and Kansas City with eight. The Rock Island road has six mines on its line, the Iowa Central three, and the Iowa and St. Louis one. Besides these mines a number of small ones are worked in different parts of the county; a few of these ship a little coal during the winter, the others are operated for local trade only.

The coal seam now worked, while thin, averaging about two and one-half feet in thickness, is very valuable on account of its easy accessibility, regularity, quality and extent. Its area in the county covers probably more than two hundred and fifty square miles. The long wall method of working the seam is generally used, although in some of the mines near Centerville and Cincinnati the room and pillar plan is given the preference. Mining machines are used in some of the mines near Centerville and Mystic. The Lee long wall machine, especially designed for this seam, is run by electricity and does

good work. The Legg and Harrison machines, used in the mines of the Centerville Block Coal Co., are run by compressed air and have been in successful operation for a number of years.

In point of safety the mines compare favorably with any mines in the United States. Only two fatal accidents occurred in them during the last two years. More than 300,000 tons of coal were mined for each life lost, and the ratio of deaths to number of men employed was 1 to about 1,250. But, while all the mines showed an excellent record for safety, a large number were found deficient in ventilation. In the last year, however, much has been done to overcome this difficulty. Seven air shafts have either been sunk or have been started and will soon be completed, and other improvements have been made or are under way to better conditions.

The work done in this direction has been especially noticeable in the mines along the C., B. & K. C. railroad; especial credit being due to the Thistle Coal Co. and the Mendota Coal and Mining Co. for the improvements made in their mines near Cincinnati. The Peerless Coal Co., operating several mines in and near Mystic, also deserves credit for the work it has done and is doing to better the conditions of its mines.

LUCAS COUNTY.

The number of mines worked in this county have not been increased in the last two years. The amount of coal mined in that time, however, shows an increase of 122,018 tons over the production during the preceding biennial period. The largest mine is located at Cleveland and is operated by the Whitebreast Fuel Co. of Illinois. Its product is shipped over the C., B. & Q. railroad. The only other mine having railroad connection is operated by the Big Hill Coal Co. at Lucas. The Inland Fuel Co.'s mine, northeast of Chariton, is as yet without railroad facilities, and on that account has been seriously hindered in development work and in marketing the coal produced.

The coal seam worked belongs to the lower measures; its thickness varies from three and one third to seven feet, lies fairly level and at considerable depth from the surface. The depth of the shaft of the Whitebreast Fuel company is 321 feet, that of the shaft of the Big Hill Coal company 274 feet and the Inland Fuel company's shaft is 250 feet deep. All the mines are worked on the room and pillar plan. The vein is not a compact or regular one, but occurs in basins of varying extent. Often adjacent basins are connected by a thin stratum of coal, but sometimes they are found bounded on all sides by barren ground. Under such conditions it will be apparent that only thorough and systematic prospecting can locate and determine the extent of these basins and furnish fairly accurate proof as to whether they can be worked profitably or not.

Notwithstanding the fact that five fatal accidents occurred in and about above three mines in the last two years, and that comparison with other counties with regard to fatal accidents makes the record of Lucas county in this respect appear a very poor one, it should not be assumed that these mines are more dangerous or that they are less efficiently managed than the

mines elsewhere in the district, and the proof that the mines are fairly well looked after and that they can compare favorably with other mines is, in a measure, furnished by the accidents themselves. One man was killed outside of the mines and four men were killed in the mines. Of the latter four, one was a driver, one a shotfirer and two were timbermen. That the list does not include miners is remarkable and an indication that their working places were not only fairly safe, but that they exercised due care in protecting themselves against possible danger. The timbermen were killed, while following the instructions of the mine foreman to keep the haulage and traveling roads in safe condition, in the performance of their usual work. The death of McDowell, the shotfirer, who was killed by an explosion in mine No. 4, Cleveland, on January 6, 1902, could have been avoided, had said McDowell been more careful in his work. It is gratifying to me to be able to state that the blasting of coal is performed under safer conditions than formerly. Since the passage of the shot examination law no one has been injured through the use of explosives in the mines of this county.

WAYNE COUNTY.

A considerable portion of Wayne county appears to be underlaid with workable coal, but mining so far has not been carried on very extensively. Upwards of 74,000 tons of coal were produced in the county last year, more than two thirds of this amount coming from one mine, the Big Jim, operated by the Numa Block Coal company. The remainder came from the mine of the Seymour Coal company, recently acquired by the Numa Block Coal company, and local mines in the vicinity of Harvard and Confidence. The Numa Block Coal company is now the only shipper of coal and its mines are located on the Rock Island road and the Milwaukee near Seymour. The vein of coal worked is a continuation of the Appanoose vein, slightly thinner and at Seymour lies at a considerable depth below the surface, the two shafts there being 202 and 245 feet deep respectively. The Big Jim mine gives fair promise to produce more coal the coming year than any other mine in the Appanoose-Wayne field. Had it not been for a fire which destroyed its engine and boiler house last winter and caused a stoppage of work for nearly two weeks, this mine would have probably headed the list last year; as it was, its coal output last year was only exceeded by one mine in Appanoose county by a few thousand tons.

The Wayne county mines are worked long wall, and in point of safety are about equal to the mines of Appanoose county. Their sanitary condition is fairly satisfactory.

No fatal accident occurred in the mines during the last two years, and only one serious accident was reported in that time.

TAYLOR COUNTY.

Nearly all the mines in this county are located in the vicinity of New Market. They are, like the coal worked in them, small. Three of them do a shipping business and a ready market for all the coal they can produce is

found in Clarinda and other near towns. The coal is about sixteen inches thick, is reached by shafts and is worked long wall. The safety devices of some of the mines have been recently improved and the mines are about as safe as any in the state. On account of the small extent of the mines and the method of working them, their ventilation is easily accomplished and generally satisfactory.

PAGE COUNTY.

As far as comparative gain in coal production for last year is concerned, Page county is far ahead of any county in the state. In the year ending June 30, 1902, its coal production amounted to 1,850 tons, last year it was 9,674 tons, an increase of more than 500 per cent. All the mines, four in number, are located near Clarinda. They have no railroad connection, but home demand gives them a ready market for all the coal they can produce.

The vein worked averages less than eighteen inches in thickness and is reached by shafts, some of them nearly 200 feet deep. The coal is worked long wall. The mines are equipped with the necessary safety devices, are easily ventilated and the mine workings are kept in fairly safe and satisfactory condition.

ADAMS COUNTY.

None of the mines of Adams county ships coal by rail; the entire output is sold in the home market, and in the winter the demand often exceeds the supply. In the summer very little mining is done.

The coal seam averages about sixteen inches in thickness, is reached by shallow shafts and is worked long wall. The mines are located near Carbon, Briscoe, Eureka and Hoyt. Ventilation is produced by small furnaces, and in cold weather natural ventilation is generally sufficient to air the mines satisfactorily.

The underground work is done under much safer conditions than exist in the large mines of the central part of the state; accidents of a serious nature are very rare and the experienced and careful miner runs little risk of injury. The one fatal accident, which occurred during the last two years, appears to have been due to inexperience and carelessness on the part of the deceased.

List of corporations, firms, and individuals operating mines in the first district, their post office address and shipping facilities, if any.

MONROE COUNTY.

CORPORATION, FIRM OR INDIVIDUAL.	POST OFFICE ADDRESS.	SHIPPING FACILITIES.
Consolidation Coal company	Buxton	Chicago & Northwestern.
Wapello Coal company	Hiteman	Chicago, Burlington & Quincy.
Smoky Hollow Coal company	Avery	Chicago, Burlington & Quincy.
Excelsior Coal company	Foster	Chicago, Milwaukee & St. Paul.
Phillips Fuel company	Foster	Chicago, Milwaukee & St. Paul.
Whitebreast Fuel Company of Illinois	Ottumwa	Chicago, Milwaukee & St. Paul.
Hoeking Coal company	Hoeking	Iowa Central.
Central Coal company	Albia	Iowa Central.
Miller Creek Coal company	Coalfield	Iowa Central.
Star Coal company	Albia	Chicago, Burlington & Quincy.
White Ash Coal company	Avery	Chicago, Burlington & Quincy.

APPANOOSE COUNTY.

Columbia Coal company	Centerville	Keokuk & Western and Chicago, Milwaukee & St. Paul.
Centerville Block Coal company	Centerville	Keokuk & Western, Iowa Central, and Chicago, Rock Island & Pacific.
Brazil Coal company	Centerville	Keokuk & Western.
Phoenix Coal company	Brazil	Keokuk & Western.
Tipton Co-operative Coal company	Brazil	Keokuk & Western.
Pencock Coal company	Brazil	Keokuk & Western.
Oriental Coal company	Centerville	Keokuk & Western.
Domestic Coal company	Centerville	Keokuk & Western.
Anchor Coal company	Centerville	Keokuk & Western and Chicago, Rock Island & Pacific.
Scandinavian Coal company	Centerville	Keokuk & Western.
Dewey Coal company	Centerville	Keokuk & Western.
Hoeking Valley Coal company	Cincinnati	Chicago, Burlington & Kansas City.
Mendota Coal and Mining company	Cincinnati	Chicago, Burlington & Kansas City.
Thistle Coal company	Cincinnati	Chicago, Burlington & Kansas City.
Exline Coal company	Exline	Chicago, Burlington & Kansas City.
Royal coal company	Tabor	Chicago, Burlington & Kansas City.
Numa Block Coal company	Seymour	Chicago, Rock Island & Pacific.
Illinois and Iowa Coal company	Ottumwa	Iowa Central.
Consumers coal company	Cedar Rapids	Chicago, Milwaukee & St. Paul.
Big Jo Coal company	Harkes	Chicago, Milwaukee & St. Paul.
F. H. Juckett Coal company	Cedar Rapids	Chicago, Milwaukee & St. Paul.
Peerless Coal company	Centerville	Chicago, Milwaukee & St. Paul.
Egypt Coal company	Mystic	Chicago, Milwaukee & St. Paul.
Arctic Coal company	Mystic	Chicago, Milwaukee & St. Paul.
Acken Coal company	Mystic	Chicago, Milwaukee & St. Paul.
Mystic Coal company	Mystic	Chicago, Milwaukee & St. Paul.
Big Three Coal company	Mystic	Chicago, Milwaukee & St. Paul.
Lodwick Bros. Coal company	Mystic	Chicago, Milwaukee & St. Paul.
McGran Coal company	Mystic	Chicago, Milwaukee & St. Paul.
Orr Bros.	Mystic	Chicago, Milwaukee & St. Paul.
Diamond Block Coal company	Mystic	Chicago, Milwaukee & St. Paul.
Star Coal company	Rathbun	Chicago, Milwaukee & St. Paul.
Stone Coal company	Mystic	Chicago, Milwaukee & St. Paul.
Geo. Gill	Darby	Chicago, Milwaukee & St. Paul.
Manufacturers Coal and Coke company	Centerville	Iowa & St. Louis.

APPANOOSE COUNTY—CONTINUED.

CORPORATION, FIRM OR INDIVIDUAL.	POST OFFICE ADDRESS.	SHIPPING FACILITIES.
Happy Coal company	Centerville.	
Star Coal company	Centerville.	
Monitor Coal company	Centerville.	
Rock Valley Coal company	Centerville.	
White Oak Coal company	Centerville.	
H. W. Farnsworth	Exline.	
Superior Coal company	Jerome.	
R. Campbell	Brazil.	

LUCAS COUNTY

Whitebreast Fuel Co. of Illinois	Ottumwa	Chicago, Burlington & Quincy.
Big Hill Coal Co.	Lucas	Chicago, Burlington & Quincy.
Inland Fuel Co.	Chariton	

WAYNE COUNTY

Numa Block Coal company	Seymour	C. M. & St. P. and C. R. I. & P.
J. L. Slack	Harvard	
E. A. Sipes	Promise City.	
L. Frye	Promise City.	

TAYLOR COUNTY.

Tomlinson & Miller	Newmarket	Chicago, Burlington & Quincy.
R. Campbell Coal company	Newmarket	Chicago, Burlington & Quincy.
Wm. Browning	Newmarket	Chicago, Burlington & Quincy.
Wm. Welch	Newmarket.	
N. Easter	Newmarket.	

PAGE COUNTY.

Johnston & Company	Clarinda	
J. W. Berry Coal company	Clarinda	
Winger Bros.	Clarinda	
I. Vanarsdal	Clarinda	

ADAMS COUNTY.

W. S. Ellenwood	Eureka.	
J. M. Henton	Eureka.	
Wm. Collins	Carbon.	
M. Jones	Carbon.	
Reese & Perks	Carbon.	
J. F. Wild	Carbon.	
J. F. Ruth	Carbon.	
Eclipse Coal Mining company	Briscoe.	
Jas. Spargur	Nodaway.	

SECOND DISTRICT.

LETTER OF TRANSMITTAL.

HON. ALBERT B. CUMMINS, Governor of Iowa.

Sir,—I submit herewith my first report as Inspector of Mines, covering a period of fifteen months' service, and furnishing such data as was available, to include, from the nine months' service of my predecessor.

Fiscal biennial period ending June 30, 1903.

EDWARD SWEENEY,
Inspector Second District.

REPORT OF SECOND DISTRICT.

This district includes the following counties: Warren, Marion, Mahaska, Keokuk, Wapello, Davis, Van Buren and Jefferson.

There are ninety-seven mines producing coal in the counties named and the tonnage production for the period reported aggregate 3,009,125 tons

There are 3,142 miners and employes engaged in the district.

The conditions governing in the matter of tonnage prices and wages are mutually satisfactory between miners and operators. Wages are higher than at any period of coal mining in Iowa, and the rates as herewith furnished are based upon an eight hour work day and would indicate the happy harmony that obtains throughout the coal mining districts.

RATE OF WAGES PAID IN THE SECOND DISTRICT FOR AN EIGHT HOUR DAY.

1903 SCALE YEAR.

Ninety five cents per ton, screen coal and varies to meet changes in natural conditions.

8 foot entry per yard.....	\$2.47
12 foot entry per yard	1.90
Room turning each, not to exceed nine foot neck	5.04
Track layers, timbermen, cagers per day	2.56
Drivers, trip riders and water haulers per day.....	2.56
Track layers and timbermen helpers per day.....	2.36
Boy couplers per day.....	1.52
Oilers per day.....	1.40
Trappers per day, boys.....	1.13
Electric motormen and spike team drivers, when engaged in regular switching, per day.....	2.70
All other inside adult labor per day.....	2.36

Stable men to receive 12½ cents advance over wages of 1902 scale year.

Boy drivers may be used between partings, but when used at regular switchings they shall be considered as men, and receive men's wages.

Where the company does the sharpening the price of blacksmithing shall be 1⅓ per cent of the gross earnings, provided that the miner's tools be given preference over all other work done by the blacksmith.

TOP LABOR.

The price for dumpers, chunkers, screening car men, and all other common top labor shall be advanced $12\frac{1}{2}$ per cent over wages of 1902, provided that no company shall be required to figure from a higher wage than \$1.70 per day, and provided further, that no one receiving more than \$1.90 shall be reduced.

Sinkers per day of eight hours.....\$2.70

The wage earnings as herewith furnished are net, excepting the cost of lamp oil to the day wage hands and smithing, oil and blasting powder to miners. Oil is usually sold at the mine for 60 cents per gallon, while powder is furnished by mutual agreement for \$2.00 per keg. The coal tonnage produced with each keg of powder varies, according to the skill and efficiency of the miner, and the thickness of coal, with other natural conditions, such as water, bad top and sulphur and dirt bands encountered.

ACCIDENTS.

During the period covered by this report there has been thirty-six fatal and fifty-three non-fatal accidents in this district. It seems that while time lasts and men mine coal there will be accidents in connection with the industry. Were it not for much unnecessary risk and carelessness among men the number of mine accidents would be materially lessened.

The Lost Creek explosion, the greatest catastrophe occurring in the annals of Iowa's coal mining, happened on January 24, 1902, about ten miles from Oskaloosa, in Mahaska county, and a list of dead and injured is herewith furnished:

THE DEAD.

John Elder, white; Russell Fish, white; John Bert, white; John Kovall, white; Samuel Humphrey, white; Daniel (Boone) Fish, white; Michael Fox, Sr., white; David Walters, white; Andrew Pash, white; Joseph Gaspari, white; Alexander Gray, white; John Meneally, white; John Martin, white; George Denchok, white; James Humphrey, white; Charles S. Crews, white; Michael Fox, Jr., white; Sylvester C. Crayton, colored; John C. Stovall, colored.

LOST CREEK INJURED.

John Jurkin, George Gogo, Jonas Mabie, Jr., Oliver Mabie, Charles Laman, Frank Secress, Edward Swanson William Booth, William Fothergill George Fothergill, Mathew Aday, William Harvey, Harry Darracks, Asa Sullivan.

We have in this list twenty dead and fourteen injured as a result of one mine accident. I shall not venture to give particulars of this explosion. It occurred ten weeks before my entering the service as mine inspector. A special inquiry and investigation was speedily instituted. The Governor's commission of competent men, operators and miners, made a searching inquiry, reporting their findings, copies of which have been distributed and such is filed in the Inspectors' office.

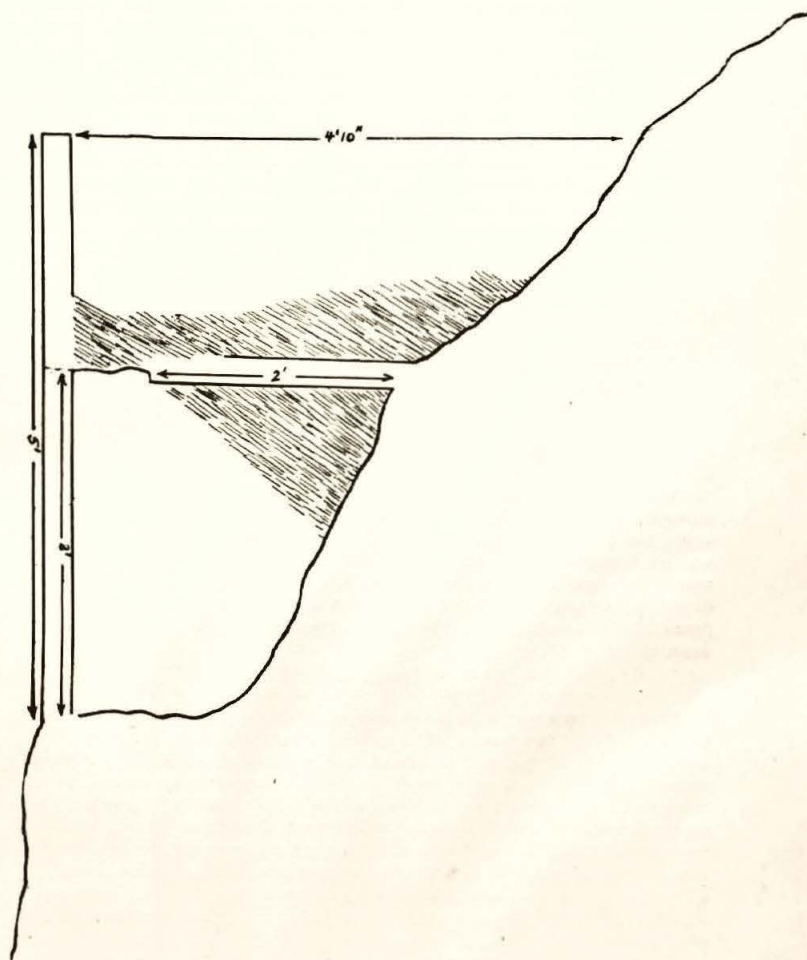
I submit, however, the report of the commission herewith, as bearing directly upon the Lost Creek explosion, with the "Diagram" locating the place of accident producing such awful results. The observations, suggestions and recommendations of the commission, is quite comprehensive and general in character, and might profitably be studied, in connection with the Eleventh Volume of Iowa Coal statistics.

FINDINGS OF COMMISSION AT MINE NO. 2, LOST CREEK.

"The commission organized for the work before it on the seventeenth of February, 1902, by electing Hon. T. J. Phillips chairman, and Mine Inspector John Verner, secretary. It was thought advisable before taking up the

work, to visit mine No. 2 of the Lost Creek Fuel company in Mahaska county, to afford each member of the commission the opportunity to make a personal examination and investigation as to the condition of the mine and the cause of the explosion which occurred in that mine about noon, January 24, 1902. The mine was visited on February 18th. The damage done by the explosion to doors and stoppings had been repaired, the mine was found in good condition, and its ventilation ample. The evidence of the miners, who had worked in this mine prior to the explosion, and in that part of it affected by it, showed that the air had been well conducted and of sufficient volume to assure efficient ventilation of the working places. It had been and is now the practice to slow down the fan just before firing time and keep it moving slowly until after the completion of the firing.

The explosion undoubtedly started in room No. 10, on the second north on the east side. This room is about 500 feet distant from the hoisting shaft, was driven in the distance of fifty feet from the entry, and had not break-throughs connecting it with the adjacent rooms. Andrew Pash, the miner who worked in No. 10, and who was among the killed, had charged two holes on the forenoon of January 24th, one on the left rib, the other near the right rib of the place. The former hole only was fired and the explosion originated from it. Mr. Jonas Mabie, Jr., a driver, who hauled coal from No. 10 room before the explosion, and whose work caused him to be in that room on the morning of January 24th, made the positive statement before all the members of the commission, that the hole in question had been fired at quitting time Thursday, January 23rd; that it had blown the tamping at that time and had been recharged on Friday forenoon, January 24th. In the opinion of the commission it is very probable that the size of the charge was increased also. The hole was five feet deep, four feet, ten inches on the point, slim heel, coal three feet, eleven inches high below the black jack, which did not shoot with the coal. The shot blew the tamping at the second firing, but the dangerous feature about it, and which proved the real cause of the explosion, was part of an old hole, two feet deep, left on from a former shot, that had been drilled at right angles to the hole on the rib, three feet from the mouth of the latter hole, a little below it, and within seven and one half inches of tapping the same (see sketch.)



SHOT FIRED ON JANUARY 24, 1902, IN NO. 2 MINE, LOST CREEK, IOWA, IN ROOM 10, SECOND NORTH, EAST SIDE.

"The side of the hole on the rib was evidently shattered by the charge exploding in it the first time, and when the second charge was fired in the same hole, communication between it and the old hole was easily established, if it had not been established before, and through it and the fissures near it the flaming gases were projected into the room with great force and so intensely hot that the thin layer of coal adhering to the roof was blistered and burned. Along the right rib a considerable amount of soot and cooked dust furnished additional evidence of intense heat. It is undoubtedly true that the dust stirred up in this room by the firing of the shot and ignited by the flaming gases increased the initial force of the explosion considerably."

"Not more than six shots were fired in the territory traversed by the explosion. Probably two shots were fired in No. 12 on the second north, one in No. 10, one in the stub entry off No. 9, and one in No. 9. One shot was fired in the first room working on the main east."

"The flame evidently traveled close to the roof. Not a keg or vessel containing powder was exploded, although in several instances the stoppers had been removed, and several dinner pails found in low positions, having wooden handles painted and varnished, that would show the effects of fire, while covered thickly with soot, showed no evidence of fire having touched them."

"There is a decided similarity in the manner in which this explosion was caused and the explosion at Como, Col., on January 9, 1893, which resulted in the death of twenty-four miners. Both were due to the presence of parts of old holes previously drilled and fired in the piece of coal intended to be removed by a second shot. In the Como mine a hole had been drilled by one of the miners and the charge fired. As the place chosen for this hole was not favorable for blowing down coal, it was a comparatively ineffectual shot. A second hole was placed close to the first and charged. When it exploded, instead of blowing down coal, it broke into the first hole and the flame of the powder extended out into the chamber and the explosion resulted."

STRIKES.

There has been very little in the way of mining troubles in this district during the past two years. The general question of a mining price and miners wages, being agreed to by and through mutual concession, between operators and miners, as a result of the joint conciliatory movement of bituminous mine owners and miners. While much valuable time is spent in connection with this work by both parties to the agreement, in conventions, general and local, the settlement of mining prices to govern throughout the coal producing sections of our state, for what is known as the scale year, is a happy arrangement, and it is generally conceded that the labor and time, together with the convention expenses, is labor and money well and profitably spent.

There is secured to our people identified with or depending upon this industry, work and wages and coal fuel for the year, without strikes, idleness and consequent hardships and troubles. Our citizens as a whole owe much to the patience, intelligence and sacrifices of the men who have achieved such peaceful results in this great industry. Men representing and controlling millions of dollars in coal properties, paying out annually in

wages vast sums, and to the thousands of mine workers, whose horny hands and strong muscles produce for the use and comfort of our whole people millions of tons of coal annually, such forces meeting together, discussing rationally, questions of common concern, from the point of view each represents and thinks best, is a most commendable movement in our industrial life, concluding their labors in peace and good will. Uniting their joint efforts at the banquet table, where speeches, songs and story obtain as the sessions *sine die* is proclaimed by the master of ceremonies.

To the coal miners' union officers and the coal operators' state officials and commissioner much credit is due for the success that has attended the joint movement of coal operators and coal miners in this state. Such local mine troubles as do occur and where differences are prolonged, it is due entirely to the unfair attitude of local men, sometimes miners and sometimes the mine managers, who fail to comprehend or refuse to recognize the constitution of the miners' union and the terms of the joint agreement. Fortunately men of this calibre are becoming happily less numerous in power and position, so that the future promises a greater degree of peace and good will to the mining industry of Iowa.

SCALES AND WEIGHING OF COAL.

From various causes the scales may become insensitive to a true balance, owing to dirt accumulation, a water flow in rainy seasons and lodgment of fine coal in the scale pit. I am pleased to report the fairness of all mine owners in my district, in offering every facility to secure to the miners and all parties concerned, honest and just weight.

I have tested forty-one (41) scales in use at as many mines in this district during my service and condemned eighteen (18) of such number, as incapable of giving true weight. In this service I have had an opportunity of studying the disposition of all parties concerned, to be fair and avoid strikes and trouble. The influence of the joint movement was strongly in evidence and to the miners' officers and the operators' commissioner I desire to return my thanks for courtesies shown me in the performance of my duties as a state mine inspector.

WARREN COUNTY.

There are ten mines in this county, nearly all of local character, commonly known as country banks. The coal worked ranges from two feet six inches to three feet six inches in thickness, only one mine having direct railroad shipping connection, hence the production of coal is largely for local use. The mine ventilation is good, four mines using fans, the others having the old furnace method. The hoisting is done entirely with horses on the gin-power principle.

One non-fatal accident occurred in this county during the biennial period. The county produced 41,700 tons of coal and employed ninety men and boys.

MARION COUNTY.

This county, with a record for a large coal production in the past, now promises to figure at the top of the list for large mines, and a large coal tonnage.

The south half of this county seems to be underlaid with a vein of coal ranging in thickness from five feet to thirteen feet. One of the veteran coal operators of the county, Mr. J. A. Powers, formerly of the O. K. coal company, is the pioneer prospector of these large coal deposits and leads in the development. He has opened one shaft and three slopes, all machinery and equipment being of the most improved character. These mines are located some six miles northwest of Bussey and have connections with the Wabash railroad from Tracey, a track running along Cedar Creek, between the hills for about seven miles.

These mines are operated under the very appropriate name of The Manmouth Vein Coal company, which organization has succeeded to the title and properties of the O. K. Coal company, Mr. Powers being continued as the president and general manager, while Mr. A. E. Hollingsworth is secretary, with general offices at Des Moines.

There were three fatal accidents and twelve non-fatal accidents occurred in this county during the past two years. At present there are 575 miners and other employes working in this county. The difficulty now being to find houses for the people coming to these fields; work and wage earnings in this large coal, offering special advantages and inducements. The coal production for the two years is 596,917 tons.

Mr. William Phillips, of Oskaloosa, a life-long coal man, opened up a large mine at Flagler, along the Rock Island railroad, which promised to be a good paying coal producing property. Much money was spent in this development, but the fates of misfortune followed, and Mr. Phillips was obliged to abandon the mine with heavy loss.

The Knoxville Coal company, operating in the vicinity of Flagler, promises much for the coal production of Marion county. Mr. Harry Booth, an old pioneer coal man, is in control of this property. Connections are being made with the Chicago, Burlington and Quincy railroad, and a sort of mining revival is promised in the Flagler vicinity. Mr. Booth has five feet six inches of good coal and a sound roof, which is essential to successful mining.

The Southeastern Coal company has opened, by shaft, a new mine at Hamilton, but at this writing have not succeeded in making any railroad connection. The mine is over 200 feet deep; the coal is five feet six inches thick. The top works and machinery equipment are of the best for a large volume of business; but little progress seems to be made for railroad connection and shipment, consequently there are but few hands employed and little business done.

The mines are all new and the production will, I predict, be astonishingly large during the next two years.

MAHASKA COUNTY.

There are twenty-six mines in this county, worked on the room and pillar plan, employing in the aggregate 1,382 miners and other workmen. The production for the past two years is 1,413,711 tons. It has been known for many years as first in coal production, but is fast fading in prominence to the fields of other counties. There were, however, several large new mines opened since the last coal report, located on an extension of the Chicago & Northwestern R. R., Buxton branch, making neighboring coal properties to Mr. Buxton's large mines. Pioneer coal men from What Cheer district have opened new mines under the names of Creston coal company, and the Rex coal company respectively. Large investments have been made by these people. The mine machinery and equipment is of the most modern kinds and a very large coal tonnage is looked for. Each company has a large coal area and have made by prospecting a very thorough canvass of the coal resources of the territory controlled.

The coal field borders on the east of the large coal deposits of Marion county and report an equally thick coal with that operated by the Manmouth Vein Coal Company.

There has been opened a new mine at Colon, operated by the Morrow Coal company, of Oskaloosa. A shaft 128 feet deep has been sunk and the coal is four feet six inches thick. There is good top works and fair equipment. Seventy-eight men are employed, producing about 250 tons per day.

The Spring Creek Coal company, succeeding to the coal properties of the Smith Bros. mine, located five miles northeast of Oskaloosa, have changed the enterprise from a small gin-pit to a steam power railroad shipping mine, and a largely increased tonnage is sure to result from this change.

A number of small mines continue to produce coal in this county, and such will be in evidence for many years to come. There was twenty-five fatal and twenty-five non-fatal accidents reported for the two years.

KEOKUK COUNTY.

This county, including the once far famed mining district of What Cheer, and retaining for years a place with the largest coal producing counties of the state, is fast fading from the roll, and unless some of the many prospectors now at work find better than their present labors indicate, the district of What Cheer and the county of Keokuk is doomed to insignificance in coal mining affairs. There will continue to be several small or country coal banks that can easily be relied upon to supply coal enough for local requirements.

The tonnage report for the two years is 221,412 tons. The number of miners 226. Five fatal and three non-fatal accidents have occurred.

WAPELLO COUNTY.

This county employed during the past two years 765 miners and other workmen.

The tonnage reported to this office is 684,094 tons for the two years.

The county still retains its position as a large coal producer and promises to continue prominent in coal production for years to come. The following companies have opened new mines: The Anchor Coal company, a shaft at Laddsdale. The Phillips Fuel company of Ottumwa, a shaft west of their old No. 4 mine, now abandoned, and the Ottumwa Brick and Construction company, a shaft south of the Roseland Coal company, near Ottumwa. These new enterprises are equipped with modern machinery and are capable of handling a large tonnage.

There are several mines in South Ottumwa that have no railroad shipping facilities and furnish the local market. This local business has grown to large proportions and is constantly increasing. To meet such requirements the local mines have made much needed improvements.

Accidents for two years: Three fatal and twelve non-fatal.

VAN BUREN COUNTY.

This county, which is in the southeastern part of the second district, as now comprised, has been producing coal for many years. There are several mines in operation, furnishing employment to seventy-two men and has produced 35,456 tons of coal during the two years reported for.

The coal is of uniform thickness from three feet to three feet six inches, and is reached by shaft at a depth of from fifty to eighty-five feet. All of these mines are situated along the Rock Island road, near the towns of Doud Station and Farmington. The greater portion of the output of coal is consumed locally in the towns named. Ventilation is principally by furnace and like Davis and Jefferson counties is ample for all the requirements.

JEFFERSON COUNTY.

This county is a small producer of coal, having but four small mines and all are country banks located in the vicinity of Fairfield. Employment is furnished to twenty-eight men throughout the fall and winter season. The production reported is 8,785 tons. The coal commands a very good price in the home market. Ventilation is by furnace.

DAVIS COUNTY.

There are four mines located in this county in the vicinity of Eldon. Three of them are drift openings and one a shaft, furnishing employment during the last biennial period to sixteen men. The coal production is 7,050 tons. None of the mines in this county have railroad facilities for shipping and have therefore to depend entirely upon the local market for business. The means of ventilation is by furnace and natural, which seems sufficient.

CONCLUSION

After an experience of sixteen years working in the coal mines of Pennsylvania and Iowa, both in anthracite and bituminous coal, coming from family and social associations of mining life, I naturally took up the duties of a state mine inspector with no small degree of concern and anxiety that my services might be for the greatest possible good to miners and operators. With all possible respect for the capital invested in the coal mining business, I made paramount my object to secure the fullest measure of safeguard for the lives and health of those employed in and about the coal mines of the second district. I pride myself in having secured much improvement in various directions.

Large fans with a permanent capacity for a large volume of air have succeeded in several places the old fan which had scarcely force beyond the requirements of the ordinary or country mine kind. Improvement to air shafts; proper and solid air-tight closing of old crosscuts and headings, good doors and brattices have been installed; that air might travel in sufficient volume to the working places (face) of our miners, driving in rapid force, in the return columns, the poisoned and smoke-laden air, to prevent gas accumulations which fortunately is seldom found in Iowa mines. I work for good air and good ventilation, realizing the truth of the maxim, that "an ounce of prevention is better than a pound of cure."

As to powder, gas or dust explosions: I regard it only necessary for our miners and shooters to exercise care and caution to avert such accidents, so shocking in our mining life, and in this period of modern mining methods; conceding all merit that there may be in the scientific or theoretic recommendations of non-practical men; the remedy is entirely within the province of our laws and the sensible disposition of the mine people to comply with the requirements of the law and the rules laid down to govern, care in handling explosives, judgment in placing shots, and the abandonment of all unreasonably large blasts, careful propping of all working places, the careful timbering of entries and travel ways, bad entries being especially dangerous to drivers hauling coal. A bad joint of rail might cause a car to jump the track, knock out a prop or set of timbers that would cause a fall of rock upon a driver, crushing him to eternity or crippling him for life. In every mine it should be made a rule not to tolerate the presence of heavy smoke along haul-ways or regular traveling gangways.

The co-operation of mine owners, especially between the pit boss and the pit committee on these points, for good air and well timbered gangways, entries and working places and the character of blasts to be made, will mitigate, if not entirely wipe out, accidents and death in our coal mines. I make those recommendations and invite the joint efforts of miners and operators to the same end.

TABLE No. 1.

Showing number of mines, output of coal, number of miners and other employes in District No. 2 for year ending June 30, 1902.

NAME OF COUNTY.	Number of mines.	Total amount of coal produced.	Number of miners.	Number of other employes.	Average number of days worked.
Mahaska.....	26	734,885	962	438	202
Wapello.....	13	318,929	414	214	234
Marion.....	18	303,042	500	147	179
Keokuk.....	15	133,880	248	78	190
Warren.....	0	21,435	60	19	186
Van Buren.....	7	16,713	42	15	203
Jefferson.....	4	4,785	22	6	120
Davis.....	4	3,850	18	4	120
Total.....	97	1,542,519	2,268	921	.....

TABLE No. 2.

Showing number of mines, output of coal, number of miners and other employes in District No. 2 for year ending June 30, 1903.

NAME OF COUNTY.	Number of mines.	Total amount of coal produced.	Number of miners.	Number of other employes.	Average number of days worked.
Mahaska.....	26	678,826	920	453	188
Wapello.....	13	365,165	506	259	233
Marion.....	18	295,875	400	175	202
Keokuk.....	15	82,532	156	70	174
Warren.....	10	20,265	65	25	190
Van Buren.....	7	18,740	52	20	142
Jefferson.....	4	4,000	13	3	120
Davis.....	4	3,200	12	4	124
Total.....	97	1,468,603	2,133	1,009	.....

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

MAHASKA COUNTY.

NAME OF COMPANY.	SUPERINTENDENT.	POST OFFICE ADDRESS.	SHAFT OR SLOPE.	PLAN OF WORKING.	HOW VENTILATED.	POWER USED.	SHIPPING OR LOCAL.
Consolidation Coal Company No. 9.	B. C. Buxton	Buxton	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Lost Creek Coal Company No. 2.	J. Trimble.	Lost Creek.	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Regal Coal company.	Dan Reigel	Oskaloosa.	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Whitebreast Fuel Company No. 28.	Evan Reese	Pekay	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Garfield Coal Company No. 2.	J. H. Ramsay.	Oskaloosa.	Shaft.	Room and pillar.	Fan	Steam	Shipping.
American Coal Company No. 7.	W. T. Phillips.	Evans	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Oskaloosa Coal and Mining company.	John Ramsay	Beacon	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Eveland Coal company.	John Price.	Eveland	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Rex Fuel company.	C. Durfey	Bussey.	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Morrow Coal company.	George Morrow.	Oskaloosa.	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Black Diamond Coal company.	George Carlon.	Oskaloosa.	Slope.	Room and pillar.	Jet	Steam	Shipping.
Crescent Coal company.	James Chew.	White City.	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Spring Creek Coal company.	J. H. Smith.	Oskaloosa.	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Bur Oak Coal company.	W. T. Phillips.	Olivet.	Shaft.	Room and pillar.	Fan	Horse	Local.
Coryell & Son Coal company.	F. D. Coryell.	Eddyville	Slope.	Room and pillar.	Furnace	Horse	Local.
Kennebec Coal company.	A. Love	Muchaknock	Slope.	Room and pillar.	Furnace	Horse	Local.
Atwood Coal company.	Jno. Reynolds.	Atwood	Slope.	Room and pillar.	Furnace	Horse	Shipping.
Barrowmen & Oakley Coal company.	R. Barrowmen.	Oskaloosa.	Slope.	Room and pillar.	Natural	Horse	Local.
Schultz Coal company.	F. Schultz.	Oskaloosa.	Slope.	Room and pillar.	Furnace	Horse	Local.
Evans Coal company.	Mr. Evans.	New Sharon.	Slope.	Room and pillar.	Fan	Horse	Local.
Williams Coal company.	W. F. Williams.	New Sharon.	Slope.	Room and pillar.	Furnace	Steam	Local.
Carey Coal company.	M. Carey	Rose Hill	Shaft.	Room and pillar.	Furnace	Horse	Local.
Raven Coal company.	A. B. Little.	Oskaloosa.	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Sowden Coal company.	J. H. Sowden.	Oskaloosa.	Shaft.	Room and pillar.	Furnace	Horse	Local.
Patterson & Son Coal company.	Wm. Patterson.	Leighton	Shaft.	Room and pillar.	Furnace	Horse	Local.
Frey Bros. Coal company.		Leighton	Shaft.	Room and pillar.	Furnace	Horse	Local.

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WARREN COUNTY.

D. Utterson Coal company.	Wm. Smith	Carlisle	Shaft.	Long wall.	Furnace	Horse	Local.
Shackley & Bennum Coal company	B. B. Bennum.	Somerset	Shaft.	Long wall.	Fan	Horse	Local.
Welch Coal company	J. E. Welch	Somerset	Shaft.	Long wall.	Fan	Horse	Local.
Somerset Coal company	R. W. Earle.	Somerset	Shaft.	Room and pillar.	Fan	Horse	Shipping.
Casady & Turnipseed Coal company.	Wm. Turnipseed	Somerset	Shaft.	Room and pillar.	Fan	Horse	Local.
Bales Coal company.	N. D. Bales.	Milo	Shaft.	Room and pillar.	Furnace	Horse	Local.
Bryant Coal company.	S. C. Bryant	Milo	Shaft.	Room and pillar.	Furnace	Horse	Local.
Williams Coal company.	J. A. Williams	Milo	Shaft.	Room and pillar.	Furnace	Horse	Local.
Rowley Coal company.	Ed Rowley	Liberty Center	Shaft.	Room and pillar.	Furnace	Horse	Local.
Barber & Perkins Coal company.	J. T. Barber.	Carlisle	Shaft.	Room and pillar.	Furnace	Horse	Local.

KEOKUK COUNTY.

Margaret Coal company.	Jno. Donavan	What Cheer	Shaft.	Room and pillar.	Fan	Steam	Shipping.
What Cheer Fuel company.	H. D. Baker	What Cheer	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Volunteer Coal company	Thos Thompson	What Cheer	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Grudgings Bros. Coal company.	Dan Grudgings	What Cheer	Shaft.	Room and pillar.	Natural	Horse	Local.
Maxwell Coal company	Robt. Maxwell	What Cheer	Shaft.	Room and pillar.	Natural	Horse	Local.
Graham & Dixon Coal company.	David Graham	What Cheer	Shaft.	Room and pillar.	Natural	Horse	Local.
Lambert Bros. Coal company.	Ed Spavin.	What Cheer	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Bell & Teeters Coal company.		Delta	Shaft.	Room and pillar.	Furnace	Horse	Local.
O. W. Oliver Coal company.	O. W. Olive.	Delta	Shaft.	Room and pillar.	Furnace	Horse	Local.
M. Fisher Coal company.	Martin Fisher.	Delta	Shaft.	Room and pillar.	Furnace	Horse	Local.
H. Murray Coal company.	H. Murray	What Cheer	Shaft.	Room and pillar.	Furnace	Horse	Local.

VAN BUREN COUNTY.

Ratcliff Coal Company No. 1	H. L. Ratcliff	Douds	Shaft.	Room and pillar.	Furnace	Horse	Shipping.
Ratcliff Coal Company No. 2	H. L. Ratcliff	Douds	Shaft.	Room and pillar.	Furnace	Horse	Shipping.
Finley Coal company	J. A. Finley.	Douds	Shaft.	Room and pillar.	Furnace	Horse	Shipping.
Henry Knott Coal company	H. Knott	Farmington	Shaft.	Room and pillar.	Furnace	Horse	Shipping.
Sherick & Alfrey Coal company.	O. S. Alfrey.	Farmington	Shaft.	Room and pillar.	Furnace	Horse	Shipping.
Cahill Coal company	P. Cahill	Farmington	Shaft.	Room and pillar.	Furnace	Horse	Local.
Carson Coal company.	Wm. Carson.	Douds	Shaft.	Room and pillar.	Furnace	Horse	Shipping.

WAPELLO COUNTY.

Phillips Fuel Company No. 5.	A. J. Eskins.	Ottumwa	Shaft.	Room and pillar.	Fan	Steam	Shipping.
Anchor Coal company.	W. B. Williams.	Laddsdale	Shaft.	Room and pillar.	Fan	Steam	Shipping.

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WAPELLO COUNTY—CONTINUED.

NAME OF COMPANY.	SUPERINTENDENT.	POST OFFICE ADDRESS.	SHAFT OR SLOPE.	PLAN OF WORKING.	HOW VENTILATED.	POWER USED.	SHIPPING OR LOCAL.
Carbon Coal company.....	I. L. Lodwick.....	Willard.....	Shaft.....	Room and pillar.	Fan.....	Steam.....	Shipping.
Bear Creek Coal company.....	Jacob Allen.....	Bear Creek.....	Slope.....	Room and pillar.	Fan.....	Steam.....	Shipping.
South Ottumwa Coal company.....	G. W. Grooms.....	Ottumwa.....	Slope.....	Room and pillar.	Furnace.....	Horse.....	Local.
Star Coal company.....	Wm. Dempster.....	Ottumwa.....	Slope.....	Room and pillar.	Fan.....	Steam.....	Local.
Spring Hill Coal company.....	Chas. Oleson.....	Ottumwa.....	Shaft.....	Room and pillar.	Furnace.....	Horse.....	Local.
Excelsior Coal company.....	S. G. Styre.....	Ottumwa.....	Shaft.....	Room and pillar.	Fan.....	Horse.....	Local.
Risher Coal company.....	R. R. Risher.....	Ottumwa.....	Shaft.....	Room and pillar.	Fan.....	Steam.....	Local.
Illinois and Iowa Fuel company.....	Jas. Shevlin.....	Keb.....	Shaft.....	Room and pillar.	Fan.....	Steam.....	Shipping.
Roseland Coal company.....	A. D. Lumsden.....	Ottumwa.....	Shaft.....	Room and pillar.	Fan.....	Steam.....	Shipping.
Brown Brothers Coal company.....	C. W. Brown.....	Keb.....	Shaft.....	Room and pillar.	Fan.....	Steam.....	Local.
John Daniels Coal company.....	Jno. Daniels.....	Ottumwa.....	Shaft.....	Room and pillar.	Furnace.....	Horse.....	Local.

JEFFERSON COUNTY.

Wm. Hull Coal company.....	William Hull.....	Fairfield.....	Shaft.....	Room and pillar.	Furnace.....	Horse.....	Local.
Bates Coal company.....	G. W. Bates.....	Fairfield.....	Shaft.....	Room and pillar.	Furnace.....	Horse.....	Local.
Gardener Coal company.....	A. Gardener.....	Fairfield.....	Shaft.....	Room and pillar.	Furnace.....	Horse.....	Local.
Tweedy Coal company.....	J. Tweedy.....	Libertyville.....	Shaft.....	Room and pillar.	Natural.....	Horse.....	Local.

MARION COUNTY.

Buwalda Bros. Coal company.....	J. Buwalda.....	Pella.....	Shaft.....	Room and pillar.	Steam jet.....	Steam.....	Local.
Dielman Coal company.....	J. R. Dielman.....	Pella.....	Shaft.....	Room and pillar.	Natural.....	Steam.....	Local.
Hollingsworth Coal company.....	E. Hollingsworth.....	Otley.....	Slope.....	Room and pillar.	Furnace.....	Horse.....	Local.
Youkon Coal company.....	J. B. Mezlar.....	Otley.....	Slope.....	Room and pillar.	Furnace.....	Horse.....	Local.
Wild Rose Coal and Mining company.....	G. W. Rupe.....	Morgan Valley.....	Shaft.....	Room and pillar.	Fan.....	Steam.....	Shipping.
Dunreath Coal company.....	W. W. Sulley.....	Dunreath.....	Shaft.....	Room and pillar.	Fan.....	Horse.....	Shipping.
Booth Coal company.....	H. Booth.....	Knoxville.....	Slope.....	Room and pillar.	Natural.....	Horse.....	Shipping.
Hayes Coal company.....	J. T. Hayes.....	Knoxville.....	Slope.....	Room and pillar.	Furnace.....	Horse.....	Shipping.
Hawkeye Coal company.....	L. E. Phillips.....	Knoxville.....	Shaft.....	Room and pillar.	Fan.....	Steam.....	Shipping.
Manmouth Coal company.....	J. A. J. Powers.....	Hamilton.....	Shaft.....	Room and pillar.	Fan.....	Steam.....	Shipping.
Southeastern and Iowa Fuel company.....	R. D. Adey.....	Hamilton.....	Shaft.....	Room and pillar.	Fan.....	Steam.....	Shipping.

Miller Coal company.....	Wm. Miller.....	Knoxville.....	Slope.....	Room and pillar.	Furnace.....	Horse.....	Shipping.
Cedar Creek Coal company.....	J. T. Jones.....	Hamilton.....	Shaft.....	Room and pillar.	Fan.....	Steam.....	Shipping.
Price Coal company.....	J. R. Price.....	Otley.....	Slope.....	Room and pillar.	Furnace.....	Horse.....	Shipping.

DAVIS COUNTY.

Sickle Coal company.....	J. M. Sickle.....	Eldon.....	Slope.....	Room and pillar.	Furnace.....	Horse.....	Local.
Dye Coal company.....	G. W. Dye.....	Eldon.....	Slope.....	Room and pillar.	Furnace.....	Horse.....	Local.
Jordon Coal company.....	John Jordon.....	Eldon.....	Slope.....	Room and pillar.	Furnace.....	Horse.....	Local.
Lunsford Coal company.....	A. C. Lunsford.....	Lunsford.....	Shaft.....	Room and pillar.	Furnace.....	Horse.....	Local.

Fatal accidents in District No. 2, for two years ending June 30, 1903.

DATE.	NAME.	OCCUPATION.	CAUSE OF DEATH.	MINE WHERE ACCIDENT OCCURRED.	COUNTY.
August 24, 1901	James Glass	Miner	Fall of slate	American	Mahaska.
October 9, 1901	William Golithly	Miner	Fall of coal	Garfield	Mahaska.
October 23, 1901	William Demoss	Miner	Fall of slate	J. P. Price	Marion.
December 27, 1901	John James	Miner	Fall of slate	American	Mahaska.
January 1, 1902	Ben Leclair	Miner	Fall of slate	Columbia	Koosuk.
January 24, 1902	John Oleson	Shotfirer	Flying coal	O. K. No. 5	Marion.
January 24, 1902	Michael Fox, Sr.	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	Michael Fox, Jr.	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	Russell Fish	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	Daniel Fish	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	John Elder	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	C. Crews	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	Samuel Humphrey	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	David Walters	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	John Stovall	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	S. C. Crayton	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	John Martin	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	John Kovall	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	George Pash	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	Geo. Denchok	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	Alex. Gray	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	John McNealey	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	Jas. Humphrey	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	Jos. Gaspari	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	Frank Gaspari	Miner	Explosion	Lost Creek	Mahaska.
January 24, 1902	John Bert	Miner	Explosion	Lost Creek	Mahaska.
January 25, 1902	Lancelot Walker	Mine foreman	Caught between cage and shaft	Atwood	Mahaska.
January 27, 1902	John B. Leclerg	Miner	Fall of slate	Columbian	Koosuk.
January 28, 1902	John Leclair	Miner	Fall of slate	Columbian	Koosuk.
March 22, 1902	Samuel D. Cooper	Miner	Fall of slate	Roseland	Wapello.
April 26, 1902	Geo. Howard	Driver	Fall of slate	Lambert	Koosuk.
September 26, 1902	Dave Moody	Miner	Fall of slate	Garfield	Mahaska.
January 29, 1903	Nathan Hollingsworth	Driver	Fall of slate	John-on & Hollingsworth	Marion.
March 12, 1903	James Baxter	Driver	Found under car	Anchor	Wapello.
March 14, 1903	W. J. Overstake	Miner	Fall of slate	Illinois & Iowa	Wapello.
June 4, 1903	Robt. Maxwell, Jr	Top man	Fell down shaft	Maxwell	Koosuk.

Non-fatal accidents in District No. 2 for two years ending June 30, 1903.

DATE.	NAME.	OCCUPATION.	CHARACTER OF INJURY.	CAUSE OF ACCIDENT.	MINE WHERE ACCIDENT OCCURRED.	COUNTY.
July 30, 1901	Robert Hocking	Miner	Rib fractured	Fall of slate	American	Mahaska.
August 6, 1901	Peter Ennis	Mine foreman	Collar bone broken	Fall of slate	Ennis & Co	Marion.
August 17, 1901	John Duskin	Driver	Bruised	Fell under car	American	Mahaska.
August 19, 1901	J. A. S. Reeves	Miner	Bruised	Fall of slate	American	Mahaska.
October 10, 1901	Hugh Casady	Cager	Leg broken	Coal falling down shaft	O. K. No. 5	Marion.
December 3, 1901	J. B. Skelton	Cager	Leg broken	Caught between cars	O. K. No. 5	Marion.
December 9, 1901	Chas. Maybie	Driver	Collar bone broken	Caught between car and rib	O. K. No. 5	Marion.
January 3, 1902	Garret Rootseller	Miner	Leg broken	Fall of slate	J. R. Price	Marion.
January 6, 1902	William Green	Miner	Back injured	Fall of slate	Illinois & Iowa	Wapello.
January 13, 1902	William Flemming	Miner	Back injured	Fall of slate	Illinois & Iowa	Wapello.
January 18, 1902	Brice Gibb	Miner	Leg injured	Fall of coal	Illinois & Iowa	Wapello.
January 24, 1902	John Jurkin	Cager	Burned	Explosion	Lost Creek	Mahaska.
January 24, 1902	Geo. Gogo	Miner	Lungs affected by after damps	Explosion	Lost Creek	Mahaska.
January 24, 1902	Jonas Mahie	Driver	Leg broken	Explosion	Lost Creek	Mahaska.
January 24, 1902	Oliver Mahie	Trapper	Arm broken	Explosion	Lost Creek	Mahaska.
January 24, 1902	Chas. Lannan	Driver	Burned	Explosion	Lost Creek	Mahaska.
January 24, 1902	Frank Seccress	Miner	Arm broken	Explosion	Lost Creek	Mahaska.
January 24, 1902	Ed. Swanson	Driver	Back injured	Explosion	Lost Creek	Mahaska.
January 24, 1902	William Booth	Trapper	Burned	Explosion	Lost Creek	Mahaska.
January 24, 1902	Wm. Fothergill, Jr	Trapper	Burned	Explosion	Lost Creek	Mahaska.
January 24, 1902	Geo. Fothergill, Jr	Driver	Burned	Explosion	Lost Creek	Mahaska.
January 24, 1902	Mat Aday, Jr.	Trapper	Burned	Explosion	Lost Creek	Mahaska.
January 24, 1902	William Harvey	Miner	Lungs affected by after damps	Explosion	Lost Creek	Mahaska.
January 24, 1902	Harry Darroek	Driver	Burned	Explosion	Lost Creek	Mahaska.
January 24, 1902	Asa Sullivan	Dumper	Burned	Explosion	Lost Creek	Mahaska.
January 31, 1902	Jas. Muller	Miner	Back injured	Fall of slate	Illinois & Iowa	Wapello.
February 28, 1902	Pete Casaden	Miner	Scalp wound	Flying coal	American	Mahaska.
February 6, 1902	William Glenn	Miner	Rib fractured	Fall of slate	O. K. No. 5	Marion.
February 10, 1902	John Holiday, Sr.	Miner	Foot broken	Fall of slate	Lambert	Koosuk.
February 25, 1902	Sam Reeser	Driver	Leg broken	Caught between car and rib	O. K. No. 5	Marion.
March 6, 1902	Gus Carlson	Driver	Leg broken	Fall of slate	O. K. No. 5	Marion.
March 27, 1902	John Holob	Miner	Leg broken	Fall of slate	Garfield	Mahaska.
April 28, 1902	Thos. Tabor, Jr.	Miner	Bruised	Fall of slate	Consolidation No. 9	Mahaska.
May 20, 1902	John Harding	Miner	Bruised	Fall of slate	Marion	Mahaska.
June 15, 1902	Wm. Davis	Driver	Cut on head and hand	Fall of slate	Lambert	Koosuk.
September 20, 1902	Jess Costa	Miner	Jaw broken	Fall of slate	Bear Creek	Wapello.
September 23, 1902	David Jinks	Track layer	Head cut	Run over by car	Illinois & Iowa	Wapello.
November 8, 1902	William Nicholson	Trapper	Amputation of finger	Explosion	Illinois & Iowa	Wapello.
November 12, 1902	Jas. Graham	Miner	Hip crushed	Fall of slate	Carbon	Wapello.
November 27, 1902	Ethel Porter	Miner	Concussion of brain	Flying coal	Consolidation No. 9	Mahaska.
November 18, 1902	P. S. Thor	Miner	Scalp wound	Fall of slate	Lost Creek	Mahaska.

NON-FATAL ACCIDENTS IN DISTRICT NO. 2 FOR TWO YEARS ENDING JUNE 30, 1903—CONTINUED.

DATE.	NAME.	OCCUPATION.	CHARACTER OF INJURY.	CAUSE OF ACCIDENT	MINE WHERE ACCIDENT OCCURRED.	COUNTY.
November 20, 1902	A. Mercer	Miner	Back and leg injured	Fall of slate	Somerset	Warren.
November 29, 1902	Thos. Simpson, Jr.	Driver	Limbs injured	Car turned over	Illinois & Iowa	Wapello.
December 22, 1902	Geo. Lord	Driver	Leg broken	Caught by car	Roseland	Wapello.
January 7, 1903	Chas. Peterson	Miner	Right hand injured	Fall of slate	Illinois & Iowa	Wapello.
January 12, 1903	Christ Nelson	Driver	Leg broken	Fall of slate	O. K. No. 5	Marion.
February 1, 1903	Jas Cowan	Driver	Collar bone broken	Caught between car and post	Margaret	Keokuk.
February 20, 1903	W. M. Daniels	Miner	Arm broken	Loose board on cage	Hawkeye	Marion.
February 28, 1903	Jas. Clarkson	Miner	Bruised	Fall of slate	Morrow	Mahaska.
March 12, 1903	Wm. Little	Miner	Back hurt	Fall of slate	O. K. No. 5	Marion.
May 1, 1903	Wm. Bishop	Miner	Shoulder hurt	Fall of coal	O. K. No. 5	Marion.
June 1, 1903	Clarence Howard	Miner	Leg broken	Caught between car and rib	Phillips	Wapello.
June 11, 1903	Francis Chambers	Driver	Leg broken, spinal column dislocated and internal injuries	Caught between cars	Consolidation No. 9	Mahaska.

THIRD DISTRICT.

LETTER OF TRANSMITTAL.

TO THE HON. A. B. CUMMINS, Governor of Iowa.

Sir,—I have the honor to submit herewith the biennial report, ending June 30, 1903, for the Third Mine Inspection District.

Respectfully,

J. W. MILLER.

THIRD DISTRICT.

With one exception the third inspection district remains the same as during the biennial period ending June 30, 1899. Adair County has been placed in the second district and Scott County, formerly in the second district, has been placed in the third district.

The third district is now composed of the following counties: Polk, Jasper, Boone, Webster, Greene, Dallas, Guthrie, Story and Scott.

POLK COUNTY.

This county is located near the central part of the coal field of Iowa and has for a number of years been one among the largest coal producing counties in the state. While coal has been mined in this county for a number of years, each year finds new companies in the field opening up and equipping mines. The local trade being very good in this county, owing to Des Moines, the capital of the state, being located here, there are a number of local mines located in and around Des Moines. These local mines do very little work during the summer months, but during the winter season produce quite a large tonnage and give employment to several hundred men.

The mines located on the various railroads in the county, as a rule, work a greater part of the time during the summer as well as during the winter months.

North of Des Moines and within three miles of the city limits are two large, modern equipped mines, located on spurs from the C. & N.-W. R. R. known as the Saylor Coal company's mine and the Des Moines Coal company's mine. The Saylor Coal company's main shaft, located at Saylorville, is 225 feet deep. The employes in and around the mine average 253. The vein of coal at this mine is from four to five feet in thickness. The Des Moines Coal company's main shaft, located at Marquisville, is 225 feet deep. The vein is from four to six feet thick. About 254 men are employed in and

around this mine. This company is sinking a shaft near Enterprise and expect to open out and equip a mine as rapidly as possible. This mine will be located on the D. M., I. F. & N. R. R.

Northeast of Des Moines and on a switch of the C. G. W. R. R. is located the mine of the Maple Grove Coal company. This company employs about sixty men in and around its mine. The main shaft is 105 feet deep. The vein is about five feet in thickness.

East and north of the Maple Grove Coal company's mine and on the same railroad is located the Norwood Coal company's mine. The main shaft of this mine is 215 feet deep. The vein is from four to five feet in thickness. About 175 men are employed in and around this mine. This company has opened and equipped their mine No. 2, which is located about two miles east of Valley Junction and on the Milwaukee railroad.

The mine known as the Great Western or Highland mine was bought and operated a portion of last winter by the Woodin Coal company. On account of the mine being too expensive to operate it was abandoned in February of this year.

The Gibson Coal company's mine No. 3 that was located east of Des Moines has been abandoned. The company has opened and equipped mine No. 4, two miles west of Altoona and on the C. R. I. & P. R. R. The main shaft is 190 feet deep. The vein is from four to five feet thick. About 100 men are employed at this mine and it promises to be one of the largest producers in the county.

The Smith-Lowe Coal company is operating their mines Nos. 2 and 3 at Carbondale, about five miles southeast of Des Moines. These mines are located on the C., R. I. & P. R. R. Mine No. 4 is being opened and equipped. This company employs about 280 men in and around their mines. The vein of coal is from four to five feet in thickness.

The Christy Coal company's mine that was operated for several years at Youngstown, four and one-half miles east of Des Moines, has been abandoned.

The Co-operative Coal company has abandoned their mine which they formerly operated near Lake Park in Des Moines.

The Bloomfield Coal company's mine north of Des Moines does a very large local business. Their main shaft is 102 feet deep. The vein is about five feet in thickness. During the winter months they employ about 150 men. They do some shipping, the coal being hauled by team to the cars.

Northwest of Des Moines is located the Keystone Coal company's mine, the Eagle Coal company's mine, Center Coal company's mine and the West Riverside Coal company's mine. The vein of coal worked by these companies is about five feet in thickness. While some coal is loaded on cars from these mines, the greater part is sold to local consumers. During the winter season they employ from forty to 100 men each. Near the Eagle Coal company's mine the Madison Coal company has recently opened out and equipped a mine for local trade.

The Glenwood Coal company is operating a mine just north of the state fair ground. The mine was opened and equipped last winter. They expect to supply quite a large local trade.

The Capital Coal company, a new company, has opened and equipped a mine in South Des Moines and are preparing to do a large local business this fall and winter.

The Midway Coal company is operating a mine five miles southwest of Des Moines. They employ about sixty men. The vein is from four and one-half to five feet in thickness. The depth of their main shaft is 120 feet.

The Flint Brick and Coal company operate a mine in the northwest part of Des Moines. They employ about thirty men. They consume the greater part of their output in connection with their brick yard. During the winter they supply some local trade.

The Oak Park Coal company's mine, located north of Highland Park, Des Moines, employs about fifty men during the winter months. This company depends mostly on local trade.

The Diamond Joe Coal company is operating a mine one mile north of Runnells. They have in their employ about fifty men. This mine is located on the Wabash railroad. Besides the railroad trade they do considerable local business during the winter months.

Evans Brothers have opened and equipped a new mine five miles northeast of Des Moines.

There are a number of local mines, located in various parts of the county, that work only during the fall and winter. These mines depend exclusively on local or country trade.

JASPER COUNTY.

Coal has been mined in this county for a number of years, and some years ago there was a very good tonnage produced; however, it gradually decreased until there were only a few local mines in the county. In recent years the tonnage has been increasing, and from the drilling that has been done during the past two years it is evident that this county's tonnage will be increased very materially during the next biennial period.

The Jasper County Coal Company and the Colfax Coal and Mining Company are now owned by one company, known as the Colfax Consolidated Coal Company. This company has mines No. 6 and 7, located near Seevers, four miles southeast of Colfax, and on their own line of railroad, which connects with the C., R. I. & P. at Colfax. These mines are well equipped and are doing a large shipping business. They employ in and around these mines about 608 men and boys. The main shaft of mine No. 6 is 130 feet in depth and the vein is from five to six feet in thickness. At mine No. 7 the main shaft is fifty-nine feet deep, and the vein from five to six feet in thickness.

There are four or five local mines located near Newton; six or seven in the vicinity of Colfax and several in other parts of the county. These mines depend entirely on local trade.

SCOTT COUNTY.

This county has a number of mines, none of which produce more than 4,000 tons per year. Coal has been mined in this county for a number of years. The mines have always been local mines with no railroad connec-

tions and the tonnage has never been large. The mines of this county are located within a radius of five miles of Jamestown, which is about nine miles from Davenport. The Long Coal company has abandoned the mine they operated for several years and is now sinking a new main shaft west of Buffalo. At the Carlon and Buchmeyer mines an escape shaft has just been completed. At the Hanlon mine and the Sass Brothers mine escape shafts are in progress of sinking. The coal averages about three feet in thickness and is worked on the room and pillar plan. These mines are not in operation as much during the summer as during the winter months. A large local trade is supplied by the mines during the winter months. Horse power and furnace ventilation are in vogue at these mines.

BOONE COUNTY.

The mines of this county are worked principally on the long wall plan. The vein is from three to four feet in thickness.

The Boone Valley Coal and Railroad company is operating their Nos. 1, 3, 5 and 6 mines within one mile of Fraser. New air and escape shafts have been provided for these mines, except No. 3, during the past year. The escape shaft for No. 3 is now being provided. This company has its own railroad connecting with the M. & St. P. at Fraser Junction and with the C., R. I. & P. at Gowrie. This company is now extending their railway line to Newton, with a view of connecting with the I. C. R. R.

West of Boonesboro is located the Crowe Coal company, Boone County Coal company, Risher Coal company and the W. D. Johnson Coal company. These mines all have connection with the C. & N.-W. R. R.

The Zimbleman Coal company and the Heaps Coal company have sold out.

Benson Brothers have abandoned their shaft.

The W. D. Johnson mine has had considerable trouble with a fire that broke out in their mine October, 19, 1902. They are now sinking a new main shaft at the face of the old workings of the Logan mine, which will enable them to increase their tonnage and reduce the cost of handling the same.

There are several small mines located along the river north of Madrid and across the river southwest of Madrid. These mines are small and do only a local business during the winter months.

WEBSTER COUNTY

Webster county lies the farthest north of any of the coal producing counties of the state.

The Crooked Creek Coal and Railroad company is operating their mine No. 5, two and one half miles south of Lehigh. The depth of the main shaft

is twenty-five feet and the vein is about three and one half feet in thickness. They employ during the summer months about fifty men; during the winter months this number is increased. This company owns its railroad connecting with the C. G. W. at Lehigh and C. N.-W. and I. C. at Webster City.

The Webster County Coal and Land company is not operating a mine in this county now. The Pleasant Valley Coal company and the Gleason Coal company are operating mines east of Coalville. They have railroad connection with the G. W. R. R. The vein of coal is from five to six feet thick at these mines and is worked by the room and pillar method. They employ about fifty-five men each. The Upper Valley Coal company is operating a mine three miles southwest of Lehigh. They expect to begin sinking an air and escape shaft at once, also to equip the mine with steam power, modern improved machinery and railway facilities. One mile nearer Lehigh Samuel McClure is sinking a new shaft. He is also sinking a new shaft four miles south of Lehigh. The Daily Coal company is operating a mine two and one half miles southwest of Lehigh and on the G. W. R. R. The vein is about three and one half feet thick and about eighty feet in depth.

There are several smaller mines that do a local business during the winter months.

DALLAS AND GUTHRIE COUNTIES.

The coal measures being worked by the mines in these counties are about the same. The coal is mined principally by the long wall method.

The Platt Brick and Coal company who have operated a mine in connection with their brickyard for a number of years have abandoned their mine at Van Meter.

Hutchison Brothers are operating a mine two miles west of Dawson in Dallas county. This mine is equipped with steam power and is ventilated by a fan. The thickness of the vein at this mine is about three and one half feet and the depth of the main shaft is eighty feet. Reese Brothers are operating their mines Nos. 1 and 2 five and six miles south of Madrid. These mines are equipped with steam power.

Near Panora, in Guthrie county, there is one or two mines. Along the river between Guthrie Center and five miles above Fansler there is ten or twelve mines. Northwest of Madrid, in Dallas county, there are several local mines. These mines do very little work during the summer months, as they depend entirely on local trade. During the winter season they work steadily and employ quite a number of men. They have no arrangements at any of these mines whereby coal can be stored for fall and winter trade and, at times, during the winter they have difficulty in supplying the local demand.

GREENE COUNTY.

In this county there are six mines in operation. They are located near Angus. The vein being worked is from four to five feet in thickness. Steam power is used at several of these mines and fan ventilation is most prevalent. Some of the coal produced by the mines near Angus is hauled to the cars for shipment; however, they depend more on local trade, which is very good during the fall and winter.

This county has advantages in shipping to the northern markets that should be quite an inducement for a shipping mine. Several new shafts are being put down southwest of Angus.

The Goodwin Coal company at Grand Junction is doing very little at present, but expect to start up again soon. They operate in connection with their mine a brickyard, and consume a great deal of their own coal.

SCALES.

Sixty-five tests of scales were made during the last biennial period. When scales were found deficient and condemned the companies, with few exceptions, were ready and willing to have them adjusted as soon as possible.

SHOT EXAMINERS.

In compliance with the shot examiners' law, passed by the Twenty-ninth General Assembly, shot examiners have been certified to and employed at all mines where coal is blasted.

One hundred and forty-five men have been certified to as being competent to act in the capacity of shot examiners in this district. With two or three exceptions these examiners have performed their work in a satisfactory and agreeable manner. When it has been demonstrated that an examiner was negligent or careless in the performance of his work his name has been immediately taken off the list.

In some of the mines in this district shot firers are employed to fire the shots after they are examined, the shot examiner, as a rule, also acting as shot firer.

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

POLK COUNTY.

NAME OF COMPANY.	SUPERINTENDENT.	POST OFFICE 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	Thos. Carpenter	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
Smith-Lowe Coal Company No. 2	E. C. Smith	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 No. 1	Jos. Norwood	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
Norwood Coal Company No. 2	Jos. Norwood	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
Gibson Coal Company No. 4	John Gibson	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
Maple Grove Coal company	Charles Swanson	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
Bloomfield Coal company	George Yarn	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
Diamond Joe Coal company	John Shuler	Runnells	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	G. M. Holmes	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
Midway Coal company	Charles Carlson	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
West Riverside Coal company	Jos. Jackson	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
Flint Brick and Coal company	Mike Quinn	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
Center Coal company	Isaac Evans	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
Oak Park Coal company	Edward Herdman	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
O. K. Coal company	L. M. 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.
Enterprise Coal company	G. E. Walters	Enterprise	Shaft	Room and pillar.	Fan	Steam	Shipping.
Madison Coal company	Wm. Madison	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
Evans Brothers Coal company	E. Evans	Des Moines	Shaft	Room and pillar.	Fan	Steam	Shipping.
Avon Coal company	J. W. Hammond	Avon	Shaft	Room and pillar.	Fan	Steam	Shipping.
McKinney Coal company	A. McKinney	Runnells	Slope	Room and pillar.	Furnace	Horse	Local.
Newman Coal and Brick company	Chas. Newman	Hastie	Slope	Room and pillar.	Furnace	Horse	Local.
Merchant Coal company	Wm. Merchant	Commerce	Shaft	Long wall	Furnace	Horse	Local.
Bertrand and Tilton	John Tilton	Commerce	Shaft	Long wall	Furnace	Horse	Local.

WEBSTER COUNTY.

NAME OF COMPANY.	SUPERINTENDENT.	POST OFFICE ADDRESS.	SHAFT OR SLOPE.	PLAN OF WORKING.	HOW VENTILATED.	POWER USED.	SHIPPING OR LOCAL.
Crooked Creek Coal company No. 5	F. E. Will-on	Webster City	Shaft	Long wall	Fan	Steam	Shipping.
Pleasant Valley Coal company	Jerry Dawson	Kalo	Shaft	Room and pillar.	Fan	Steam	Shipping.
Gleason Coal company	John Gleason	Coalville	Shaft	Room and pillar.	Fan	Steam	Shipping.
Corey Coal company	Reese Stephens	Lehigh	Shaft	Long wall	Fan	Steam	Shipping.
Craig and Dawson	Jerry Dawson	Kalo	Shaft	Long wall	Fan	Steam	Shipping.
Daily Coal Company	M. Z. Williams	Lehigh	Shaft	Long wall	Fan	Steam	Shipping.
Collins Coal company	E. W. Collins	Coalville	Shaft	Room and pillar.	Furnace	Steam	Shipping.
Johnson Coal company	W. J. Johnson	Kalo	Shaft	Long wall	Fan	Horse	Shipping.
Irwin Brothers	Thos Irwin	Kalo	Shaft	Long wall	Fan	Horse	Local.
Owen Coal company	Frank Owen	Ft. Dodge	Shaft	Long wall	Furnace	Horse	Local.
Morris and McClure Coal company	J. H. Orres	Lehigh	Slope	Long wall	Furnace	Horse	Local.
Upper Valley Coal company	M. G. Kellogg	Lehigh	Shaft	Long wall	Fan	Steam	Local.
Martin Coal company	Charles Martin	Moorland	Shaft	Room and pillar.	Furnace	Horse	Local.
Timmon's Coal company	Hugh Timmons	Ft. Dodge	Shaft	Long wall	Furnace	Horse	Local.
Bennett Coal company	S. Bennett	Kalo	Slope	Long wall	Furnace	Horse	Local.
Calford Coal company	P. Lochray	Moorland	Shaft	Room and pillar.	Furnace	Horse	Local.
Allen Coal company	T. J. Allen	Moorland	Shaft	Room and pillar.	Furnace	Horse	Local.
Pence Coal company	H. Pence	Lehigh	Slope	Room and pillar.	Furnace	Horse	Local.
Starberry Coal company	J. Starberry	Kalo	Slope	Long wall	Furnace	Horse	Local.

BOONE COUNTY.

Boone Valley Coal & R. R. Co., No. 1	Robt. Kennedy	Fraser	Shaft	Long wall	Fan	Steam	Shipping.
Boone Valley Coal & R. R. Co., No. 2	Robt. Kennedy	Fraser	Shaft	Long wall	Fan	Steam	Shipping.
Boone Valley Coal & R. R. Co., No. 3	Robt. Kennedy	Fraser	Shaft	Long wall	Fan	Steam	Shipping.
Boone Valley Coal & R. R. Co., No. 4	Robt. Kennedy	Fraser	Shaft	Long wall	Fan	Steam	Shipping.
Boone Valley Coal & R. R. Co., No. 5	Robt. Kennedy	Fraser	Shaft	Long wall	Fan	Steam	Shipping.
Boone Valley Coal & R. R. Co., No. 6	Robt. Kennedy	Fraser	Shaft	Long wall	Fan	Steam	Shipping.
Boone County Coal company	Wm. Benson	Boonsboro.	Shaft	Long wall	Fan	Steam	Shipping.
W. D. Johnson Coal company	W. D. Morgan	Boonsboro.	Shaft	Long wall	Fan	Steam	Shipping.
Crowe Coal company	Wm. Crowe	Boonsboro.	Shaft	Long wall	Fan	Steam	Shipping.
Risher Coal company	T. W. Hughes	Boonsboro.	Shaft	Long wall	Fan	Steam	Shipping.
Rodgers Coal company	Geo. Rodgers	Incline	Shaft	Room and pillar	Furnace	Horse	Local.
Wilson Coal company	Jas. Wilson	Pilot Mount.	Shaft	Room and pillar	Furnace	Horse	Local.
McCormick Coal company	Jas. Wilson	Luther	Slope	Room and pillar	Furnace	Horse	Local.
Wiscup	Jas. Wilson	Luther	Slope	Room and pillar	Furnace	Horse	Local.

JASPER COUNTY.

Colfax Consolidated Coal Company No. 4	Geo. Richards	Colfax	Shaft	Room and pillar.	Fan	Steam	Shipping.
Colfax Consolidated Coal Company No. 7	Geo. Wilson	Colfax	Shaft	Room and pillar.	Fan	Steam	Shipping.
Barret Coal company	J. W. Barret	Colfax	Shaft	Room and pillar.	Furnace	Horse	Local.
French Coal company	E. P. French	Newton	Shaft	Room and pillar.	Fan	Steam	Local.
Carson Bros. Coal company	A. Carson	Newton	Shaft	Room and pillar.	Furnace	Horse	Local.
Snooks Coal company	Thos Snooks	Newton	Shaft	Room and pillar.	Furnace	Horse	Local.
Lister Coal company	Alfred Lister	Newton	Shaft	Room and pillar.	Furnace	Steam	Local.
Gunther Coal company	John Gunther	Colfax	Shaft	Room and pillar.	Furnace	Horse	Local.
Cavet Coal company	John Cavet	Vandalia	Shaft	Room and pillar	Furnace	Horse	Local.
Bruce Coal company	John Bruce	Manroe	Slope	Room and pillar.	Furnace	Horse	Local.
Shaw Coal company	Gilbert Shaw	Draper	Slope	Room and pillar.	Furnace	Horse	Local.
Jno. McConeghey	Jno. McConeghey	Draper	Slope	Room and pillar	Furnace	Horse	Local.
Worrick Bros. Coal company	Jas. Worrick	Colfax	Slope	Room and pillar	Furnace	Horse	Local.

GUTHRIE COUNTY.

Batschlet & Merchant Coal company	John Merchant	Panora	Shaft	Long wall	Furnace	Horse	Local.
King & Stoddard Coal company	E. E. Stoddard	Bayard	Shaft	Long wall	Furnace	Horse	Local.
Morris & Perkins Coal company	Thos. Morris	Fansler	Shaft	Long wall	Furnace	Horse	Local.
Mallon Coal company	M. Mallon	Fansler	Shaft	Long wall	Furnace	Horse	Local.
Scott Coal company	W. H. Scott	Fansler	Shaft	Long wall	Furnace	Horse	Local.
Cooper Coal company	J. C. Cooper	Fansler	Slope	Long wall	Furnace	Horse	Local.
Sipe & Mansell Coal company	John Mansell	Fansler	Shaft	Long wall	Furnace	Steam	Local.
Clippier Coal company	Wm. Merchant	Fansler	Shaft	Long wall	Furnace	Fansler	Local.
Reese Coal company	David Reese	Panora	Shaft	Long wall	Furnace	Horse	Local.
Paul Coal company	Jas. Paul	Fansler	Shaft	Long wall	Natural	Horse	Local.
Butler Coal company	T. J. Butler	Fansler	Shaft	Long wall	Natural	Horse	Local.
Raner Coal company	C. C. Raner	Fansler	Shaft	Long wall	Natural	Horse	Local.
Chapple Coal company	Richard Chapple	Jamaica	Shaft	Room and pillar	Natural	Horse	Local.

DALLAS COUNTY.

Griscoe Coal company	Thos. Grisoco	Madrid.	Slope	Room and pillar.		Horse	Local.
Knox Coal company	Wm. Knox	Madrid.	Slope	Room and pillar.		Horse	Local.
Vernon Coal company	G. W. Mongin	Madrid.	Slope	Room and pillar.	Natural	Horse	Local.
Reese Bros. Coal Company No. 1	W. J. Reese	Madrid	Shaft	Room and pillar.	Jet	Steam	Local.
Reese Bros. Coal Company No. 2	W. J. Reese	Madrid.	Shaft	Long wall	Fan	Steam	Local.
Hutehison Coal company	W. C. Hutehison	Dawson	Shaft	Room and pillar.	Fan	Steam	Local.

SCOTT COUNTY.

NAME OF COMPANY.	SUPERINTENDENT.	POST OFFICE ADDRESS.	SHAFT OR SLOPE.	PLAN OF WORKING.	HOW VENTILATED.	POWER USED.	SHIPPING OR LOCAL.
Hanlon Coal company	John Hanlon	Jamestown	Shaft.	Room and pillar.	Furnace	Horse	Local.
Langwith Coal company	E. T. Langwith	Jamestown	Shaft.	Room and pillar.	Furnace	Horse	Local.
Sass Bros. Coal company	Wm. Sass	Jamestown	Shaft.	Room and pillar.	Furnace	Horse	Local.
Couch Coal company	Theo. Couch	Buffalo	Shaft.	Room and pillar.	Furnace	Horse	Local.
Long Coal company	L. Long	Jamestown	Shaft.	Room and pillar.	Furnace	Steam	Local.
Clintoner Coal company	M. H. Clintoner	Jamestown	Shaft.	Room and pillar.	Furnace	Steam	Local.
Buchmeyer & Carlon Coal company	Jno. Buchmeyer	Jamestown	Shaft.	Room and pillar.	Fan	Steam	Local.

GREENE COUNTY.

NAME OF COMPANY.	SUPERINTENDENT.	POST OFFICE ADDRESS.	SHAFT OR SLOPE.	PLAN OF WORKING.	HOW VENTILATED.	POWER USED.	SHIPPING OR LOCAL.
Willow Grove Coal company	H. A. McElhanev	Angus	Shaft.	Long wall.	Fan	Steam	Local.
Goodwin Coal company	Thos. Goodwin	Grand Junction	Shaft.	Long wall.	Fan	Steam	Shipping.
Buckeye Coal company	Mike Fifeh	Angus	Shaft.	Long wall.	Fan	Steam	Local.
Ditchburn Coal company	Robt. Ditchburn	Angus	Shaft.	Long wall.	Fan	Horse	Local.
Thomas Coal company	H. L. Thomas	Angus	Shaft.	Long wall.	Fan	Steam	Local.
Keystone Coal company	W. M. Bennett	Angus	Shaft.	Long wall.	Furnace	Horse	Local.

Showing number of mines, output of coal, number of miners and other employees in District No. 3 for the year ending June 30, 1902.

TABLE No. 1.

NAME OF COUNTY.	Number of mines.	Total amount of coal produced.	Number of miners.	Number other employees.	Average number of days worked.
Polk	30	681,610	1,384	467	214
Boone	17	287,800	640	211	168
Madison	17	222,000	338	45	188
Union	10	132,477	255	130	226
Dallas	7	34,477	106	38	218
Scott	12	7,753	106	38	190
Guthrie	12	16,122	121	30	136
Greene	4	16,122	9	3	206
Story	1	2,300	9	3	140
Total	118	1,753,122	2,882	986	180

Showing number of mines, output of coal, number of miners and other employees in District No. 3 for the year ending June 30, 1903.

TABLE No. 2.

NAME OF COUNTY.	Number of mines.	Total amount of coal produced.	Number of miners.	Number other employees.	Average number of days worked.
Polk	25	906,573	1,127	488	222
Boone	12	288,055	480	165	225
Madison	13	323,112	508	182	200
Union	10	130,900	280	104	165
Dallas	9	19,900	75	35	130
Scott	12	18,225	70	12	180
Guthrie	13	18,225	70	12	180
Greene	6	12,711	53	9	165
Total	92	1,835,456	2,081	1,010	185

TABLE NO. 3.

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

COUNTIES.	1899	1900	1901	1902	1903
Boone	371,410	281,180	302,800	286,300	288,055
Dallas	13,600	18,090	29,400	34,750	19,990
Greene	22,600	11,850	12,400	16,192	12,711
Guthrie	16,400	17,700	16,750	17,250	16,545
Jasper	184,800	159,200	134,500	153,400	323,312
Polk	790,410	854,500	938,600	981,610	996,573
Scott	11,800	19,650	22,460	28,973	18,280
Story	9,600	5,300	3,200	2,260	
Webster	187,650	156,400	167,300	132,477	153,990

ACCIDENTS.

During the past two years thirty-two non-fatal accidents have been reported to this office by the various companies. Doubtless other accidents have occurred, but not reported on account of not being of sufficient importance or through lack of attention on the part of the company.

Eighteen fatal accidents have occurred during the past two years.

Following is a summary account of each fatal accident occurring during the past two years:

Fatal accidents in District No. 3, for the two years ending June 30, 1903.

DATE.	NAME.	OCCUPATION.	LOCATION.	NAME OF COMPANY.	CAUSE OF CASUALTY.
July 18, 1901	Freeman Wade	Miner	Marquisville	Des Moines Coal and M. Co.	Fall of roof.
August 30, 1901	Jno. Mehalwick	Miner	Saylorville	Saylor Coal company	Flying coal.
September 6, 1901	Jno. Jacquith	Miner	Des Moines	Christy Coal company	Flying coal.
November 7, 1901	Jno. Enburg	Driver	Lehigh	Crooked Creek C. and R. Co.	Fall down shaft.
November 25, 1901	James Cox	Miner	Des Moines	Midway Coal company	Fall of coal.
December 17, 1901	Alenzo Pirozolla	Miner	Des Moines	Bloomfield Coal company	Fall of coal.
January 10, 1902	James Burgess	Miner	Lehigh	Webster County C. and L. Co.	Fall of coal.
February 25, 1902	Jos. Tumas	Miner	SeEVERS	Colfax Consolidated Coal Co.	Fell under car.
May 1, 1902	Lewis Watkins	Miner	Des Moines	Bloomfield Coal company	Fall of roof.
May 7, 1902	John Jones	Miner	Saylorville	Saylor Coal company	Flying coal.
June 9, 1902	Peter Peterson	Miner	Norwoodville	Norwood Coal company	Flying coal.
June 25, 1902	John Emanuel	Miner	Saylorville	Saylor Coal company	Fall of slate.
June 30, 1902	James Jones	Miner	Saylorville	Saylor Coal company	Fall of slate.
September 27, 1902	John Allen	Miner	Altoona	Gibson Coal company No. 4	Flying coal.
December 11, 1902	John Braniff	Miner	Norwoodville	Norwood Coal company	Fall of slate.
December 27, 1902	Swan Peterson	Miner	Des Moines	Midway Coal company	Fall of slate.
January 9, 1903	N. B. Logsdon	Miner	Saylorville	Saylor Coal company	Fell down shaft.
February 17, 1903	Richard Guthrie	Miner	Des Moines	Midway Coal company	Fall of slate.

Non-fatal accidents in District No. 3, for biennial period ending June 30, 1903.

DATE.	NAME.	NAME OF COMPANY.	LOCATION.	OCCUPATION	CHARACTER OF INJURY.	CAUSE OF ACCIDENT.
July 25, 1901	Joe Wilson	Norwood Coal company	Norwoodville	Miner	Leg broken	Fall of slate.
July 30, 1901	Robt. Hughes	Smith-Lowe Coal Co. No. 3	Carbondale	Miner	Leg broken	Fall of slate.
Aug. 23, 1901	J. H. Jinkins	Jasper Co. Coal Co. No. 6	SeEVERS	Miner	Small bone in leg broken	Fall of slate.
Oct. 31, 1901	John Pearson	Jasper Co. Coal Co. No. 6	SeEVERS	Timberman	Back sprained	Fall of slate.
Oct. 31, 1901	Harry Gibson	Jasper Co. Coal Co. No. 6	SeEVERS	Miner	Ankle sprained	Fall of slate.
Nov. 9, 1901	Ed Johnson	Keystone Coal company	Des Moines	Miner	Leg broken	Flying coal.
Nov. 11, 1901	Wm. Wichee	Midway Coal company	Des Moines	Miner	Leg broken	Fall of slate.
Nov. 28, 1901	Tom Davison	Jasper Co. Coal Co. No. 6	SeEVERS	Miner	Left side, ribs and foot sprained.	Fall of clay.
Jan. 25, 1902	W. Thomas	Eagle Coal company	Des Moines	Miner	Face and hands burned.	Blown out shot.
Jan. 27, 1902	Emil Gustavson	Smith-Lowe Coal Co. No. 3	Carbondale	Miner	Face and hands burned.	Blown out shot.
Jan. 27, 1902	Geo. Phillips	Smith-Lowe Coal Co. No. 3	Carbondale	Miner	Face and hands burned.	Blown out shot.
Jan. 27, 1902	Wm. Newton	Smith-Lowe Coal Co. No. 3	Carbondale	Timberman	Face and hands burned.	Blown out shot.
April 10, 1902	Arthur Johnson	Saylor Coal company	Saylorville	Oiler	Leg broken	Trying to ride tail chain.
April 24, 1902	John Lind	Bloomfield Coal company	Des Moines	Miner	Rib broken	Fall of slate.
May 7, 1902	Walter Clark	Smith-Lowe Coal Co. No. 3	Carbondale	Fireman	Hand crushed	Caught in engine.
May 7, 1902	Robt. Heathcote	Des Moines Coal company	Marquisville	Miner	Bruised	Flying coal.
May 8, 1902	Harry Hughes	Colfax Con. Coal Co. No. 6	SeEVERS	Miner	Injured internally	Fall of slate.
May 18, 1902	Mich. Burris	Colfax Con. Coal Co. No. 6	SeEVERS	Miner	Bruised	Fall of slate.
May 19, 1902	James Diggle	Jasper Co. Coal Co. No. 6	SeEVERS	Driver	Leg broken	By trip.
July 24, 1902	I. S. Blackmore	W. D. Johnson Coal Co.	Bonsboro	Driver	Rib Broken	Dragged between cars.
Aug. 20, 1902	Alex. North	Goodwin Coal company	Grand Junct.	Miner	Rib broken	Fall of slate.
Sept. 23, 1902	Chas. Bowers	Colfax Con. Coal Co. No. 6	SeEVERS	Miner	Leg broken	Fall of slate.
Oct. 7, 1902	James Hutt	Des Moines Coal company	Marquisville	Shot firer	Leg broken	Flying coal.
Oct. 10, 1902	F. Arrowwood	Des Moines Coal company	Marquisville	Trapper	Bones in foot fractured.	Fall of slate.
Oct. 31, 1902	H. Smith	French Brothers	Newton	Miner	Ankle bone broken	Case dropped.
Jan. 5, 1903	Walter Foreman	Des Moines Coal company	Marquisville	Driver	Ribs broken	Car ran on h.m.
Jan. 13, 1903	Fred Herdman	Smith-Lowe Coal Co. No. 2	Carbondale	Miner	Scalp wound	Flying coal.
Jan. 15, 1903	Juel Jonson	Pleasant Valley Coal Co.	Coalville	Miner	Back bone fractured	Fall of coal.
Jan. 23, 1903	Thomas Holland	Saylor Coal company	Saylorville	Miner	Leg crushed	Fall of slate.
Jan. 30, 1903	P. Ward	Smith-Lowe Coal Co. No. 2	Carbondale	Driver	Collar bone broken	Caught between car and roof.
Feb. 8, 1903	Frank Harris	Norwood Coal company	Norwoodville	Miner	Collar bone broken	Ran into trip.
March 10, 1903	Frank Jones	Smith-Lowe Coal Co. No. 2	Carbondale	Shot firer	Face and hands burned.	Flores from shot.

FREEMAN WADE.

In the Des Moines Coal and Mining company's mine, located at Marquisville, in Polk county, on July 18, 1901, about three o'clock P. M., Freeman Wade, a miner twenty-seven years of age was killed in his room, No. 16, off the fourth east entry off the fifteenth south entry, by fall of roof. Mr. Wade went into his room to sound the roof and it fell, as he struck it with his pick, and crushed him. He was taken to the Methodist hospital in Des Moines and died there about 11:35 P. M., July 18th. Mr. Wade was aware that the roof was loose and had been warned by several not to go in his room. He was a single man.

JOHN MEHALIWICK.

On August 30, 1901, about 11:30 A. M., John Mehaliwick, a miner about fifty years of age, was killed in room No. 11, sixth east south entry, in the Saylor Coal company's mine, located at Saylor, in Polk county. Deceased and partner had two shots which they lit and went out to wait until they went off. One shot exploded, and after waiting they returned to the room to see why the second shot did not go off. When he reached the shot it exploded and killed him instantly. Deceased's family except one boy reside in Austria.

WILLIAM JACQUITH.

While working, as a coal miner, in the first room off the east entry of the twelfth south in the Christy Coal company's mine, located southeast of Des Moines, in Polk county, William Jacquith received injuries on September 6, 1901, about 11:30 A. M. from which he died.

While Mr. Jacquith and others were passing along the entry, a shot drilled and fired by James Giles, who worked in a room parallel to the entry, blew through the pillar, flying coal struck Mr. Jacquith and he died from the injuries.

JOHN ENBURG.

In the Crooked Creek Coal and Railroad company's mine No. 5, located at Lehigh, in Webster county, John Enburg, a driver, was killed by falling from the first landing to the bottom of the shaft, a distance of about 100 feet, on November 7, 1901.

Mr. Enburg opened the gate and evidently forgetting that it was opened, pushed a car into the shaft and apparently followed the same as both car and man were found at the bottom of the shaft. Deceased leaves a wife and five or six children.

JAMES COX.

James Cox, a miner about sixty years of age, who was employed at the Midway Coal company's mine, located southwest of Des Moines, Polk county, was killed in his room in the fifth east entry of said mine, on November 25, 1901, at about 4:30 P. M.

Mr. Cox and his son had fired two shots and had returned to relight the third, it having failed to go off. The son thinks his father used two squibs

the second time. The blast exploded before he could get away, injuring him to such an extent that he died. Deceased was married and leaves a wife and six or seven children.

ANGELO PIROZOLLA.

Angelo Pirozolla, a miner about twenty-five years of age, employed by the Bloomfield Coal and Mining company north of Des Moines, in Polk county, was injured in his room No. 3, ninth east entry, about 4:30 P. M. on December 17, 1901, and died while being taken to Mercy hospital about 7:30 P. M.

Mr. Pirozolla, not returning from the mine to his boarding house in the evening, two of the men returned to the mine to search for him. He was found alive in his room. His arm was broken, also leg and hip. He said he had lit his shot and a concussion from another shot in an adjoining room put out his light. In the darkness he failed to get out of his room before his shot went off.

JAMES BURGESS.

At 12:30 P. M. on January 10, 1902, at the face of the coal in the sixth place on fuel entry, in the Webster County Coal and Land company's mine, located at Lehigh, in Webster county, James Burgess, a miner, forty-two years of age, came to his death. Mr. Burgess and his partner, Mr. King, prepared their shot for noon firing. Mr. King lit the squib and they both departed for dinner, separating at the switch. Not hearing the explosion Mr. Burgess went back and put in another squib, and that failed. He returned again and put in another squib. After waiting, he went back to put in the fourth squib. When about twenty five feet away No. 3 went off and Mr. Burgess was injured to such an extent that he died at 4:50 P. M. that day.

Mr. Burgess was a single man and leaves a mother.

JOSEPH TUMAS.

Joseph Tumas was killed in his room in mine No. 6 of the Colfax Consolidated Coal company, located three and one-half miles south of Colfax, on February 25, 1902, about 11:30 A. M.

The coal near the face was rising quite rapidly. Mr. Tumas was in the act of getting a car of coal away from near the face of his room so as to fire his shot at firing time. The surroundings where Mr. Tumas was found seemed to indicate that he had fallen under the car, throwing the same off the track, pinning him between a prop and the front end of the car, crushing him internally, from which injuries he died within a short time after being removed.

Mr. Tumas was a single man.

LEWIS WATKINS.

At mine No. 2 of the Bloomfield Coal company, located north of Des Moines, in Polk county, Lewis Watkins, a miner fifty years of age, was injured at 11:30 A. M. on May 1, 1902. Mr. Watkins was a married man

and had a wife and six children. He worked with his brother-in-law, Ed Hawkins, in the north entry. When they entered their entry in the morning they examined the roof and found it loose nearly up to the face. They thought it was just the edge of a thin piece of slate and that it would not require attention until afternoon, so neglected to attend to it. However, it fell and Mr. Watkins received injuries to his spinal column that eventually caused his death, which occurred on May 20, 1902.

JOHN JONES.

John Jones, a miner thirty-three years of age and who was acting, in company with Robert Heathcote, as shot firer, came to his death by being struck by flying coal from a shot in room No. 7 off the tenth east entry, off the first north entry, about 8:30 p. m., May 7, 1902, in Sailor Coal Company's mine.

They had fired several shots before reaching this room. After lighting the fuse they went out and waited for it to burn. After waiting what they thought was long enough they returned to investigate, and upon entering the room the shot exploded. Mr. Jones was injured by flying coal to such an extent that he died shortly afterward.

Mr. Jones leaves a wife and three children.

PETER PETERSON.

Peter Peterson, a miner in the employ of the Norwood Coal company at their mine one and one half miles west of Berwick, Polk county, was killed in his room, No. 9, second west of said mine on June 9, 1902.

He had two shots to fire. One shot went out but he did not know it; the other shot squibbed. He went back and put the needle in the hole; the shot went off throwing Mr. Peterson about fifteen feet and killing him.

JOHN EMANUEL.

In the Saylor Coal company's mine, located at Saylor, Polk county, five miles north of Des Moines, John Emanuel, a miner aged fifty-five or sixty, who had been in the employ of this company for two years, was accidentally killed by a fall of slate in his room, No. 24, fourth east south, at 7:30 a. m., on June 25, 1902. The slate fell from the rib side of his roadway, where he had put in a brushing shot. Evidently he had not taken down all the loose slate and it fell just as he was commencing his work for the day.

Deceased was a widower and leaves a family of two daughters and one son.

JAMES JONES.

James Jones, a miner about thirty years of age, was killed by slate falling on him at 11:30 a. m., on June 30, 1902, in his room, No. 3 off the eighth, east south, in Saylor Coal company's mine, at Saylor, in Polk county.

At this mine every man does his own firing, after the shots have been approved by the shot examiner. When it came his time to fire he told the

man in the place next to him to go ahead. He was missed by the driver and Chas. Meister. When A. Streeter and Chas. Meister went to his room to look for him he was found lying about ten feet from the face of the room with a piece of coal, that weighed about 150 pounds, on his head. The supposition is that his shot failed to go off and he returned to examine it, and that it went off as he was entering the room to investigate.

Mr. Jones was a married man and leaves a wife and two children.

JOHN ALLEN.

John Allen, a miner in the employ of the Gibson Coal company at their No. 4 mine, located one and one half mile west of Altoona, Polk county, was killed by flying coal from a shot, September 27, 1902.

Mr. Allen and his co-worker, Harrison McClintic, had prepared and lit their shot. Going to a place of safety, they thought, they awaited the explosion of the shot. Mr. McClintic was behind a pile of dirt and was uninjured. Mr. Allen, who was standing a few feet away, was struck by flying coal and instantly killed.

JOHN BRANIFF.

John Braniff, a young man aged 19 years, who was working with his father in the Norwood Coal company's mine northeast of Des Moines, in a room at the mouth of the third east entry, north side, was killed while loading a car of coal by a fall of slate in the shape of a horse back, caused by a slip in the roof, at 11:15 a. m., December 11, 1902.

They had sounded the roof the two days previous and believed the same to be in safe condition. However, like a great many cases, it unexpectedly fell, killing the young man almost instantly.

LINCOLN DAVIS.

In the Saylor Coal company's mine, located at Saylor, in Polk county, on December 10, 1902, about 4:00 p. m., Lincoln Davis, a miner, received injuries from which he died the following day at Mercy Hospital in Des Moines.

Slate fell on him while he was waiting his turn to shoot at the face of his room No. 10, tenth west south entry, breaking his leg and injuring his back.

SWAN PETERSON.

Swan Peterson was killed in the Midway Coal company's mine, two and one half miles southwest of the city of Des Moines, at 3:00 p. m., on December 27, 1902.

He was working in a room with Charles Lext, which room was number three off the eighth, east entry on the south side of the shaft. Mr. Peterson had just finished loading a car and was in the act of shoveling coal from the left hand rib of their room when a piece of slate fell from between two slips, commonly called a horseback, breaking his back and causing internal injuries from which he died shortly after being brought to the surface.

N. B. LOGSDON.

On January 9, 1903, at 5:40 p. m., N. B. Logsdon, a miner in the employ of the Saylor Coal company at Saylor, in Polk county, fell from the ground landing to the bottom of the shaft. He breathed but a few times after striking the bottom.

Mr. Logsdon and his partner, Mr. Thomas, were letting down props. Before the first cage was sent down they sent the cager down and the cage was not returned, although they did not know it. They neglected to put the bar across the shaft. They then loaded a car of props and did not ascertain whether the cage had been returned to the ground landing. The car was pushed into the empty shaft and Mr. Logsdon followed it down. Mr. Thomas caught the center post and thus saved his life.

RICHARD D. GUTHERIE.

Richard D. Guthrie, a miner in the employ of the Midway Coal company, located three miles southwest of Des Moines, was instantly killed by slate falling on him in his room, between 9 and 10 o'clock in the morning, on February 19, 1903.

Mr. Guthrie's attention had been called to the unsafe condition of the roof in his room, but thinking it was safe he failed to put any props up. While he was at work under this loose slate and rock it fell and completely buried him under it.

TWELFTH
BIENNIAL REPORT
OF THE
BOARD OF HEALTH
OF THE
STATE OF IOWA
FOR THE
PERIOD ENDING JUNE 30, 1903



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