

FOURTH BIENNIAL REPORT
OF THE
STATE MINE INSPECTORS

TO THE
GOVERNOR OF THE STATE OF IOWA,

FOR THE YEARS 1888 AND 1889.

PRINTED BY ORDER OF THE GENERAL ASSEMBLY.

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STATE MINE INSPECTORS

TO THE
GOVERNOR OF THE STATE OF IOWA,

For the Two Years Ending June 30, 1880.

THOMAS BINKS,
JAMES GILDROY,
JAS. E. STOUT,
Inspectors.

FIRST DISTRICT,

EMBRACING

APPANOOSE, ADAMS, DAVIS, JEFFERSON, LUCAS, MARION,
MONROE, PAGE, TAYLOR, VAN BUREN, WAPELLO,
WARREN AND WAYNE COUNTIES.

THOMAS BINKS, OTTUMWA, INSPECTOR.

BIENNIAL REPORT.

To his Excellency, WILLIAM LARRABEE, Governor of Iowa:

SIR—In compliance with the laws defining the duties of Inspector of Mines, I herewith submit the report of the First Inspection District for the two years ending June 30, 1889.

The following report gives the usual tabulated statements, showing the number of mines, shipping and local; the number of new mines opened, and abandoned mines; the number of mines and other employes during the winter months; the value of coal at the mines for each county and for the district; the total tonnage for each county and the district, and the amount shipped out of the State; a record is also made of fatal and non-fatal accidents.

The First District contains twenty-seven counties, thirteen of which are coal producing, namely: Appanoose, Adams, Cass, Davis, Jefferson, Lucas, Marion, Monroe, Page, Taylor, Van Buren, Wapello, Warren and Wayne.

Respectfully submitted,

THOMAS BINKS,

Mine Inspector, District No. 1, Ottumwa, Iowa.

TABLE

FOR YEAR ENDING

COUNTY.	Production of lump coal, in tons.	Production of nut coal.	Number of tons shipped out of State.	Total number of mines.	Shipping mines.	Local mines.	Total number miners employed.	Other employees.
Appanoose.....	210,353	.....	.....	13	13	30	770	160
Adams.....	18,817	.....	.....	12	12	107	15	.....
Davis.....	1,800	.....	.....	5	5	20	4	.....
Lucas.....	284,253	80,700	154,527	13	4	9	930	412
Marion.....	211,343	19,209	136,560	44	10	34	454	249
Monroe.....	197,548	30,348	93,558	18	10	8	404	133
Page.....	3,430	.....	.....	4	4	28	3	.....
Taylor.....	8,092	.....	.....	15	4	6	65	10
Van Buren.....	25,960	.....	.....	15	4	11	71	16
Wapello.....	312,197	68,108	.....	22	7	15	816	242
Wayne.....	24,235	.....	.....	8	1	7	78	25
Warren.....	15,633	1,450	.....	27	1	26	113	30
Jefferson.....	9,387	.....	.....	7	2	5	57	12
Total.....	1,922,936	206,011	304,674	216	54	162	3,913	1,321

No. 1.

JUNE 30, 1888.

KIND OF MINE.	KIND OF POWER USED.				VENTILATING POWER USED.				ACCIDENTS.		Amount of money paid for mining.	Amount of money paid for labor.	Total value of product at mines.
	Shaft.	Slope.	Drift.	Steam.	Horse.	Hand.	Fan.	Furnace.	Natural.	Fatal.				Non-fatal.
18	6	9	6	23	4	2	22	0	0	1	180,236.70	22,000.00	279,191.50
10	5	.....	.....	12	.....	.....	10	10	.....	.....	28,350.50	28,000.00	42,350.50
15	5	.....	.....	.....	1	5	.....	5	.....	.....	1,800.00	500.00	2,300.00
13	2	.....	.....	14	5	.....	4	.....	0	4	227,410.40	143,628.40	437,222.80
15	5	6	8	14	5	5	3	14	29	1	162,856.40	66,237.80	298,818.74
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	173,422.00	68,850.00	275,632.32
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	400.00	7,717.50	1,250.00
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12,003.00	1,250.00	18,000.00
3	4	8	.....	10	0	.....	.....	5	10	.....	19,470.00	3,110.00	34,470.00
16	0	.....	.....	15	.....	.....	6	5	11	5	233,513.75	108,800.00	438,620.35
7	1	.....	.....	1	6	1	1	6	1	.....	21,863.70	8,000.25	28,770.45
6	3	18	1	5	21	1	1	.....	.....	1	21,377.75	2,200.50	25,817.70
5	2	.....	.....	.....	.....	.....	.....	3	4	.....	8,448.30	1,825.00	14,500.50
96	47	73	20	110	77	18	73	133	10	41	\$1,100,797.50	\$79,832.14	\$1,932,780.81

COAL OUT-PUT.

Of the counties comprising District No. 1, for the past five years.

COUNTY.	1885.	1886.	1887.	1888.	1889.
Appanoose.....	245,806	150,000	160,251	210,262	246,654
Adams.....	3,806	9,581	19,831	18,817	13,556
Cass.....	33,655	1,000	1,800	1,800	320
Davis.....	1,136	1,083	10,207	9,387	7,445
Jefferson.....	430,950	530,750	472,068	364,960	263,851
Marion.....	100,911	141,694	212,233	320,652	143,504
Monroe.....	101,517	117,700	183,505	253,890	294,742
Page.....	1,819	1,550	1,780	3,430	2,400
Taylor.....	617	8,585	12,180	8,602	12,751
Van Buren.....	1,103	8,638	38,251	25,060	40,536
Wapello.....	180,911	227,111	279,073	380,285	273,962
Warren.....	13,825	23,532	24,736	17,013	15,583
Wayne.....	35,812	34,000	28,084	24,293	20,840
Total.....	1,150,224	1,364,433	1,430,841	1,728,067	1,265,150

The foregoing table shows the out-put of coal in the first district for the past five years. The year 1889 shows a decrease from the previous year of 133,811 tons. This decrease is largely to be attributed to the abandonment of the largest mine in Marion county, situated at Swan, and owned by the Whitebreast Fuel Co. Wapello county also shows a decrease of 107,059 tons. This decrease is largely to be attributed to the mild winter, as the operators were prepared to mine as much coal as they had in the previous year. Appanoose county shows a gain of 35,371 tons; this gain is made chiefly along the Chicago Milwaukee Railroad, at Mystic; a number of new mines having been opened up. Van Buren county shows an increased out-put of 14,590 tons over 1888; this increase was made by a new mine opened up by Kitchen & Bro., at Farmington, on the Chicago, Burlington & Kansas City Railroad; 2,924,123 tons of coal have been mined in the First District. 112,466 tons were mined for each fatal accident; 4,302 tons for each non-fatal accident; 31,107 tons for each casualty. The table shows the amount of money paid the miners and laborers in and about the mines. But there are other expenses such as props, caps, rails, ties, feed for mules and material used for repairs, which amounts to a large sum of money during the year.

There have been during the past two years twenty-six fatal and sixty-nine non-fatal accidents, a large percentage of which occurred in the miners' rooms from falls of slate and coal while mining down shots, both of which are very dangerous and cause a great number of accidents. A large portion of the time during the past year the mines run less than half time, consequently when the miners fired their shots when quitting work, they probably would not be in their working places for several days, and when they did go, they would find several of the props displaced by firing of the shots, and the draw slate down and ready to fall, all of which made the work more dangerous and caused more accidents to occur in some mines than if the mines had been running more regularly. Two of these accidents occurred at shafts while sinking; two others were in mines where only one man was employed at each mine. With one or two exceptions, the operators keep on hand a good supply of props and caps, and at quite a number of mines they are sent into the mine during the night time and put in the miners' rooms or placed conveniently near along the entries.

All of the measures prescribed by the mining law for the safety of those employed in mines, such as safety catches, covers on cages, escapements and their equipments, have and are being very fully complied with. There are a number of new mines that have not completed their escapements yet, but will do so at an early day. In these cases I have been compelled to call the miners out of the mines, the operators failing to comply with the law in regard to lawful escape-ways; two of these were at the Occidental mine, at Seymour, Wayne county. The ladders in escape shaft were perpendicular, and were ordered to be changed to comply with the law, which they refused to do. On February 26, 1889, the miners were again called out at this mine, on account of the traveling-way to the escape shaft being so much obstructed by falls of roof that it was impossible for the workmen to pass through; the stoppage was only a few days in each case. On the 28th day of September, 1888, I called out twelve miners that were working on the south side of Phillips Coal Co. No. 1 shaft, at Ottumwa, on the Chicago, Milwaukee & St. Paul Railroad, there being no lawful escape-way from that section of the mine, which was in a dangerous condition; the pillars were withdrawn and part of the mine abandoned.

There has been no accident reported in the First District for want of appliances, which are provided for in the mining law. Larger air shafts are being sunk and larger fans are being erected, which is having a marked improvement in the sanitary condition of the mines. Most of the mines in this district are shallow, and furnace

ventilation is not suitable for them. The fan is far superior as a ventilator, as it produces a steady current of air, and the quantity can generally be increased whenever needed. The cost of the latter is but little more than the former, and it yields a much greater efficiency for the fuel burnt. Some of the large mines are adopting a more advanced and systematic method, with a better system of mining in view. The old method of carrying the air through the mine in one continuous current is being abandoned by nearly all of the larger mines; moreover casts are being made and the system of splitting the air is being adopted, which is having a good effect in the ventilation of the mines.

There has been a large amount of prospecting done in this district during the last year, chiefly along the Chicago, Burlington & Quincy Railway, and the southwestern branch of the Chicago, Milwaukee & St. Paul Railroad. The Wapello Coal Co. have had two diamond drills at work for several months on Cedar Creek, west of Albia, in Monroe county. The Whitebreast Fuel Co. are running their steam drills and doing a large amount of prospecting in Marion county, on Chicago, Burlington & Quincy Railroad.

Cresswell & Co., of Ottumwa, have done considerable prospecting on the Chicago, Milwaukee & St. Paul Railroad, in Wapello and Appanoose counties, and are now sinking a shaft east of Blakesburg. The Soap Creek Coal Co. has prospected extensively in Monroe county and have bought a large tract of coal land, and are now opening up one of the largest mines in the First District. The Monroe Coal & Prospecting Co. have put down a prospect shaft, eight miles south of Albia, on a large tract of land which they own, and had found a good vein of coal, 5 to 6 feet thick and in all probability will develop it soon.

Chapter 54, section 2, laws of 1888, provides that each State Mine Inspector shall procure from the State Superintendent of Weights and Measures a full and complete set of standard balances, which was received November 29, 1888.

The following track scales have been tested: The scales at Phillips' No. 2 mine at Ottumwa, were tested and found correct May 6, 1889; the Hawkeye Coal Co. scales, at Ottumwa, were tested May 6, 1889, and found correct, the scales at Phillips' No. 1 mine, at Ottumwa, were tested May 6, 1889, and it took fifty pounds to move the beam. There has been some complaint from the miners about these scales, especially when loading open coal cars, as the scale platform is not long enough, and before the car is loaded the front trucks of the car are moved off the scale. They were loading box when tested, and I could not get an opportunity to test them when loading open cars.

The tail rope system of underground haulage is fast taking the place of mule power. There are twelve mines where this system is in practical operation and is proving a success, in every case being more economical and safer than mule power. There are quite a number of other mines in this district that will adopt this system of haulage at an early day.

NEW OPENINGS.

There have been twenty-nine new openings during the past two years, which ship their out-put by railroads. Twenty of these are in Appanoose county, and all are operated in the middle vein, which is very uniform and averages about two feet nine inches thick with a good slate roof over it and a fire clay bottom. There are two firms in this county that are using mining machinery: the Diamond Coal Co., and the Centerville Coal Co., both at Centerville. There were two new mines opened in Wapello county, three in Marion county, one in Van Buren, one in Jefferson, one in Monroe, and one in Lucas county, and all are operated in the lower vein, which is from four to six feet in thickness.

SHIPPING MINES ABANDONED.

The Whitebreast Fuel Co., No. 1 shaft, at Cleveland, Lucas county, on Chicago, Burlington & Quincy Railroad.

The Omaha Coal Co. shaft, at Zero, Lucas county, on Chicago, Burlington & Quincy Railroad.

The Whitebreast Fuel Co. No. 7 shaft, at Swan, Marion county, on Chicago, Burlington & Quincy Railroad.

The Wapello Coal Co., No. 3 shaft, at Kirkville, Wapello county, on the Ottumwa & Kirkville Railroad.

The Summerset Coal Co. shaft, at Summerset, Warren county, on the Chicago, Rock Island & Pacific Railroad.

The Jefferson County Coal Co. shaft, at Perlee, Jefferson county, on the Chicago, Rock Island & Pacific Railroad.

MINES BURNED.

The dump house of the Standard Mine, at Centerville, Appanoose county, on Chicago, Rock Island & Pacific Railroad, was burned August 12, 1887. Is rebuilt and in operation.

The Scandinavian Mine, at Centerville, Appanoose county, on the Keokuk & Western Railroad, was burned January 19, 1889; the buildings have been replaced and is in operation again.

LIST OF FATAL ACCIDENTS.

STATE OF IOWA, }
Lucas County. }

An inquisition holden at Lucas, in Lucas county, on the 30th day July, A. D. 1887, before T. P. Stanton, coroner of said county, upon the body of Harvery Cross, there lying dead, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths, do say that he came to his death by falling down the air shaft at Mine No. 3; no blame to be attached to anyone for the cause of the accident, but was caused through the neglect of the deceased.

In testimony whereof, the said jurors have hereunto set their hands, the day and year aforesaid.

J. GRIMM,
ISAAC PHILLIPS,
JONS VERNER.

Attest:
T. P. STANTON, *Coroner of Lucas County.*

STATE OF IOWA, }
Lucas County. }

An inquisition holden at Cleveland, Lucas county, Iowa, on the 18th day of August, A. D. 1887, before T. P. Stanton, coroner of said county, upon the body of John Jeremiah, there lying dead, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths, do say that he came to his death by a fall of stone while engaged in removing track in Mine No. 1. We consider the accident wholly unavoidable; no blame being attached to anyone.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

JOHN MASON,
THOMAS T. JONES,
PHILLIP J. PHILLIPS.

Attest:
T. P. STANTON, *Coroner of Lucas County.*

STATE OF IOWA, }
Lucas County. }

An inquisition holden at East Cleveland, in Lucas county, on the 18th day of November, A. D. 1887, before T. P. Stanton, coroner of said county, upon the body of Eddie Jefferson (colored), there lying dead, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths, do say that he came to his death by a fall of slate, caused by the neglect of his father, Moses Jefferson, deceased.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

J. R. EVANS,
JOHN MASON,
PHILLIP J. PHILLIPS.

Attest:
T. P. STANTON, *Coroner of Lucas County.*

STATE OF IOWA, }
Lucas County. }

An inquisition holden at Moses Jefferson's, in Whitebeast township, Lucas county, on the 17th day of November, A. D. 1887, before T. P. Stanton, coroner of said county, upon the body of Moses Jefferson, there lying dead, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths, do say that he came to his death by a fall of slate, while in the act of putting up some props, and that in our judgment no blame can be attached to anyone.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

J. W. VANTER,
C. L. GRAY,
JAS. P. JONES,

Attest:
T. P. STANTON, *Coroner of Lucas County.*

STATE OF IOWA, }
Wapello County. }

An inquisition holden at Laddsdale, in Wapello county, Iowa, on the 12th and 13th days of December, A. D. 1887, before E. H. Sage, coroner of said county, upon the body of Thomas Davis, there lying dead, by the jurors whose names are hereunto subscribed. The jurors, upon their oaths, do say that he came to his death by the accidental falling of slate on him on the evening of December 10, 1887, and that no blame be attached to anyone.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

W. H. STEPHENSON,
W. B. HINKLE,
WM. FAIR.

Attest:
E. H. SAGE, *Coroner of Wapello County.*

STATE OF IOWA, }
Monroe County. }

An inquisition, holden at Enterprise Coal Mine, in Monroe county, on the 24 day of January, 1888, before S. M. King, coroner of said county, upon the body of John Reece, there lying dead, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths, do say that, after having heard the evidence and examined circumstances, we do find that the deceased came to his death by accident, caused by a blast in an adjoining room bursting through the rib. The evidence showing the right side of the head to have been crushed in. The accident cannot be charged to mine owners or operators nor to carelessness, as said rib is of usual thickness.

S. S. SILKES,
T. S. MILLS,
ABNER H. LEACH.

Attest:
S. M. KING, Coroner of Monroe County.

STATE OF IOWA, }
Wapello County. }

An inquisition holden at Phillips' coal mine in Wapello county, on the 13th day of February, A. D. 1888, before S. A. Spilman, coroner of said county, upon the body of Daniel McNearney, there lying dead, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths do say, that the said Daniel McNearney came to his death on the morning of February 13, 1888, in Phillips' coal mine No 1, by being crushed by a fall of slate; said accident resulting from the room in which he worked being insecurely propped.

G. W. SOMMERVILLE,
J. R. LIVINGSTON,
C. F. TADLOCK.

Attest:
S. A. SPILMAN, Coroner of Wapello County.

STATE OF IOWA, }
Wapello County. }

An inquisition holden at Ottumwa, on the 14th of February, A. D. 1888, before S. A. Spilman, coroner of said county, upon the body of John Price, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths do say, that said John Price came to his death on the evening of February 8, 1888, as the result of an injury received on the afternoon of February 6th, by a fall of slate in the room of William Mitchell, where he was sitting at the time; and we consider the occurrence purely accidental, for which no person is responsible. Said accident occurred at Mine No. 1, of the Phillips Coal and Mining Company, Wapello county, Iowa.

J. J. BOWLES,
J. S. COOK,
LEWIS H. SUTTON.

Attest:
S. A. SPILMAN, Coroner of Wapello County.

MINE INSPECTOR'S OFFICE,
WAPELLO COUNTY, near OTTUMWA,
March 21, 1888.

Phillips Coal Company:

John Greiner, miner, age 58 years, single; date of accident, March 12, 1888, forenoon; in his room, struck by a pick through his cheek; quite serious; he died last Friday; but the coroner's verdict was that he died from the bursting of a blood vessel in the brain.

STATE OF IOWA, }
Wapello County. }

An inquisition holden at Ottumwa, on the 16th day of March, A. D. 1888, before S. A. Spilman, coroner of said county, upon the body of John Greiner, there lying dead. The said jurors upon their oaths do say that the said John Greiner came to his death March 16, 1888, by the rupture of a blood vessel in the brain.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

T. R. BICKLEY,
E. B. WARD,
J. H. R. SPILMAN.

Attest:
S. A. SPILMAN, Coroner of Wapello County.

STATE OF IOWA, }
Wapello County. }

An inquisition holden at No. 4 mine, in Richland township, Wapello county, Iowa, before S. A. Spilman, coroner of said county, upon the body of John Lancy, Jr., there lying dead. The said jurors, upon their oaths do say, that said John Lancy, Jr., came to his death in Mine No. 4, of the Wapello Coal Company, situated in Richland township, Wapello county, Iowa, about 11 o'clock A. M., April 20, 1888, by being crushed by a fall of slate while engaged in mining. We further find that there was carelessness on part of said John Lancy, Jr., and brother, in not taking down or propping up the slate which fell.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

L. F. McNAIR,
W. H. BENNETT,
E. M. JENKINSON.

Attest:
S. A. SPILMAN, Coroner of Wapello County.

STATE OF IOWA, }
Wapello County. }

An inquisition held at the mines of the Eldon Coal and Mining Company, September 1, 1888, before S. A. Spilman, Coroner of said county, upon the body of George Armentrout, there lying dead. The said jurors, upon their oaths do say, that the said George Armentrout came to his death on the 31st

day of August, about 3 o'clock p. m., by an accidental fall of slate, while working in the mine of the Eldon Coal and Mining Company, and that the accident was of his own carelessness in not propping his room securely.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

W. B. HINKLE,
GEO. W. SLEELY,
JAMES SHAFFER.

Attest:

S. A. SPILMAN, *Coroner of Wapello County.*

STATE OF IOWA, }
Wapello County. }

An inquisition holden at the residence of Phillip Harris, in Richland township, Wapello county, Iowa, on the 20th day of September, A. D. 1888, before S. A. Spilman, coroner of said county, upon the body of Phillip Harris, there lying dead. The jurors, upon their oaths do say, that said Phillip Harris came to his death in Mine No. 1, of the Wapello Coal Company, at Carver, near the hour of 6 p. m., on the 19th day of September, 1888, by reason of firing a shot in said mine, no blame being attached to any one; and we, the jury, believe it to have been purely accidental.

In testimony whereof, the said jurors have hereunto set their hands this 20th day of September, A. D. 1888.

ALBERT N. BARNES,
SAMUEL GUTHRIE,
A. A. JENKISON.

Attest:

S. A. SPILMAN, *Coroner of Wapello County.*

STATE OF IOWA, }
Wapello County. }

An inquisition holden at the residence of Martin Johnson, in Carver, Wapello county, Iowa, on the 27th day of September, A. D. 1888, before S. A. Spilman, coroner of said county, upon the body of Peter Stepp, there lying dead. The said jurors, upon their oaths do say, that the said Peter Stepp came to his death, in his room, in mine No. 1, of the Wapello Coal Company, at Carver, on September 26th, about quarter past 6 o'clock p. m., by a shot fired by himself.

In witness whereof, the said jurors have hereunto set their hands, the 27th day of September, A. D. 1888.

SAMUEL GUTHRIE,
WM. T. CURBIN,
THOS. GRIFFITH.

Attest:

S. A. SPILMAN, *Coroner of Wapello County.*

STATE OF IOWA, }
Wapello County. }

An inquisition holden at Laddsdale, Wapello county, Iowa, October 27, 1888, before S. A. Spilman, coroner of said county, upon the body of

Patrick O'Connor, there lying dead, by the jurors, whose name are hereunto subscribed. The said jurors, upon their oaths do say, that the said Patrick O'Connor came to his death between the hours of 7 and 12 o'clock, p. m., October 26, 1888, in the Laddsdale coal mines, by the discharge of a shot fired by himself.

In testimony whereof, the said jurors have hereunto set their hands, this 27th day of October, A. D. 1888.

JOHN C. BROOKS,
W. B. HINKLE,
L. A. BROOKS.

Attest:

S. A. SPILMAN, *Coroner of Wapello County.*

STATE OF IOWA, }
Marion County. }

An inquisition holden at Flagler, Marion county, Iowa, on the 30th day of October, A. D. 1888, before E. Whitlatch, coroner of said county, upon the body of Charles G. Ellis, there lying dead, by the jurors whose name are hereunto subscribed. We, the undersigned jurors, do find that Charles G. Ellis came to his death from a fracture of the skull, caused by a piece of coal from a blast in the mine, and that the death was accidental.

JAMES BUNTING,
JAS. TRUMAN,
WM. D. BENNETT.

Attest:

E. WHITLATCH, *Coroner of Marion County.*

STATE OF IOWA, }
Marion County. }

In the matter of the view of the dead body of J. Gazell, an employe of the Otley Coal Company, December 3d, the undersigned called upon by John McHon, Manager of the Otley Coal Company mines, to view and hold an inquest upon the body of J. Gazell, there lying dead at the bottom of the shaft of said mines.

D. H. HAZEN, J. P., *ex-officio* Coroner.

J. B. Vriezclaw, resident of Otley, Marion county, Iowa, merchant, being duly sworn, says: I have viewed the dead body of J. Gazell, as the same was exhibited to me in the shaft of the Otley Coal Company. I have also viewed the machinery by which the death of said Gazell was brought about, and I have heard the parties nearest him, at the time of his death, and from such views, as well as from what I heard, I am of the opinion that the deceased came to his death from carelessness on his part, and not from or by any unlawfulness.

J. B. VRIEZCLAW, *Juror.*

C. B. McComb, of Otley, Marion county, Iowa, being duly sworn, upon his oath, says: I was present with others and viewed the dead body of J. Gazell, in the shaft of the Otley Coal Company, near Otley, and the machinery believed to have been the instrument causing the death of said

Gazell, and from such views, I have no hesitation in expressing the opinion that deceased came to his death from carelessness on his part, and not from or by any unlawful means. The views to which I refer, occurred about 3 o'clock p.m., December 3, 1888.

C. B. McComb, *Juror*.

James Kirkwood, of Otley, Iowa, druggist, being duly sworn, says: I was with J. B. Vriezclaw, C. B. McComb and others, at about 3 o'clock p.m., December 3, 1888, when the dead body of J. Gazell was viewed by said parties, and from all appearances of said body, and circumstances under which the death occurred, as narrated by parties working with him, I am of the opinion that said death was not caused by any unlawful means.

JAMES KIRKWOOD, *Juror*.

STATE OF IOWA, }
Lucas County. }

An inquisition holden at Zero, Lucas county, Iowa, on the 11th day of December, A. D. 1888, before T. P. Stanton, coroner of said county, upon the body of Mathew Klaren, who was killed in the Zero mine, between 5 and 6 o'clock, there lying dead, by the jurors, whose names are hereunto subscribed. The said jurors, upon their oaths do say, that he came to his death by a premature explosion of a charge of powder, by his own hands; we also think the accident wholly unavoidable, and that no blame should be attached to anyone. In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

ISAAC ANDERSON,
GEORGE LUTY,
R. H. TABER.

Attest:

T. P. STANTON, *Coroner of Lucas County*.

STATE OF IOWA, }
Wapello county. }

An inquisition held at Phillips' Coal Mine, in Wapello county, Iowa, before S. A. Spilman, coroner of said county, upon the body of Frank Hunter, there lying dead. The said jurors, upon their oaths do say, that the said Frank Hunter came to his death about 5:30 p.m., January 2, 1889, in Mine No. 2, of the Phillips Coal and Mining Company, by the discharge of a shot fired by himself; and we further find that said Hunter was careless about returning to his room too soon after lighting his fuse.

In testimony whereof, the said jurors have hereunto set their hands this 1st day of January, A. D. 1889.

E. H. HOLLY,
S. BERKWELL,
J. S. COOP.

Attest:

S. A. SPILMAN, *Coroner of Wapello County*.

STATE OF IOWA, }
Marion County. }

An inquest holden at Hugh McKina's, in Marion county, on the 19th day of December, A. D. 1888, before E. Whitlatch, coroner of said county, upon the body of Peter Mengauze, there lying dead, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths, do say that the said Peter Mengauze came to his death by an unavoidable accident of a rock falling on him while at work in a coal mine.

In testimony whereof, the said jurors have hereunto set their hands this 19th day of December, A. D., 1888.

GEO. CLARK,
C. W. POPE,
JOHN MURRAY.

Attest:

E. WHITLATCH, *Coroner of Marion County*.

STATE OF IOWA, }
Wapello county. }

An inquisition holden at Phillips' Coal Mine, in Wapello county, Iowa, on the 29th day of December, 1888, before S. A. Spilman, coroner of said county, upon the body of Charles Johnson, there lying dead. The said jurors, upon their oaths do say, that the said Charles Johnson came to his death near the hour of 10 o'clock, A. M., December 29, 1888, in Mine No. 2, of the Phillips Coal Company, by being run over by a coal car, while acting in the capacity of a driver; and we find that the said Johnson was careless in not using sprags while going down the grade; and it being in the evidence that there is a dangerous projection on the rib near where the accident occurred, and we recommend that the Mine Inspector give it his attention.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

J. S. COOP,
E. A. PITTS,
J. H. SPILMAN.

Attest:

S. A. SPILMAN, *Coroner of Wapello County*.

STATE OF IOWA, }
Lucas County. }

An inquisition holden at John Macy's, Lincoln township, Lucas county, Iowa, on the 9th day of January, A. D. 1889, before T. P. Stanton, coroner of said county, upon the body of John Macy, there lying dead, by the jurors whose names are hereunto subscribed the day and year aforesaid. The said jurors, upon their oaths do say, that he came to his death by a fall of slate.

T. C. TERRILE,
W. B. FOULKES,
G. SMITH.

Attest:

T. P. STANTON, *Coroner of Lucas County*.

STATE OF IOWA, }
Monroe County. }

An inquisition holden at Foster, Monroe county, on the 14th day of January, 1889, before S. M. King, coroner of said county, upon the body of Rollin Williams, there lying dead, by the jurors whose names are hereunto subscribed. The jurors, upon their oaths do say, we do find that the deceased came to his death by gross neglect on the part of the superintendent; by improper precaution, by putting of a shot at that depth with squibs; second, for not checking the speed of the engine in time to pass safely through the narrow space at the top, thereby causing the said Rollin Williams to be knocked out of the bucket, by being jerked against the timber with his head and shoulders, and falling to the bottom of the shaft, at a depth of 163 feet, causing instant death; and we do further recommend that the said Ira Phillips be held for justice court investigation.

NATHAN G. WILSON,
JAS. R. T. WHITE,
DANIEL POLLARD.

Attest:

S. M. KING, *Coroner of Monroe County.*

STATE OF IOWA, }
Wapello County. }

An inquisition holden at the office of Workman & Bayless, Ottumwa, Iowa, February 4, 1889, before S. A. Spilman, coroner of said county, upon the body of Patrick Graham, there lying dead, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths do say, that the said Patrick Graham came to his death on the 4th day of February, A. D. 1889, from the effect of an injury received in the main east entry of Phillips' Mine No. 2, by a fall of slate on the 25th day of January, A. D. 1889.

E. H. HOLLY,
his
M. C. x CARLOS,
mark
J. C. SLAUGHTER.

Attest:

S. A. SPILMAN, *Coroner of Wapello County.*

STATE OF IOWA, }
Wapello County. }

An inquisition holden at Phillips' Mine No. 2, May 24, 1889, before S. A. Spilman, coroner of said county, upon the body of Archibald Black, there lying, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths do say, that the said Archibald Black came to his death on the 24th day of May, A. D. 1889, as the result of an injury received from a fall of slate while working in said mine on the 16th day of May, 1889. No blame is attached to anyone.

In testimony whereof, the said jurors have hereunto set their hands this 24th day of May, A. D. 1889.

H. M. GALEY,
J. T. MOREHOUSE,
J. C. BILLS,

Attest:

S. A. SPILMAN, *Coroner of Wapello County.*

STATE OF IOWA, }
Wapello County. }

An inquisition holden at the residence of Dan McKinley, in Center township, Wapello county, Iowa, before S. A. Spilman, coroner of said county, upon the body of Dan McKinley, there lying dead, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths do say, that said Dan McKinley came to his death on the morning of May 27, 1889, at Phillips' Mine No. 1, by an accidental fall of slate.

In testimony whereof the said jurors have hereunto set their hands the day and year aforesaid.

T. W. B. KIRKPATRICK,
ELYE DIXON,
GEO. W. SOMMERVILLE.

Attest:

S. A. SPILMAN, *Coroner of Wapello County.*

STATE OF IOWA, }
Monroe county. }

At an inquisition holden at Hickory Grove, in said county, on the 28th day of June, 1889, before Sylvester King, coroner of said county, upon the body of Samuel Hawthorne, there lying dead, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths, do say: We do find that said deceased came to his death by falling under the car, and there is no fault or blame to any person. And we further find that he did not come to his death feloniously.

In testimony whereof, the said jurors have hereunto set their hands this 28th day of June, 1889.

J. L. ANDERSON,
J. E. CATHEVITT,
L. B. CARLISLE.

Attest:

SYLVESTER M. KING, *Coroner of Monroe County.*

NON-FATAL ACCIDENTS, FIRST DISTRICT, ENDING JUNE 30, 1888.

DATE.	NAME AND RESIDENCE.	FIRM.	CAUSE OF ACCIDENTS, ETC.
1887.			
July	19 George Evans, Kirkville.	Wapello Coal Company.	Injured by going back to shot.
July	21 John Williams, Kirkville.	Wapello Coal Company.	Injured by coal falling on his back and legs.
September	17 William Soools, Brazil.	Tipton Coal Company.	Injured by a black bat, a rock falling on his back.
September	25 Gilmore Bugas, Kirkville.	Wapello Coal Company.	Hurt by coal falling on him, breaking his leg.
October	10 William Kelly, Albia.	Iowa & Wisconsin Coal Company.	Was hurt by fall of slate.
October	11 Robert Foulkes, Kirkville.	Wapello Coal Company.	Collar bone broken by falling down with keg of powder.
October	12 Frank L. Edwards, Kirkville.	Wapello Coal Company.	Scalp wound by falling slate in his room.
October	15 Joe Box, Kirkville.	Wapello Coal Company.	Left arm broken by falling of coal.
October	15 John Lloyd, Kirkville.	Wapello Coal Company.	Injured by coal falling on him.
November	8 Samuel Deemer, Confidence.	Powell's Mine.	Was hurt by falling down shaft; external bruises.
November	5 William Nail, Flagler.	Flagler Mine No. 3.	Caught between car and roof, dislocating his wrist.
November	8 John Norris, Flagler.	Flagler Mine No. 3.	Rib broken; was kicked by a mule.
November	14 Joseph Lee, Albia.	Enterprise Mine.	Hurt by coal falling on him, cutting his forehead.
November	9 Brennan Higgins, Ottumwa.	Hawkeye Mine.	Was burnt by blown out shot, on hands and face.
November	9 Austin Bates, Ottumwa.	Hawkeye Mine.	Was burnt by blown out shot, on hands and face.
November	9 J. S. Lloyd, Ottumwa.	Hawkeye Mine.	Was burnt by blown out shot, on hands and face.
November	9 Jas. H. Davis, Ottumwa.	Hawkeye Mine.	Was burnt by blown out shot, on hands and face.
November	15 Jas. D. Barnes, Ottumwa.	Hawkeye Mine.	Burnt about hands and face; powder explosion.
November	15 Victor Fosburg, Ottumwa.	Hawkeye Mine.	Burnt about hands and face; explosion, dust and powder.
November	15 Matthew Meyers, Ottumwa.	Hawkeye Mine.	Burned by explosion of powder.
November	15 John Blatz, Ottumwa.	Hawkeye Mine.	Burned by explosion of powder.
November	18 Peter Hoys, New Market.	Low Valley Mine.	Hurt by falling slate; right leg broken.
December	15 J. E. Wilson, Zero.	Iowa & Nebraska Mine.	Leg broken by fall of slate.
December	27 J. H. Graham, Albia.	Iowa & Wisconsin Mine.	Chest bone fractured by fall of slate.
1888.			
January	2 Henry Smith, Chesholm.	Chesholm Mine.	Burned by an explosion, supposed to be gas.
January	5 John Smith, Chesholm.	Chesholm Mine.	Burned by an explosion, supposed to be gas.
January	5 Joe Burden, Chesholm.	Chesholm Mine.	Hand broken by falling coal.
January	9 Charles Jeannon, Cleveland.	Whitebreast Mine No. 2.	Injured by descending cage; cut on face.
January	10 George Farling, Ottumwa.	Phillips Mine No. 2.	Injured by falling slate.
February	9 Scott Chambers, Cleveland.	Whitebreast Fuel Company.	Injured about ribs; caught between cars.
February	9 Edward Robinson, Ottumwa.	Phillips's Mine No. 2.	Foot bruised by fall of slate in room.
February	3 James M. Blackely, Ottumwa.	Phillips's Mine No. 2.	Injured by falling coal in room.
1889.			
February	2 Fred Peterson, Ottumwa.	Phillips's Mine No. 1.	Thumb broken by fall of coal.
February	13 James Kirk, Percy.	Summit Mine.	Leg broken by pit car.
March	10 James Bush, Ottumwa.	Phillips Mine.	Struck by wedge; face cut.
April	20 L. D. Crawford, Kirkville.	Wapello Coal Company, Mine No. 1.	Injured by fall of slate in his room.
April	24 John Griffiths, Kirkville.	Wapello Coal Company, Mine No. 1.	Injured by falling off an empty car.
April	25 H. Hurd, Albia.	Iowa & Wisconsin Mine.	Cut about the face; premature discharge of blast.
June	22 Thomas Griffiths, Flagler.	Galton Mine No. 5.	Injured by falling soapstone.
June	22 Davie Jones, Kirkville.	Wapello Coal Company.	Right leg broken by fall of coal.
June	28 John Hall, Ottumwa.	Phillips's Mine No. 2.	Three fingers mashed by fall of slate.
October	8 Daniel Dainly, Jr., Flagler.	Whitebreast Fuel Company No. 11.	Hand crushed by fall of slate.
September	12 R. Codner, Albia.	Iowa & Wisconsin Mine.	Injured by fall of slate.
September	17 William Manford, Zero.	Iowa & Nebraska Coal Company.	Hurt while caging a car.
October	22 R. F. Chapman, Flagler.	Whitebreast Fuel Company No. 2.	Injured by fall of slate.
October	24 Mary Parker, Cleveland.	Kirkpatrick Mine.	Injured by fall of slate.
November	23 M. T. Dougherty, Ottumwa.	Whitebreast Fuel Company.	Leg broken by fall of slate.
November	12 Jake Welch, Kirkville.	Whitebreast Fuel Company.	Foot mashed by fall of coal.
December	10 James Chilton, Cleveland.	Wapello Coal Company.	Run over by car; arm fractured.
December	21 E. O. Norris, Kirkville.	Wapello Coal Company.	Injured by falling slate.
December	24 John Lancy, Kirkville.	Wapello Coal Company.	Leg broken by falling slate.
1890.			
January	21 George Hoadley, Albia.	Enterprise Mine.	Injured by falling slate.
January	1 William Starburt, Albia.	Enterprise Mine.	Injured by coal car.
February	1 William Phillips, Kirkville.	Wapello Coal Company.	Kicked on nose by a mule.
February	2 Evan Thomas, Kirkville.	Wapello Coal Company.	Kicked on thigh by a mule.
February	16 L. Cox, Albia.	Iowa & Wisconsin Mine.	Injured by fall of slate.
February	21 H. Miller, Pooder.	Soap Creek Coal Company.	Injured by falling slate.
February	23 R. E. Jones, Kirkville.	Wapello Coal Company.	Injured by falling slate.
March	5 James Marker, Mystic.	Mystic Mine.	Leg broken by falling slate.
March	3 William Sheppard, Mystic.	Mystic Mine.	Leg broken by fall of coal.
April	8 P. F. Wilson, Kirkville.	Wapello Coal Company.	Car trimmer; cut on face by piece of coal.
April	30 George Nixon, Albia.	Iowa & Wisconsin Mine.	Kicked on face by mule.
April	22 John Stocker, Coalfield.	Pleasant Valley Mine.	Leg and ankle broken while sinking escape shaft.
April	22 John James, Kirkville.	Wapello Coal Company.	Three ribs broken, hip and thigh bruised; falling slate.
April	27 Robert Pace, Flagler.	Whitebreast Fuel Company.	Left femur fractured by falling slate.
April	27 Anthony O'Holloran, Kirkville.	Wapello Coal Company.	Leg bruised by fall of slate.
April	27 Jeff Pies, Kirkville.	Wapello Coal Company.	Bruised on knee by falling coal.
May	29 Edward Myers, Centerville.	Centerville Coal Company.	Leg broken by fall of slate.
May	13 Richard Williams, Flagler.	Whitebreast Fuel Company.	Injured by falling coal.

RECAPITULATION OF FATAL CASUALTIES FOR TWO YEARS, ENDING JUNE 30, 1889.

By falling down shaft.....	3
Falling slate or stone.....	13
By shot through pillar.....	1
By pick.....	1
By premature discharge of blasts.....	6
By pit cars.....	2
Total.....	36

RECAPITULATION OF NON-FATAL CASUALTIES FOR TWO YEARS, ENDING JUNE 30, 1889.

By falling slate.....	27
By falling coal.....	13
By falling down with keg of powder.....	1
Kicked by mules.....	4
Falling of mule.....	1
By descending cage.....	2
Falling down shaft.....	1
By pit car.....	5
By explosion of powder and dust.....	10
While sinking shaft.....	1
Premature discharge of blasts.....	3
Injured by wedge.....	1
Total.....	69

NAMES OF MINES AND LOCATION.

APPANOOSE COUNTY.

NAME OF COMPANY OR FIRM.	Name of mine.	Kind of mine.	POST-OFFICE.
Diamond Mine	No. 1 Shaft		Centerville.
Mystic Coal Co	No. 1 Slope		Mystic.
Lone Star Coal Co	No. 1 Drift		Mystic.
Charles Knight	No. 1 Shaft		Plano.
Saddon & Bro.	No. 1 Slope		Mystic.
Black Diamond Coal Co.	No. 1 Drift		Mystic.
Thompson Mine	No. 1 Shaft		Plano.
National Coal Co	No. 1 Shaft		Centerville.
E. J. Richardson	No. 1 Shaft		Centerville.
Lane Coal Co.	No. 1 Shaft		Centerville.
Phoenix Coal Co	No. 1 Slope		Brazil.
Thos. Phillips & Co	No. 1 Slope		Brazil.
Lodwick & Bro	No. 1 Slope		Mystic.
Lodwick & Bro	No. 2 Drift		Mystic.
Henrietta Coal Co	No. 1 Drift		Mystic.
Milburn Coal Co.	No. 1 Drift		Mystic.
N. H. Nash	No. 1 Shaft		Walnut City.
Clark & Sons	No. 1 Shaft		Mystic.
G. W. McCloud	No. 1 Drift		Walnut City.
Brazil Coal Co.	No. 1 Slope		Brazil.
Eldon Coal Co	No. 2 Shaft		Ottumwa.
Fenton & Bros	No. 1 Shaft		Milledgeville.
Appanoose Coal Co	No. 1 Shaft		Cincinnati.
Numa Coal Co.	No. 1 Shaft		Numa.
Standard Coal Co.	No. 1 Shaft		Centerville.
Philby Coal Co	No. 1 Slope		Brazil.
Walden Mine	No. 1 Shaft		Centerville.
Scandinavian Coal Co	No. 1 Shaft		Centerville.
Cincinnati Coal Co.	No. 1 Shaft		Cincinnati.
B. F. Silknetter	No. 1 Slope		Brazil.
Lone Star Mine	No. 1 Shaft		Centerville.
Thistle Coal Co	No. 1 Shaft		Cincinnati.
Enterprise Coal Co	No. 1 Slope		Centerville.
Enterprise Coal Co	No. 2 Shaft		Centerville.
B. B. Parker	No. 1 Shaft		Livingstone.
Harris & Walh	No. 1 Slope		Moravia.
R. Campbell	No. 1 Slope		Brazil.
B. F. Silknetter	No. 2 Slope		Brazil.
B. F. Silknetter	No. 3 Slope		Brazil.
Anchor Coal Co.	No. 1 Shaft		Centerville.
Gladstone Coal Co	No. 1 Shaft		Jerome.
Wm. Baker	No. 1 Shaft		Centerville.
Hawkeye Co-operative Coal Co.	No. 1 Slope		Brazil.
Centerville Coal Co.	No. 1 Shaft		Centerville.

NAMES OF MINES—CONTINUED.

ADAMS COUNTY.

NAME OF COMPANY OR FIRM.	Name of mine.	Kind of mine.	POST-OFFICE.
R. Briscoe	No. 1 Shaft ..	Briscoe.	
M. Church Mine	No. 1 Shaft ..	Carbon.	
Lippert Mine	No. 1 Shaft ..	Eureka.	
Bennett Mine	No. 1 Shaft ..	Carbon.	
J. Hartshorn	No. 1 Slope ..	Eureka.	
Carbon Coal Co.	No. 1 Shaft ..	Carbon.	
S. Powell	No. 1 Shaft ..	Eureka.	
John Wilds	No. 1 Shaft ..	Carbon.	
Jones & Bro.	No. 1 Shaft ..	Carbon.	
Rimbley Mine	No. 1 Shaft ..	Carbon.	
Co-operative Coal Co.	No. 1 Shaft ..	Carbon.	
Hazel Dell Mining Co.	No. 1 Shaft ..	Carbon.	
Wm. Hartshorn	No. 1 Slope ..	Eureka.	
Neil Mine	No. 1 Shaft ..	Carbon.	

CASS COUNTY.

Welch Mine	No. 1 Shaft ..	Briscoe.	
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DAVIS COUNTY.

Ely Dye	No. 1 Slope ..	Eldon.	
A. T. Dotson	No. 1 Drift ..	Eldon.	
Brown Cannel Coal Co.	No. 1 Drift ..	Floris.	
Quigley & Smith	No. 1 Drift ..	Floris.	

JEFFERSON COUNTY.

Lick Creek Coal Co.	No. 1 Shaft ..	Libertyville.	
Crawford's Mine	No. 1 Shaft ..	Fairfield.	
Chandler Mine	No. 1 Slope ..	Perlee.	
A. J. Zimmerman	No. 1 Slope ..	Libertyville.	
John McGregor	No. 1 Shaft ..	Lockridge.	
Jefferson Coal Co.	No. 1 Shaft ..	Perlee.	
John Cloke	No. 1 Shaft ..	County Line.	
Thomas Russell	No. 1 Shaft ..	Fairfield.	

LUCAS COUNTY.

Whitebreast No. 2	No. 2 Shaft ..	Cleveland.	
Whitebreast	No. 3 Shaft ..	Cleveland.	
Iowa & Nebraska	No. 1 Shaft ..	Zero.	
Williamson & Bros.	No. 1 Shaft ..	Chariton.	
William Griffin	No. 1 Slope ..	Chariton.	
S. H. Smith	No. 1 Slope ..	Chariton.	
James Hall	No. 1 Slope ..	Chariton.	
Hegg & Bro.	No. 1 Slope ..	Chariton.	
Vanaway & Bro.	No. 1 Slope ..	Chariton.	
John Wilson	No. 1 Slope ..	Chariton.	

NAMES OF MINES—CONTINUED.

MONROE COUNTY.

NAME OF COMPANY OR FIRM.	Name of mine.	Kind of mine.	POST-OFFICE.
Charles Akers	No. 1 Shaft ..	Fredric.	
Scott Appleman	No. 1 Shaft ..	Avery.	
Moyle & Kridelbaugh	No. 1 Slope ..	Avery.	
Chisholm Coal Co.	No. 1 Shaft ..	Chisholm.	
Monroe Prospecting Co.	No. 1 Shaft ..	Albia.	
Iowa & Wisconsin Coal Co.	No. 1 Shaft ..	Albia.	
Smokey Hollow Mine	No. 1 Slope ..	Avery.	
Hickory Mine	No. 1 Shaft ..	Hickory.	
Omaha Coal Co.	No. 1 Shaft ..	Albia.	
Enterprise Coal Co.	No. 1 Shaft ..	Albia.	
Pleasant Valley Coal Co.	No. 1 Slope ..	Coalfield.	
Soap Creek Coal Co.	No. 1 Shaft ..	Foster.	
Fredric Coal Co.	No. 1 Shaft ..	Fredric.	
Davidson & Stocker	No. 1 Slope ..	Coalfield.	

MARION COUNTY.

Whitebreast Fuel Co.	No. 11 Shaft ..	Flagler.	
Black Diamond Coal Co.	No. 1 Slope ..	Dunreath.	
Prairie Creek Coal Co.	No. 1 Drift ..	Dunreath.	
Thompson & Bros.	No. 1 Slope ..	Pella.	
H. Brecht	No. 1 Shaft ..	Pella.	
Wm. Lewis	No. 1 Slope ..	Knoxville.	
S. M. Ruetman	No. 1 Slope ..	Knoxville.	
Wm. Gamble	No. 1 Shaft ..	Knoxville.	
Marion County Coal Co.	No. 1 Shaft ..	Otley.	
Marion County Coal Co.	No. 2 Slope ..	Otley.	
G. Marshall	No. 1 Slope ..	Otley.	
Grub & Walsh	No. 1 Drift ..	Monroe.	
Atlas Coal Co.	No. 1 Shaft ..	Hamilton.	
H. Boudinot	No. 1 Slope ..	Hamilton.	
J. A. Boudinot	No. 1 Slope ..	Hamilton.	
John Youser	No. 1 Slope ..	Marysville.	
David Fry	No. 1 Slope ..	Marysville.	
Z. A. Smith	No. 1 Slope ..	Pella.	
Patrick Corey	No. 1 Slope ..	Pella.	
Samuel Wells	No. 1 Slope ..	Pella.	
Marion Conery	No. 1 Drift ..	Knoxville.	
Jacob Bingham	No. 1 Drift ..	Knoxville.	
Samuel Ream	No. 1 Drift ..	Tracy.	
William Holloway	No. 1 Drift ..	Tracy.	
Samuel States	No. 1 Drift ..	Attica.	
John Martin	No. 1 Drift ..	Knoxville.	
Samuel Whitlatch	No. 1 Drift ..	Attica.	
David Price	No. 1 Drift ..	Attica.	
Lewis Whitlatch	No. 1 Drift ..	Attica.	
Collins & Co.	No. 1 Shaft ..	Knoxville.	
John Thomas	No. 1 Shaft ..	Swan.	
White Smoke Coal Co.	No. 1 Slope ..	Perey.	
William Franklin	No. 1 Slope ..	Flagler.	
Oak Hill Coal Co.	No. 1 Drift ..	Flagler.	

NAMES OF MINES—CONTINUED.

PAGE COUNTY.

NAME OF COMPANY OR FIRM.	Name of mine.	Kind of mine.	POST-OFFICE.
C. G. Fulk	No. 1	Shaft ..	Shombaugh.
Woodruff & Co.	No. 1	Shaft ..	Shombaugh.
William McLean	No. 1	Shaft ..	Shombaugh.
Pearson & Bros	No. 1	Shaft ..	Clarinda.
Samuel Walker	No. 1	Slope ..	Clarinda.

TAYLOR COUNTY.

Ben Anderson	No. 1	Shaft ..	New Market.
Ben Anderson	No. 2	Shaft ..	New Market.
Ben Anderson	No. 3	Shaft ..	New Market.
H. C. Mackley	No. 1	Shaft ..	Villisca.
H. C. Mackley	No. 2	Shaft ..	Villisca.
Isaac Aukney	No. 1	Shaft ..	Villisca.
Nathan Wilcox	No. 1	Shaft ..	Villisca.
William A. Tilley	No. 1	Shaft ..	New Market.
W. H. Bean	No. 1	Shaft ..	New Market.
Burnside & Conlough ..	No. 1	Shaft ..	Villisca.
Campbell & Sons	No. 1	Shaft ..	New Market.
John Bomar	No. 1	Shaft ..	Villisca.

VAN BUREN COUNTY.

Farmington Coal Co	No. 1	Shaft ..	Farmington.
Carson & Walker	No. 1	Slope ..	Douds.
George Finlin	No. 1	Slope ..	Douds.
A. C. Boyer	No. 1	Slope ..	Bentonsport.
David Cox	No. 1	Slope ..	Hillsboro.
E. S. Green	No. 1	Shaft ..	Douds.
Kitchen & Bros	No. 1	Slope ..	Farmington.
Stoddard & Turner	No. 1	Shaft ..	Farmington.

NAMES OF MINES—CONTINUED.

WAPELLO COUNTY.

NAME OF COMPANY OR FIRM.	Name of mine.	Kind of mine.	POST-OFFICE.
Wapello Coal Co.	No. 1	Slope ..	Kirkville.
Wapello Coal Co.	No. 3	Shaft ..	Kirkville.
Wapello Coal Co.	No. 4	Slope ..	Kirkville.
Wapello Coal Co.	No. 5	Slope ..	Kirkville.
Eldon Coal Co.	No. 1	Shaft ..	Ottumwa.
Hawkeye Coal Co.	No. 1	Shaft ..	Ottumwa.
M. T. Daugherty	No. 1	Shaft ..	Ottumwa.
William Walton	No. 1	Drift ..	Eddyville.
Baker & Adams	No. 1	Shaft ..	Ottumwa.
John Vanderpool	No. 1	Shaft ..	Ottumwa.
John Moore	No. 1	Shaft ..	Ottumwa.
Michael Quirk	No. 1	Shaft ..	Ottumwa.
Daniel Cummings	No. 1	Shaft ..	Eldon.
William Nichols	No. 1	Shaft ..	Eldon.
Rolla Goodin	No. 1	Shaft ..	Ottumwa.
Daniels & Graham	No. 1	Shaft ..	Ottumwa.
Hughes & Cruikshanks ..	No. 1	Shaft ..	Ottumwa.
Phillips Coal Co.	No. 1	Shaft ..	Ottumwa.
Phillips Coal Co.	No. 2	Shaft ..	Ottumwa.
Sugar Creek Coal Co.	No. 1	Shaft ..	Ottumwa.
Dixon & Bro.	No. 1	Shaft ..	Agency.
William Bennett	No. 1	Shaft ..	Kirkville.
E. E. Godley	No. 1	Drift ..	Eldon.
Jacob Ream	No. 1	Shaft ..	Ottumwa.
Myers & Bro.	No. 1	Shaft ..	Ottumwa.
Lumsden & Bro.	No. 1	Shaft ..	Summerset.
William Bennum	No. 1	Shaft ..	Summerset.
D. K. Jones	No. 1	Shaft ..	Summerset.
O. M. Simmons	No. 1	Shaft ..	Summerset.
Tenlam Wareford	No. 1	Shaft ..	Summerset.
Ruben Runnels	No. 1	Drift ..	Summerset.
J. P. Cotman	No. 1	Slope ..	Norwalk.
H. Miller & Bro.	No. 1	Drift ..	Lacona.
Oxenrider & Miller	No. 1	Slope ..	Lacona.
Isaac Snell	No. 1	Drift ..	Lacona.
Huston Fogle	No. 1	Slope ..	Lacona.
N. D. Bales	No. 1	Shaft ..	Milo.
H. H. Webster	No. 1	Drift ..	Milo.
S. P. Byant	No. 1	Shaft ..	Milo.
Eugene Richmond	No. 1	Drift ..	Milo.
Brouh & Long	No. 1	Shaft ..	Milo.
Andy Connors	No. 1	Drift ..	Milo.

NAMES OF MINES—CONTINUED.

WAYNE COUNTY.

NAMES OF COMPANY OR FIRM.	Name of mine.	Kind of mine.	POST-OFFICE.
Occidental Coal Co.....	No. 1	Shaft ..	Seymour.
Lewis Fry & Co.....	No. 1	Shaft ..	Confidence.
B. F. Burns	No. 1	Shaft ..	Confidence.
Thomas Burland	No. 1	Shaft ..	Howard.
Batey & Jones	No. 1	Shaft ..	Confidence.
R. M. Davis.....	No. 1	Slope ..	Confidence.
Ferris & Bro.....	No. 1	Slope ..	Confidence.
Blevins & Dexter	No. 1	Slope ..	Confidence.
Attwell & Hixenbaugh	No. 1	Shaft ..	Confidence.

NAMES AND DESCRIPTION OF MINES IN DISTRICT No. 1.

APPANOOSE COUNTY.

DIAMOND.

Is a shaft mine, 137 feet deep; is owned and operated by Dargavel & Oliver; location, Centerville, on the Chicago, Rock Island & Pacific Railroad; is worked on the double entry system, and ventilated by fan; steam power is used for hoisting the coal; vein is two feet nine inches thick; the Legg and Harrison's machines are in use at this mine; eighty-six workmen are employed.

W. M. OLIVER,

President.

ALEXANDER DARGAVEL,

Superintendent.

MYSTIC.

Is a slope mine, owned and operated by William Orr & Bro.; location, Mystic, on the Chicago, Milwaukee & St. Paul Railroad; is worked both on the double entry and longwall system, and ventilated by furnace; vein of coal, two feet nine inches thick; mule power; sixty miners employed.

WILLIAM ORR,

Superintendent.

LONE STAR.

Is a new drift mine, located at Mystic, on the Chicago, Milwaukee & St. Paul Railroad; vein of coal, two feet nine inches thick; the product of this mine will be hauled with teams and shipped on above named railroad.

JOHN SEDDON,

Superintendent.

KNIGHT.

Is a shaft mine, fifty feet deep; located at Plano; is worked on the room and pillar system; vein of coal, two feet nine inches thick, and sold at local sales; horse power is used for hoisting the coal; ventilated by grate.

CHARLES KNIGHT,

Superintendent.

SEDDON.

Is a slope mine, located at Mystic, on the Chicago, Milwaukee & St. Paul Railroad; is owned and operated by James Seddon & Bro.; is worked on the double entry system; ventilated by furnace; vein of coal, two feet nine inches thick; mule power is used to bring the coal to the surface.

JAMES SEDDON,
Superintendent.

BLACK DIAMOND.

Is a drift mine; location, Mystic; is operated by the Black Diamond Block Coal Co.; ventilation, natural; thickness of vein, two feet nine inches; the out-put of this mine is hauled with teams and shipped on the Chicago, Milwaukee & St. Paul Railroad; ten miners employed.

W. M. AUGHTON,
Superintendent.

THOMPSON.

Is a shaft mine, fifty feet deep; located three miles southwest of Plano; is worked on the single entry system, with rooms and pillars; horse power is used for hoisting; thickness of vein, two feet nine inches; sold at local sales; ventilated by grate.

JOHN HOWSER,
Superintendent.

NATIONAL.

Is a shaft mine, 160 feet deep; located at Centerville, on the Chicago, Rock Island & Pacific Railroad; is operated by the National Coal and Mining Co.; is worked on the longwall system; ventilation by steam jet; steam power is used for hoisting the coal; thickness of vein, two feet eight inches; fifteen miners employed.

A. W. HOLDEN,
Superintendent.

RICHARDSON.

Is owned and operated by E. J. Richardson; located at Centerville; shaft is sixty feet deep, and is operated for local sales; vein, three feet thick; worked on the single entry system; ventilated by grate; ten miners employed.

LANE.

Is a shaft mine, seventy feet deep; located at Hickory Hill, on the Keokuk & Western Railroad; is operated by the Lane Coal Co.; horse power is used for hoisting the coal; is a new mine; ventilated by furnace; thickness of vein, two feet ten inches; worked on the double entry system.

L. S. LANE,
Superintendent.

PHENIX.

Located at Brazil, on the Keokuk & Western Railroad; is owned and operated by the Phoenix Coal Co.; mule power is used to bring the coal to the surface; plan of working mine, double entries; ventilated by furnace; thickness of vein, three feet.

JOSEPH TURNER,
Superintendent.

Thomas Phillips is opening up a new slope mine at Brazil, on the Keokuk & Western Railroad; will have railroad facilities for shipping the product of the mine; thickness of vein, three feet; mule power will be used to bring the coal to the surface; ventilated by furnace.

HAWKEYE.

Is a slope mine, located at Brazil, on the Keokuk & Western Railroad; is owned and operated by the Hawkeye Co-operative Coal Co., and worked on the double entry system; ventilated by furnace; thickness of vein, three feet; mule power is used to bring the coal to surface.

JOHN KELLY,
Superintendent.

LODWICK, No. 1.

Is a new slope mine, just being opened up by Lodwick & Bros., at Mystic; vein of coal is two feet six inches thick; mule power will be used to bring the coal to the surface.

LODWICK, No. 2.

Is a drift mine, and belongs to the same company, and is managed by the same officers; is located at Mystic; thickness of vein, two feet six inches. This company expects to have facilities for shipping coal on the Chicago, Milwaukee & St. Paul Railroad.

HENRIETTA.

Is a new drift mine, operated by the Henrietta Coal Co.; location, Mystic; ventilation, natural; the product of this mine is hauled to Mystic with teams and shipped on the Chicago, Milwaukee & St. Paul Railroad; thickness of vein, two feet nine inches; eight miners employed.

WILLIAM WILLIAMS,
Superintendent.

MILBURN.

Is a drift mine, located at Mystic; ventilation, natural; thickness of vein, two feet nine inches; worked on the longwall system; the out-put of this mine is hauled to Mystic with teams and shipped on Chicago, Milwaukee & St. Paul Railroad; eight miners employed.

A. L. MILBURN,
Superintendent.

NASH.

Is owned and operated by N. H. Nash; location, Walnut City; shaft is twenty-two feet deep; thickness of vein, two feet ten inches; sold at local sales; horse is used to bring the coal to the surface; ventilated by grate; four miners employed.

CLARK.

Is a shaft mine, operated by Alexander Clark & Sons; location, two miles east of Mystic, on Chicago, Milwaukee & St. Paul Railroad; depth, seventy feet; thickness of vein, two feet ten inches; is worked on the double entry system; horse is used to bring the coal to the surface.

ALEXANDER CLARK,
Superintendent.

McCLOUD.

G. W. McCloud operates a drift mine near Walnut City, for local trade in the winter season; vein, two feet nine inches thick; three miners employed.

BRAZIL.

Is a slope mine, owned and operated by the Brazil Coal Co.; is worked on the longwall system; ventilated by grate; is located at Brazil, on the Keokuk & Western Railroad; thickness of vein, two feet ten inches; mule power is used to bring the coal to the surface; ten miners employed.

C. B. HURL,
President.
B. C. PERRION,
Superintendent.

ELDON, No. 2.

Is a shaft mine, 160 feet deep, located at Shawville, on the Chicago, Rock Island & Pacific Railroad; is worked on the double entry system; ventilated by fan; the equipments of this mine are all new and in good order; a new double engine, manufactured by the Ottumwa Iron Works, is used to bring the coal to the surface; vein of coal, three feet thick; ten miners employed.

THOMAS GARRINGTON,
Superintendent.

FENTON.

Is a shaft mine, located near Milledgeville; is operated for local trade; shaft, twenty-five feet deep; thickness of vein, thirty inches; worked by single entry; is operated by Fenton & Bros.

APPANOOSE.

Is a shaft mine, 160 feet deep, located at Cincinnati, on the Chicago, Burlington & Kansas City Railroad; is operated by the Appanoose Coal Co.; is

worked on the double entry system; is ventilated by steam jet; steam power is used for hoisting purposes; thirty miners employed.

E. S. MARSH,
Superintendent.

CENTERVILLE.

Is owned and operated by the Centerville Coal Co; location, relay on Keokuk & Western Railroad; is a shaft mine, 107 feet deep; is worked on the double entry system, and double rooms; 110 men employed; the Harrison mining machines are in use at this mine; steam power, double engine, is used for hoisting; vein of coal two feet ten inches thick; ventilator, fan.

F. C. DRAKE,
Superintendent.

NUMA.

Is a shaft mine 144 feet deep; operated by Bradley & Jones; is located at Numa, on the Chicago, Rock Island & Pacific Railroad; is worked by double entries and double rooms; steam power is used for hoisting; thickness of vein, two feet six inches; twenty-five miners employed.

W. A. JONES,
Superintendent.

STANDARD.

Is a shaft mine, 125 feet deep; is operated by the Standard Coal Co.; is located at Centerville, on the Chicago, Rock Island & Pacific Railroad, and Keokuk & Western Railroad; steam power is used for hoisting the coal; thickness of vein, two feet nine inches; worked on the double entry system; ventilated by fan. The buildings at this mine were all burned on the 12th day of August, 1887; was rebuilt and commenced loading coal Nov. 5, 1887; there were several miners at work about one thousand feet from the burning shaft, and had not been apprised of the fire until the mine boss reached them by the escape shaft, and all of them made their escape safely.

G. W. MERRITT,
Superintendent.

PHILBY.

Is a slope mine, located at Brazil, on the Keokuk & Western Railroad; is operated by the Philby Coal Co., and is worked on the longwall system, and ventilated by furnace; mules are used to bring the coal to the surface; thickness, two feet ten inches; forty-five miners employed.

O. E. PHILBY,
President.

T. PHILBY,
Secretary.

D. D. PHILBY,
Superintendent.

WALDEN.

Is a shaft mine, 125 feet deep; located at Centerville; is operated for the local trade; ventilated by grate; thickness of vein, two feet ten inches; nine miners employed.

B. STUFFS,
Superintendent.

SCANDINAVIAN.

Is a shaft mine, 105 feet deep; located at Centerville, on the Keokuk & Western Railroad; steam power is used for hoisting purposes; is worked on the double entry system; ventilated by fan; thickness of vein, two feet nine inches; ninety-five miners employed. The dump-house, engine-house and coal chutes, were all destroyed by fire on January 19, 1889; cause unknown; they have rebuilt good and substantial buildings, and are in good running order again.

T. J. GREEN,
Superintendent.

CINCINNATI.

Is a shaft mine, located at Cincinnati; is operated by the Cincinnati Coal Co.; horse power is used to bring the coal to the surface; thickness of vein, two feet eight inches; is worked on the single entry system; ventilation by natural forces; depth of shaft, eighty feet.

C. C. CALKER,
Superintendent.

SILKNETTER, No. 1.

Is a slope mine, owned and operated by B. F. Silknetter; is worked long-wall; ventilated by furnace; mules are used to bring the coal to the surface; vein, two feet ten inches thick; is located at Brazil, on the Keokuk & Western Railroad; twenty-eight men employed.

B. F. SILKNETTER,
Manager.

STAR.

Is a shaft mine, eighty feet deep; located at Centerville, and operated for local trade; horse power is used for hoisting; vein, three feet thick; worked on the room and pillar system; ventilated by grate; ten miners employed.

JAMES WILSON,
Superintendent.

THISTLE.

This is a new mine, located at Cincinnati, on the Chicago, Burlington & Kansas City Railroad; is operated by the Thistle Coal Co.; is worked on the

double system; vein of coal, two feet eight inches thick; horse power is at present used for hoisting; twenty-five miners employed.

DAVID DINING,
President.
DAVID BOWIE,
Secretary.
DAVID STEELE,
Superintendent.

ENTERPRISE, No. 1.

Is a slope mine, operated by Lee & Bros.; it is located one half mile west of Brazil, on the Keokuk & Western Railroad; is worked on the double entry system; thickness of vein, two feet ten inches; mules are used to bring the coal to the surface; ventilated by furnace.

J. E. LEE,
Superintendent.

ENTERPRISE, No. 2.

Belongs to the same company, and is managed by the same officers; is a shaft, forty feet deep; location, one mile west of Mystic, on Chicago, Milwaukee & St. Paul Railroad; horse power is used for hoisting; ventilated by furnace.

PARKER.

Is a shaft mine, 110 feet deep; located at Livingstone, and is owned and operated by B. B. Parker; thickness of vein, thirty inches; coal sold at local sales; horse power is used for hoisting; six miners employed.

Harris & Wahls operates a slope mine, four miles southeast of Moravia; three miners employed; thickness of vein, thirty inches; sold at local sales.

Richard Campbell operates a slope mine at Brazil. A part of the product of this mine is hauled to Mystic with teams and shipped on the Keokuk & Western Railroad; the balance sold at local sales.

SILKNETTER No. 2.

Is a slope mine, operated by B. F. Silknetter; is located on the Chicago, Milwaukee & St. Paul Railroad, one mile west of Mystic; is a new mine; thickness of vein, thirty inches; mule power is used to bring the coal to the surface.

SILKNETTER No. 3.

Is a slope mine, and is operated by the same company, and is managed by the same officers; is located one mile west of Mystic, on the Chicago, Milwaukee & St. Paul Railroad; thickness of vein, thirty inches.

ANCHOR.

Is a new shaft mine, seventy feet deep; thickness of vein, three feet; situated at Centerville, on the Keokuk & Western Railroad; worked on the double entry system; is incorporated under the mining laws of the State; the following are the officers of the company:

ANDREW BURKLAND,
President.
LOUIS ANDERSON,
Secretary.
AUGUST NELSON,
Treasurer.
G. SWEARINGIN,
Superintendent.

GLADSTONE.

Is a new shaft mine, 103 feet deep; thickness of vein, thirty inches, which was struck on June 18, 1889; will be opened upon the longwall system; is situated two miles east of Jerome, on the Chicago, Milwaukee & St. Paul Railroad; horse power is used for hoisting; is operated by the Gladstone Coal Co.

JOSEPH GILL,
President.
J. E. JONES,
Superintendent.

BAKER.

Is a new shaft mine, fifty feet deep; operated by G. William Baker; situated three miles west of Mystic, on the Chicago, Milwaukee & St. Paul Railroad; thickness of vein, two feet and a half; horse power; four miners employed.

ADAMS COUNTY.

BRISCOE.

Is a shaft mine, eighty-six feet deep; located at Briscoe; is worked on the longwall system; vein of coal, sixteen inches; ten miners employed; horse power is used for hoisting coal; sold at local sales.

RICHARD BRISCOE,
Superintendent.

METHODIST CHURCH MINE.

Is a new shaft, located at Carbon; horse power is used for hoisting; is worked on the longwall system; ventilated by grate; vein of coal, sixteen inches thick; sold at local sales; eight miners employed.

WILLIAM COLWELL,
Superintendent.

LIPPETT.

This mine is operated for local trade; location near Eureka; shaft is seventy-three feet deep; horse power is used for hoisting; vein, sixteen inches; worked on the longwall system; two miners employed.

JOSEPH HARTSHORN,
Superintendent.

BENNETT.

Is a shaft mine, thirty-five feet deep; located at Carbon; horse power used for hoisting; is worked on the longwall system; vein of coal, sixteen inches thick; sold at local sales; six miners employed.

P. F. MARSHALL,
Superintendent.

James Hartshorn operates a slope mine, near Eureka, for local trade in the winter season; vein of coal, sixteen inches thick; two miners employed.

CARBON COAL CO.

Operates a shaft mine, at Carbon, which is sixty feet deep; worked on the longwall system; vein of coal, sixteen inches thick; ventilated by grate; coal sold at local sales; ten miners employed.

POWELL.

Is operated by Samuel Powell; shaft is sixty-five feet deep; is worked on the longwall system; ventilated by grate; horse power is used for hoisting; vein of coal sixteen inches thick; sold at local sales; location Eureka.

WILDS.

Is a shaft mine, twenty feet deep; located at Carbon; vein sixteen inches thick; worked on the longwall system; horse power is used for hoisting; the coal is sold at local sales; four miners employed.

JOHN F. WILDS,
Superintendent.

JONES.

Is operated by Jones & Bros., at Carbon; shaft is fifty feet deep; worked on the longwall system; horse power is used for hoisting; vein of coal sixteen inches thick; sold at local sales; ventilated by grate.

RIMBEY.

This is a shaft mine, fifty feet deep; located at Carbon; horse power is used for hoisting the coal, which is sold at local trade; vein of coal, sixteen inches thick; worked on the longwall system; ventilated by grate; four miners employed.

H. RIMBEY,
Superintendent.

CO-OPERATIVE.

Is a shaft, fifty feet deep; located at Carbon; operated by Gebbie & Kearns; horse power is used for hoisting the coal; vein, sixteen inches; worked on the longwall system; ventilated by grate; coal sold at local trade; ten miners employed.

HAZEL DELL.

Is a shaft mine, ninety-five feet deep; located at Hazel Dell; is operated by Britton & Brooks, for local trade; vein is sixteen inches thick; worked on the longwall system; ventilated by grate; ten miners employed.

CHARLES BROOKS,
Superintendent.

William Hartshorn operates a slope mine, near Eureka, for local trade; vein of coal, sixteen inches; worked on the longwall system; five miners employed.

NEIL.

Is a shaft mine, seventy-three feet deep; located near Carbon; horse power is used for hoisting the coal; vein, sixteen inches thick; sold at local sales; worked on the longwall system; four miners employed.

GEORGE HARDIN,
Superintendent.

DAVIS COUNTY.

Ely Dye operates a drift mine, three miles southwest of Eldon, for local trade; five miners employed.

A. T. Dotson operates a drift mine, three miles southwest of Eldon, for local trade; two miners employed.

The Brown Cannel Co. operates a drift mine near Floris, for local trade; three miners employed.

Quigley & Smith operate a drift mine, near Floris, for local trade; five miners employed.

JEFFERSON COUNTY.

LICK CREEK.

Is a shaft mine, twenty-seven feet deep; operated by John Beal; situated three miles south of Libertyville; worked on the single entry system; ventilation by grate; thickness of vein, three feet; ten miners employed; the product of the mine is hauled with teams to the Fort Madison & Northwestern Railroad; distance, five miles.

CRAWFORD'S.

Is a shaft mine, sixty-five feet deep; operated by George Bates; situated four and a half miles south of Fairfield; thickness of vein, four feet; coal sold at local sales; horse power; four miners employed.

CHANDLER.

Is a slope mine, operated by William Shaffer, for local trade; is situated near Perlee; eight miners employed.

A. J. Zimmerman operates a slope mine, three miles south of Libertyville, for local trade; vein of coal, three feet thick; three miners employed.

MCGREGOR.

Is a shaft mine, fifty feet deep; operated by John McGregor; situated at Coalport; thickness of vein, three and a half feet; the product of this mine is hauled with teams and shipped on the Chicago, Burlington & Quincy Railroad; horse power; ten miners employed.

JEFFERSON.

Is a new shaft mine, eighty feet deep; operated by the Jefferson County Coal Co.; situated at Perlee, on Chicago, Rock Island & Pacific Railroad; is operated on the double entry system; ventilated by steam jet; thickness of vein, three and one half feet; fifteen miners employed.

W. E. HARRIS,
Superintendent.

CLOKE.

Is a new shaft mine, sixteen feet deep; operated by John Cloke; situated two and one half miles south of County Line; thickness of vein, four and one half feet; horse power; coal sold at local sales.

Thomas Russell operates a shaft mine, near Fairfield, for local trade; vein of coal three feet thick; horse power.

LUCAS COUNTY.

WHITEBREAST, No. 2.

Is a shaft mine, 270 feet deep; owned and operated by the Whitebreast Fuel Co., and located at Cleveland, on the main line of the Chicago, Burlington & Quincy Railroad; is worked on the double entry system, and ventilated with two fans; one is twenty feet and one twenty-four feet in diameter; steam power is used for hoisting and underground haulage; thickness of vein, five to six feet; three hundred miners employed.

RICHARD ROSSET,
Superintendent.

WHITEBREAST, No. 3.

Is owned and operated by the same company, and managed by the same officers, and is situated at Phillips, on the main line of the Chicago, Burlington & Quincy Railroad; is worked on the double entry system, and ventilated by a fan twenty feet in diameter; steam power is used to bring the coal to the surface; thickness of vein, four to six feet; 290 miners employed.

ROBERT ROSSET,
Superintendent.

IOWA.

Is a shaft mine, situated at Zero, on the main line of the Chicago, Burlington & Quincy Railroad; twenty-five miners were employed; is now abandoned; was owned and operated by the Iowa & Mahaska Coal Co.

Williamson & Bros. operate a shaft mine near Chariton, for local trade; four miners employed in the winter season.

William Griffin, L. H. Smith, James Hall, Hegg & Bro., Vaneway & Bro., and John Wilson operate small mines for local trade near Chariton.

MONROE COUNTY.

AKERS.

Is a new shaft mine, forty-five feet deep; located at Fredric; thickness of vein, four feet; horse power is used for hoisting the coal; four miners employed; the out-put of this mine is hauled to Fredric with teams and shipped on Chicago, Burlington & Quincy Railroad, a distance of one half mile.

CHARLES AKERS,
Superintendent.

Scott, Appelman & Co. operate a shaft mine near Avery; no miners employed; the owners mine their own coal.

I. C. Moyle & Kridelbaugh operate a slope mine near Avery for local trade.

CHISHOLM.

Is a shaft mine 130 feet deep; located at Chisholm, on Chicago, Burlington & Quincy Railroad; is operated by the Chisholm Coal Co.; steam power is used for hoisting the coal; is worked on the double entry system, and ventilated by fan; eighty-five miners employed; thickness of vein, five feet.

W. I. SHIELDS,
President.
C. N. BLOOMFIELD,
Secretary.
N. A. FLANDERS,
Superintendent.
THOMAS SCAVENGER,
Treasurer.

MONROE.

Is a new shaft, 180 feet deep, located near Foster; thickness of vein, five feet; is owned and operated by the Monroe Coal & Prospecting Co.; horse power is used for hoisting the coal.

A. J. WEBER,
Secretary.

IOWA & WISCONSIN.

Is owned and operated by the Iowa & Wisconsin Coal Co.; is a shaft 167 feet deep; located two miles west of Albia, on the main line of the Chicago, Burlington & Quincy Railroad; steam power is used for hoisting the coal; also for underground haulage; a new plant which has lately been put in by

the Ottumwa Iron Works; is worked on the double entry system, and ventilated by fan; 125 miners employed; thickness of vein, five feet.

J. D. MACMILLAN,
General Manager.
SIMON FRAZER,
Superintendent.

SMOKEY.

Is a slope mine, owned and operated by the Smokey Hollow Coal Co.; is located on the Chicago, Burlington & Quincy Railroad, near Avery; steam power is used to bring the coal to the surface; is worked on the double entry system, and ventilated by furnace; thickness of vein, five feet; seventy miners employed.

JOHN EVANS,
General Manager.

HICKORY.

Is a shaft mine, eighty-nine feet deep; situated at Hickory, on the Central Iowa Railroad, and worked on the double entry system; ventilated by fan; steam power is used for hoisting; thickness of vein, four and a half feet; twenty-five miners employed.

A. DOUGLASS,
General Manager.
JAMES MITCHELL,
Superintendent.

OMAHA.

Is a shaft mine, 135 feet deep; situated three miles west of Albia, on the main line of the Chicago, Burlington & Quincy Railroad; steam power is used for hoisting; is worked on the double entry plan and ventilated by furnace; eighty miners employed. This mine was operated by the Omaha Coal Mining Co. until December 7, 1888; from December 7, 1888, until March 1, 1889, it was in the hands of C. M. Schenck, Receiver, and operated by him until closed, about March 1, 1889.

ENTERPRISE.

Is owned and operated by the Enterprise Coal Co.; is a shaft mine, 120 feet deep; situated two and one half miles west of Albia, on the main line of the Chicago, Burlington & Quincy Railroad; ventilated by furnace; is worked on the double entry system; eighty miners employed; steam power is used for hoisting, also for underground haulage.

T. J. LEWIS,
Superintendent.

PLEASANT VALLEY.

Is a slope mine, operated by the Pleasant Valley Coal Co.; is located at Coalfield, on the Iowa Central Railroad; steam power is used to bring the

coal to the surface; is worked on the single entry plan, and ventilated by furnace; thirty-five miners employed; thickness of vein, three and one half feet.

SOAP CREEK.

Is a new shaft mine, 190 feet deep; located at Foster, on the Southwestern branch of the Chicago, Milwaukee & St. Paul Railroad; steam power is used for hoisting, which is all new and of the most improved pattern, manufactured by the Ottumwa Iron Works; thickness of vein, five feet; ventilated by fan; is owned and operated by the Soap Creek Coal Co.

E. J. FOSTER,
President, Cedar Rapids.
HENRY PHILLIPS,
Secretary and Treasurer, Ottumwa.
SAMUEL GILFOY,
General Manager, What Cheer.

FREDERIC.

Is a shaft mine, eighty feet deep; situated at Frederic; is operated by Joseph Moss & Co.; steam power is used for hoisting; thickness of vein, three feet; worked on the longwall system; ventilated by furnace; the coal is hauled to Frederic with teams, and shipped on the Chicago, Burlington & Quincy Railroad.

JOSEPH MOSS,
Superintendent.

Davidson & Stocker operate a slope mine, near Coalfield; thickness of vein, three and one half feet; horse power is used to bring the coal to the surface; part of the product of this mine is hauled with teams to Coalfield, and shipped on the Central Iowa Railroad, the remainder sold at local sales.

MARION COUNTY.

WHITEBREAST, No. 11.

Is a slope mine, owned and operated by the Whitebreast Fuel Co., and situated at Flagler, on the Albia and Des Moines Branch on the Chicago, Burlington & Quincy Railroad; is worked on the double entry system, and ventilated by furnace; steam power and the tail rope system of underground haulage is in use at this mine; 186 miners employed.

S. A. FLAGLER,
Manager.
HARRY BOOTH,
Mine Superintendent.

BLACK DIAMOND.

Is a slope mine, operated by the Black Diamond Coal Co.; situated at Dunreath, on the Wabash Railroad; is worked on the double entry system, and ventilated by furnace; mules are used to bring the coal to the surface; thickness of vein, six feet; fifty miners employed.

JOHN WALTERS,
Superintendent.

Prairie Creek Coal Co. operates a drift mine, at Dunreath; the out-put of this mine is hauled with teams, and shipped on the Wabash Railroad; vein of coal, five feet thick; three miners employed.

SAMUEL COOK,
Superintendent.

Thompson Bros. operate a slope mine, two and a half miles northwest of Pella, for local trade; eight miners employed; thickness of vein, three and a half feet; steam power is used to bring the coal to the surface.

JAMES THOMPSON,
Superintendent.

R. Brecht operates a shaft mine, eighty feet deep; is situated two and a half miles northwest of Pella; coal is sold at local sales; thickness of vein, three and a half feet; steam is used to bring the coal to the surface; six miners employed.

William Lewis operates a slope mine, at Knoxville, for local trade; fourteen miners employed; horse-power is used to bring the coal to the surface; thickness of vein, three and a half feet.

S. M. Ruckman operates a slope mine, four miles south of Knoxville, for local trade; thickness of vein, three and a half feet; five miners employed.

William Gamble operates a shaft mine, at Knoxville, for local trade; thickness of vein, three and a half feet; horse power is used to bring the coal to the surface; ten miners employed.

MARION, No. 1.

Is a new shaft mine, 100 feet deep; owned and operated by the Marion County Coal Co.; is situated at Otley, on the Chicago, Rock Island & Pacific Railroad; is worked on the double entry system; ventilated by steam jet; steam power is used for hoisting the coal; thickness of vein, six feet; thirty miners employed.

RICHARD FRASER,
Superintendent.

MARION, No. 2.

Is a slope mine, owned and operated by the same company, and managed by the same officials; steam power is used for underground haulage; thickness of vein, six feet; ten miners employed.

MARSHALL.

Is a slope mine owned and operated by George Marshall; steam power is used to bring the coal to the surface; is worked on the double entry system, and ventilated by furnace; the product of this mine is hauled to Otley with teams and shipped on the Chicago, Rock Island & Pacific Railroad; vein is six feet thick; sixteen miners employed.

Grube & McNaish operate a drift mine, four miles south of Monroe, in Marion county, for local trade; eight miners employed.

ATLAS.

Is a new shaft mine, 125 feet deep; situated near Hamilton, and operated by the Atlas Coal Co.; horse power is used for hoisting; vein of coal, four feet thick; the product is hauled to Hamilton with teams and shipped on Chicago, Burlington & Quincy Railroad; four miners employed.

J. B. MALLORY,
Superintendent.

BOUDINOT.

H. R. Boudinot operates a drift mine, two miles southwest of Hamilton; thickness of vein, five feet; coal is hauled to Hamilton with teams and shipped on Chicago, Burlington & Quincy Railroad; fourteen miners employed; ventilated by furnace.

J. A. Boudinot operates a slope mine, two miles southwest of Hamilton; the product of this mine is hauled with teams and shipped on Chicago, Burlington & Quincy Railroad; thickness of vein, five feet; ventilated by furnace; fourteen miners employed.

John Youser operates a slope mine near Maysville; ten miners employed; thickness of vein, five feet.

David Fry operates a slope mine, near Marysville, for local trade.

B. A. Smith, Patrick Carey, and Samuel Wells operate small mines for local trade, between Pella and Knoxville.

Marion Conery and Jacob Bingham operate small mines for local trade, south of Knoxville.

Samuel Ream and William Holloway operate small mines, near Tracy, for local trade.

WHITEBREAST, No. 7.

Located at Swan, on Chicago, Burlington & Quincy Railroad, was worked out and abandoned in ———, 1888.

Samuel Stales operates a drift mine, near Attica, for local trade.

John Martin operates a drift mine, four miles southeast of Knoxville, for local trade; vein of coal, four and one half feet thick.

Samuel Whitlatch, David Price, and Lewis Whitlatch operate small drift mines, for local trade, near Attica.

COLLINS.

Is a shaft mine, ninety-five feet deep; owned and operated by T. L. Collins & Co.; situated at Knoxville, on the Chicago, Rock Island & Pacific Railroad; thickness of vein, three feet; horse power is used for hoisting; ventilated by furnace; twenty miners employed.

John J. Thomas operates a shaft mine; fifty feet deep; thickness of vein, three feet; coal sold at local sales; horse power is used for hoisting; six miners employed; is located at Swan.

WHITE SMOKE COAL CO.

Is a slope mine, located near Percy, on the Wabash Railroad; thickness of vein, three and one half feet; ventilated by furnace; steam power is used for bringing the coal to the surface; five miners employed.

H. R. DAWSON,
Superintendent.

William Franklin operates a drift mine, four miles north of Flagler, for local trade; four miners employed; vein, four and one half feet thick.

OAK HILL.

Is a drift mine; operated by S. M. Rollins; is located at Flagler, on Chicago, Burlington & Quincy Railroad; thickness of vein, five feet; mules are used to bring the coal to the surface; twelve miners employed; ventilated by furnace.

PAGE COUNTY.

FULKS.

Is a new shaft mine, eighty feet deep; located at Shombaugh; is operated by C. G. Fulk, for local trade; vein of coal, two feet thick; worked on the longwall system; ventilated by grate; six miners employed; horse power is used for hoisting.

Woodruff & Co. operate a small shaft mine, for local trade, near Shombaugh; vein, eighteen inches thick; three miners employed.

MCLEAN.

Is a shaft mine, owned and operated by William McLean & Son; is located near Shombaugh; coal is sold at local sales; vein, eighteen inches thick.

PEARSON.

Is a shaft mine, fifty feet deep; situated two miles south of Clarinda; is operated by Pearson & Bro., for local trade; vein, sixteen inches thick; ventilated by grate; horse power.

WALKER.

Is a slope mine, operated by Samuel Walker, for local trade; is located two miles south of Clarinda; vein of coal, eighteen inches thick; three miners employed.

SAMUEL WALKER,
Superintendent.

TAYLOR COUNTY.

ANDERSON, No. 1.

Is a shaft mine, 132 feet deep; situated at New Market, on the Humeston & Shenandoah Railroad, and is owned and operated by Ben Anderson & Sons; is worked on the longwall system, and ventilated by furnace; horse power is used for hoisting; thickness of vein, sixteen inches; fourteen miners employed.

ANDERSON, No. 2.

Belongs to the same company and is under the same management, and worked on the same system, and ventilated by furnace; horse power is used to bring the coal to the surface; shaft is 132 feet deep; fourteen miners employed.

ANDERSON, No. 3.

Is a new shaft, 120 feet deep, opened on the same seam on adjoining land, and also owned by Ben Anderson & Sons; is worked on the longwall system, and ventilated by grate; horse power is used for hoisting the coal; fourteen miners employed.

BEN ANDERSON,
General Manager.

MACKLEY, No. 1.

Is a shaft mine, sixty-six feet deep; located ten miles south of Villisca, in Taylor county; thickness of vein, sixteen inches; worked on the longwall plan; horse power is used to hoist the coal; ten miners employed.

H. C. MACKLEY,
Superintendent.

MACKLEY, No. 2.

Is operated by H. C. Mackley, and opened on the same seam; shaft is sixty-nine feet deep; horse power is used for hoisting; worked on the longwall system, and ventilated by grate; six miners employed.

AUKNEY.

Is a shaft mine, twenty feet deep; situated twelve miles south of Villisca, in Taylor county; vein of coal, sixteen inches thick; ventilation, natural; is operated for local trade; three miners employed.

ISAAC AUKNEY,
Superintendent.

WILCOX.

Is owned and operated by Nathan Wilcox; shaft is fifty-three feet deep; is located twelve miles south of Villisca, in Taylor county; is worked on the longwall system, and ventilated by grate; horse power is used to hoist the coal; vein, sixteen inches thick; ten miners employed.

TILLEY.

Is a shaft mine, fifty-two feet deep; located two miles east of New Market; thickness of vein, sixteen inches; worked on the longwall system; ventilated by grate; horse power for raising the coal, which is sold at local trade; four miners employed.

WILLIAM A. TILLEY,
Superintendent.

BEAN.

Is owned and operated by W. H. Bean; is a shaft mine, 115 feet deep; thickness of vein, sixteen inches; ventilated by grate; horse power to raise the coal; worked on the longwall plan; five miners employed.

BURNSIDE.

Is a shaft mine, operated for local trade, by Burnside & Conlough; is located ten miles south of Villisca, in Taylor county; thickness of vein, sixteen inches; four miners employed.

CAMPBELL.

Is operated by Campbell & Sons; is a shaft, sixty feet deep; located two miles east of New Market; thickness of vein, sixteen inches; ventilated by grate; horse power; coal sold at local sales; four miners employed.

BOMAR.

Is a shaft mine, operated by John Bomar, for local trade; is situated ten miles south of Villisca, in Taylor county; three miners employed.

VAN BUREN COUNTY.

FARMINGTON.

Is a shaft mine, fifty feet deep; operated by the Farmington Coal Co.; situated at Farmington, on the Chicago, Rock Island & Pacific Railroad; thickness of vein, four feet; ventilated by grate; horse power; plan of working, single entry; fifteen miners employed.

JAMES CARR,
Superintendent.

DOUDS.

Is a slope mine, operated by Carson & Walker; situated at Douds; thickness of vein, three feet; mules are used to bring the coal to the surface; plan of working mine, main entries, double cross entries, single; ten miners employed; the products of this mine is hauled to Douds Station with teams and sold to the Chicago, Rock Island & Pacific Railroad.

FINLIN.

Is owned and operated by George Finlin; situated at Douds; thickness of vein, three and a half feet; mules are used in the slope to bring the coal to the surface; coal is hauled to Douds with teams, and shipped on Chicago, Rock Island & Pacific Railroad; eight miners employed.

BLACK BEAR.

Is a new mine, opened up near Bentonsport, by A. C. Boyer; is located on Bear Creek; thickness of vein, forty-two inches; coal sold at local sales.

David Cox operates a small mine, near Hillsboro; for local trade in the winter season.

E. S. Green, operates a shaft mine, for local trade in the winter season; located four miles northwest of Douds.

KITCHEN.

Is a new slope mine, operated by Kitchen & Bros.; situated at Farmington, on Chicago, Burlington & Kansas City Railroad; steam power is used to bring the coal to the surface; is worked on the double entry system, and ventilated by furnace; fifty-five miners employed.

Stoddard & Turner, operates a shaft mine, for local trade; three miles northeast of Farmington.

WAPELLO COUNTY.

WAPELLO No. 1.

Is a slope mine, owned and operated by Wapello Coal Co.; is situated at Kirkville, on the Ottumwa & Kirkville Railroad; thickness of vein, five to six feet; ventilated by fan and furnace; steam power is used to bring the coal to the surface; 160 miners employed.

SHAFT, No. 3.

Which is owned and operated by the same company, and managed by the same officials, has been worked out and abandoned.

SLOPE, No. 4.

Is the property of the same company, and managed by the same officers; is worked on the double entry system, and ventilated by furnace steam power, and the tail rope system of underground haulage is in use at this mine; thickness of vein, six feet; 130 miners employed.

SLOPE, No. 5.

Is a new mine, just opened up; is owned by the same company, and managed by the same officials; steam power and the tail rope system of haulage will be in use at this mine.

H. L. WATERMAN,
General Manager.

ELDON, No. 1.

Is a shaft mine, seventy-four feet deep; owned and operated by the Eldon Coal Co.; situated at Laddsedale, on the Chicago, Rock Island & Pacific Railroad; is worked on the double entry system, and ventilated by fan; steam power is used for hoisting the coal; thickness of vein, five feet; sixty miners employed.

THOMAS GARRINGTON,
Superintendent.

HAWKEYE.

Is a shaft mine, ninety-six feet deep; situated at Ottumwa, on the Chicago, Milwaukee & St. Paul Railroad; steam power is used for hoisting; is worked on the double entry system, and ventilated by fan; thickness of vein, five feet; thirty-five miners employed.

A. A. CAUGLAN,
President and Superintendent.
JAMES BURGESS,
Secretary.

KIRKPATRICK.

Is situated three miles south of Ottumwa; was formerly operated by Wagner & Bros.; is a shaft forty-eight feet deep, and operated for local trade; steam power is used for hoisting; thickness of vein, three feet and a half; fifteen miners employed.

M. T. DAUGHERTY,
Manager.

William Walton & Co., operates a drift mine, two miles east of Eddyville, for local trade; two miners employed.

BAKER.

Is a shaft mine, ninety feet deep; operated by Baker & Adams; steam power is used for hoisting; thickness of vein, four feet; ventilation by fan; thirty miners employed; coal sold at local sales.

John Vanderpool operates a shaft mine for local trade; location, seven miles northwest of Ottumwa; thickness of vein, four feet; horse power is used for hoisting; five miners employed.

John Moore operates a shaft mine for local trade in the winter season; is located three miles northeast of Ottumwa; thickness of vein, three feet; horse power is used for hoisting; three miners employed.

Michael Quirk operates a shaft mine, sixty feet deep, two and a half miles northwest of Ottumwa, for local trade; thickness of vein three and a half feet; horse power is used for hoisting; three miners employed.

Daniel Cumings operates a shaft mine, thirty-eight feet deep, at Eldon, for local trade; thickness of vein, two and a half feet; horse power is used for hoisting; six miners employed.

William Nichols operates a shaft mine at Eldon, for local trade; thickness of vein, three feet; horse power is used for hoisting; five miners employed.

Rolla Goodin operates a shaft mine, seventy-five feet deep, five and a half miles northeast of Ottumwa, for local trade; seven miners employed.

Daniels & Graham operate a shaft mine, sixty feet deep, five and a half miles northeast of Ottumwa, for local trade; steam power is used for hoisting; coal sold at local sales; ten miners employed.

Hughs & Cruikshank are opening a new shaft at Ottumwa, for local trade; thickness of vein, four feet; horse power is used for hoisting; six miners employed.

PHILLIPS, No. 1.

Is a shaft mine, eighty feet deep, situated near Ottumwa on the Chicago, Milwaukee & St. Paul Railroad; is owned and operated by Phillips Coal Co., and worked on the double entry system and ventilated by fan; steam power is used for hoisting purposes; thickness of vein, four to five feet; seventy miners employed.

WILLIAM FOUKES,
Superintendent.
JOHN WHITE,
Mine Boss.

PHILLIPS, No. 2.

Is owned and operated by the same company and managed by the same officials; is a shaft mine, 115 feet deep; worked on the double entry system and ventilated by fan; thickness of vein, five feet; steam is used for hoisting and underground haulage; seventy-five miners employed; is located near Ottumwa on the Chicago, Milwaukee & St. Paul Railroad.

SUGAR CREEK.

Is a shaft mine, sixty feet deep, situated four miles southeast of Ottumwa; is operated for local trade by the Sugar Creek Coal Co. This mine has been idle all summer. Thickness of vein, five feet; steam power is used for hoisting; six miners employed.

DAVID EVANS,
President.
WILLIAM MCANNA,
Secretary.
ALEXANDER MAXWELL,
Superintendent.

DIXON'S.

Is a shaft mine, twenty feet deep, operated by Dixon & Bro., for local trade; thickness of vein, four to five feet; located four miles east of Ottumwa; horse power is used for hoisting; three miners employed.

BENNETT.

Is operated for local trade by William Bennett; is located near Kirkville; thickness of vein, six feet; horse power is used for hoisting; six miners employed.

E. E. Godley operates a drift mine near Eldon, in the winter season, for local trade; three miners employed.

Jacob Ream & Sons operate a shaft mine, two miles northwest of Ottumwa, for local trade; horse power is used for hoisting; vein of coal, three feet thick; four miners employed.

Myers & Bros. operates a shaft mine, ninety feet deep; steam power is used for hoisting; is operated for local trade; vein three and a half feet thick; situated two miles northwest of Ottumwa; four miners employed.

WARREN COUNTY.

LUMSDEN.

Is a shaft mine, sixty feet deep; situated at Summerset, on the Chicago, Rock Island & Pacific Railroad; thickness of vein, three and one half feet; worked on the double entry system; ventilated by fan; steam power is used for hoisting the coal; twenty-five miners employed.

JOHN LUMSDEN,
President.
JAMES LUMSDEN,
Superintendent.

BENNUM.

Is a shaft mine operated by William Bennum; situated two and one half miles east of Summerset; thickness of vein, three feet; coal sold at local sales; horse power is used for hoisting; ten miners employed; ventilated by natural forces.

JONES.

Is a shaft mine, sixty-five feet deep; operated by D. K. Jones; is located two and one half miles east of Summerset; is worked on the longwall system; ventilated by grate; thickness of vein, three feet; horse power is used for hoisting the coal; fifteen miners employed; coal sold at local sales.

SIMMONS.

Is owned and operated by D. W. Simmons; is a shaft mine, situated three miles southeast of Summerset; worked by double entries; ventilation by natural forces; thickness of vein, three feet; horse power for hoisting the coal, which is sold at local sales.

Penlam Warford operates a shaft mine, in the winter season, for local trade; is located two and one half miles east of Summerset; two miners employed.

Reuben Runnells operates a drift mine, near Summerset, for local sales; two miners employed.

J. P. Cotman operates a small mine, near Norwalk, for local trade, in the winter season; seven miners employed.

Harrison Miller & Bro., Otenrider & Mitchell, Isaac Snell, Huston Fogle, operate small mines, for local trade, near Lacona.

N. D. Boles, H. Nebster, S. P. Bryant, Samuel J. Burges, Eugene Richmond, Branch & Long, Andy Connors, operate small mines, for local trade, near Milo.

WAYNE COUNTY.

OCCIDENTAL.

Is a shaft mine, 244 feet deep; situated at Seymour, on the Chicago, Rock Island & Pacific Railroad; is worked on the longwall system; ventilated by fan; steam power is used for hoisting the coal; thickness of vein, two feet six inches; twenty-six miners employed.

JOHN JAMISON,
Superintendent.

FRY.

Is owned and operated by Lewis Fry & Co., for local trade; shaft is fifty feet deep; vein, two feet six inches thick; worked on the longwall system; ventilated by grate; steam power is used for hoisting purposes; eight miners employed; is located two miles south of Confidence.

BURNS.

Is a shaft mine, fifty feet deep, located two miles south of Confidence; is worked on the longwall system; thickness of vein, two feet six inches; sold at local sales; horse power is used for hoisting the coal; six miners employed.

B. F. BURNS,
Manager.

BURLAND.

Is a shaft mine, located eight miles west of Seymour, and is operated by Thomas Burland for local trade; thickness of vein, two feet; ventilated by furnace, and worked on the longwall system; shaft is 156 feet deep; horse power is used for hoisting; ten miners employed.

BATEY.

Is a shaft mine, fifty feet deep; is operated by Batey & Jones, for local trade; situated three miles east of Confidence; thickness of vein, two feet six inches; worked on the longwall system; ventilation by natural forces; five miners employed; horse power for hoisting purposes.

R. M. Davis operates a slope mine, for local trade, three miles south of Confidence; thickness of vein, two feet six inches; three miners employed.

Ferris & Bros. operate a slope mine for local trade, situated three miles southeast of Confidence; vein, two feet six inches thick; four miners employed.

Blevins & Dexter operate a slope mine, five miles south of Confidence, for local trade, in the winter season; three miners employed; hand power.

JARED.

Is a shaft mine, operated for local trade; vein, two feet six inches thick; horse power is used; three miners employed; operated by Attwell & Hixenbaugh; located three miles south of Confidence.

IMPROVEMENTS MADE IN THE MINES OF DISTRICT No. 1, FROM JUNE 30, 1887, TO JUNE 30, 1889.

APPANOOSE COUNTY.

NAMES OF MINES.	Air shafts.	Second openings.	Stairway.	Covers on cages.	Safety catches.	Safety gates.	Furnaces.	Fans.	Brakes on drums.
Scandinavian Mine.....	1							1	
Diamond Coal Co.....								1	
Standard Coal Co.....								1	
B. F. Silknetter.....	1						1		
Thistle Coal Co.....	1		1	1					
Charles Knight & Son.....	1	1							
Seddon & Bro.....	1	1	1				1		
B. Stuffs.....				1					
Alexander Clark & Son.....	1				1				
National Coal & Mining Co.....					1				1
E. J. Richardson.....				1	1	1			1
Lane Coal Co.....	1	1						1	
Phoenix Coal & Mining Co.....	1			1	1	1		1	1
Thomas Phillips.....		1						1	
Enterprise Coal Co., No. 1.....	1	1						1	
Enterprise Coal Co., No. 2.....		1			1			1	
Mystic Coal Co.....	1	1						1	
Anchor Coal Co.....								1	

ADAMS COUNTY.

Rimley & Selby.....	1								
Carbon Coal Co.....	1				1				
Jones & Bro.....	1				1				
Gobbie & Kearns.....	1		1						
Methodist Church Mine.....	1								
Wilds & Barker.....	1								
Brittan & Brooks.....	1		1	1				1	
Richard Briseoe.....	1	1							
Samuel Powell.....	1				1				
William Hartshorn.....	1								
George Hardin.....	1				1				

IMPROVEMENTS MADE IN THE MINES—CONTINUED.

CASS COUNTY.

NAMES OF MINES.	Air shafts.	Second openings.	Stairway.	Covers on cages.	Safety catches.	Safety gates.	Furnaces.	Fans.	Brakes on drums.
James Burdick.....		1							

JEFFERSON COUNTY.

Jefferson County Coal Co.....	1	1							
John F. McGregor.....	1								
George Bates.....									

LUCAS COUNTY.

Whitebreast Fuel Co., No. 3.....	1	1		1	1	1		1	1
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MONROE COUNTY.

Pleasant Valley Coal Co.....	1								
Fredric Mine.....					1				
Chisholm Mine.....	1								
Smoky Hollow Mine.....	1	1							

MARION COUNTY.

Whitebreast Fuel Co.....	1								
Oak Hill Mine.....	1								
Atlas Coal Co.....					1				
La Boudinot.....	1					1			
William Gamble.....	1	1				1			
William Lewis.....	1	1							
R. Brecht.....									1
Prairie Creek Coal Co.....	1								
H. R. Boudinot.....	1								
Marion County Coal Co.....			1			1			

TAYLOR COUNTY.

H. C. Mackley.....	1								
William A. Tilley.....	1								
William Hean.....					1				
Roderic Campbell & Son.....	1								

IMPROVEMENTS MADE IN THE MINES—CONTINUED.

VAN BUREN COUNTY.

NAMES OF MINES.	Air shaft.	Second opening.	Stairway.	Covers on cages.	Safety catches.	Safety gates.	Furnaces.	Fans.	Brakes on drums.
Ketchum & Bros.....	1	1					1		
Carson & Walker.....	1	1							
George Finlin.....	1	1							

WAPELLO COUNTY.

Wapello Coal Co., No. 1.....	1						1		
Wapello Coal Co., No. 4.....	1	1					1		
Wapello Coal Co., No. 5.....	1						1		
Phillips' Coal Co., No. 2.....								1	
Hawkeye Coal Co.....	1	1	1	1				1	1
John Vanderpool.....	1								
William Baker.....	1	1		1				1	
Rolla Goodin.....	1	1							
Daniels & Graham.....				1					
William Bennett.....	1	1							
Wagner & Bro.....									1

WAYNE COUNTY.

Occidental Coal Co.....			1					1	
Thomas Burland.....		1							
B. F. Burns.....		1		1	1				
Lewis Fry & Co.....		1			1				

WARREN COUNTY.

D. K. Jones.....	1		1						
William Bennum.....	1								
D. W. Simmons.....	1								
Lumsden & Bro.....								1	

During the last two years the mines in the First District have been visited as often as possible, but owing to the district being so large, the visits have been too few and far between, and when any orders were given, or any improvements ordered done, they were not completed as soon as they would have been if the visits could have been repeated in reasonable time; but the number of improvements shows that considerable has been done considering the dullness of the coal trade during the last year, as most of the mines in this district have not run more than half time, and some of them not so much. The number and kind of improvements are as follows: Air shafts, 25; second openings, 42; stairways, 15; covers on cages, 13; safety catches, 15; safety gates, 6; furnaces, 14; fans, 9; brakes on drums, 8. There are several new mines which are just opening up that have not yet applied any of the above named improvements, but will do so as soon as possible.

THOMAS BINKS,
Inspector First District.

EMBL/ACTING

KEOKUK, MAHASKA, JASPER, HARDIN AND SCOTT
COUNTIES.

JAMES GILDROY, INSPECTOR.

BIENNIAL REPORT.

To his Excellency, WILLIAM LARRABEE, Governor of Iowa:

SIR—In compliance with the requirements of the mining laws of Iowa, I have the honor to submit my report of the mines for the term ending June 30, 1889.

I will in this report endeavor to give a summary of the work completed, together with a list of all accidents reported from in and about the mines, and any other matter pertaining to my official duties.

The past season has been very hard on the coal mining industries of the Second Inspection District. Owing doubtless to the extraordinary mild winter, many of the miners have been compelled to leave their homes to seek employment elsewhere. This being especially so at What Cheer, where three of the What Cheer Coal Company's mines were on the decline, and the new mines not being ready to receive the men as their places gave out at the old mines. For reasons similar as above, the Crescent Coal Company's two shafts almost shut down in the middle of the season, and nearly four hundred men thrown out of employment at these mines alone.

But the future prospects for this mining centre are very encouraging, as the coal fields here are by no means exhausted, outlying beds having been discovered, and proven to be equal to the best of Iowa coal, where previous boring reported no coal.

LITIGATION.

In one case I found some difficulty of enforcing section 14, chapter 21, 1884; the attorney refusing to act according to the meaning and intent of the law, and should any accident have occurred through such a procedure, the Mine Inspector could not have been held responsible. On the 25th of April, 1889, I had occasion to apply for a writ of injunction against one of the mines; the attorney took my deposition, but at the same time informed me that the coal company, or their

agents, would have to have a hearing before the judge before writ could be granted. In vain I tried to dissuade him from taking such a course, advising him that said coal company had been duly notified.

May 3d, I received a notice from attorney to appear next day at county seat to have a hearing before the court; also a request to go and visit the mine before I appeared. To this latter request I certainly did object. However, I arrived at the place appointed and was again informed by attorney that the judge was not at home, and he could not give me any definite time when he would be at home.

By this time the coal company's officers had arrived, and by agreement I visited their mine, after a lapse of ten days from application for writ. Here I agreed with all parties interested, mine agents, miners, and myself, to allow the mine to run, providing that all reasonable means were used to put the mine in order to comply with the law.

The mine officers have up to this time, July 23, 1889, done all that they could towards fulfillment of their part of the agreement.

STRIKES.

There has been one strike, or rather a lock-out, which occurred in the spring of 1888, previous to the contract system being presented for the miners to sign. This was at the Valeria and Black Heath mines, Colfax, Jasper county. More than this, there has been no serious disturbance or complaints between operators and miners of the Second District.

PROSPECTIVE OF COUNTIES.

MAHASKA COUNTY.

This is the banner coal county of the State of Iowa. There are eleven railroad and seventeen local mines working in the county, and containing the most extensive developed and undeveloped area of coal deposits in the State. Two of the great mines at Excelsior are on the decline, but the same company have large areas of coal already prospected and proven to be equal to the best of the State, both in quality and thickness and easy of access.

The Oskaloosa Coal Company have also proven large areas of good workable coal, and are contemplating to open out new works in the near future.

The American Coal Company have an extensive coal field, which will require many years to exhaust. The extent of their underground roadways will aggregate many miles, and the managers are contemplating the application of electricity as their motive power.

The Consolidation Coal Company at Muchachinock, with their extensive ramifications and long lines of underground railroads, is also intending to supplant the mule by electricity.

All of the above coal companies endeavor to excel in having their mines equipped with all of the latest modern improvements.

KEOKUK COUNTY.

What Cheer is the center of the coal fields in this county, and from this location the coal fields extend in all directions, especially to the westward, where the What Cheer Coal Company have developed extensive areas of coal. This company has introduced the Harrison coal mining machines into some of their mines, of which seventeen have been in use the past year, and fourteen are ordered for their new No. 2 mine. The work being done by these machines has been entry driving, and are as yet experimental; but they have clearly demonstrated their superiority over pick-mining for entry work, and it will be safe to say that they have come to stay. There has been some complaints here in regard to transportation facilities, but it is quite evident that there were other factors tending toward the depression of the coal industries at this point. The Crescent Coal Company's mines are better prepared than ever before for a large output of coal, and the same conditions apply to most of the other mines, and all things considered, the future prospect for What Cheer is most encouraging. There are eight railroad and fifteen local mines in the county, five of which partly ship on railroad.

JASPER COUNTY.

There are six railroad and fifteen local mines at work in this county, the location and brief description of which are given on another page. The most prominent are the Valeria, Couch, and Jasper County Railroad & Mining Company.

SCOTT COUNTY.

There are six local mines in this county. See "Location and Description of Mines."

ACCIDENTS.

There have been thirty fatal and sixty-four non-fatal accidents during the two years; nearly thirty-two per cent of which were caused by the falling of slate, in the working-faces of the mines. And with our present system of working, the miners themselves are responsible for their own safety in the face of their respective places. The increase of fatal accidents is largely due to the great amount of pillar working at many of the mines, as at No. 5, Muchachinock, Excelsior, and What Cheer. But at some of our mines there is some very bad propping done: such as props blown out by shots, and not replaced before commencing to load coal; and often the props set up with a sharp point at both ends, thus, instead of being a safeguard, they are a mere trap. Another bad practice is to have miners come out of the mines to sort and carry their props some distance to the pit-mouth before they can get any timber to make their places safe. There ought to be kept a sufficient supply of timber in every entry of a mine at all times. However, this is not the practice at all of the mines, and at the end of these pages will be found such suggestions to the legislature as we deem proper to remedy those evils.

Since I commenced on my official duties, I have visited all the mines in the Second District, from two to ten times. Some visits have not been reported, as I deemed it unnecessary to do so. I am glad to report that with one or two exceptions, the mines in this district have been greatly improved in their sanitary conditions and otherwise; and in those mines where the management have been hitherto slow in complying with the law, they are showing a good disposition to comply and improve their mines. I have endeavored to show that there is nothing to be gained by inadequate ventilation, but to the contrary, as coal mining cannot be successfully accomplished without a vigorous current of air passing through the mine. Here I would ask all miners and mine managers, who desire to improve their knowledge on mines and mining, to think seriously on this matter.

The following summaries are presented for the fourth biennial report for District No. 2:

Total number of miners.....	3,156
Total number of day hands in and about the mines.....	871
Total number of employees.....	4,027
Number of tons of coal produced.....	3,519,871
Number of fatal accidents.....	30
Number of non-fatal.....	64
Total number of accidents.....	94
Number of employees to each fatal accident.....	134
Number of employees to each non-fatal accident.....	62
Number of tons of coal produced to each fatal accident.....	117,329
Number of tons of coal produced to each non-fatal accident.....	54,908
Total number of tons ending 1888.....	1,974,352
Total number of tons ending 1889.....	1,545,509

LIST OF FATAL ACCIDENTS.

STATE OF IOWA, }
Mahaska County. }

An inquisition holden at Muchachinock, in Mahaska county, on the 23d day of December, 1887, before J. C. Barringer, coroner of said county, upon the body of Ed. Dolphus, there lying dead, by the jurors whose names are hereunto subscribed. The said jurors, upon their oaths do say, that Ed. Dolphus came to his death by going into a room where he had lighted three shots, two of which had exploded, and the third went off just as he went to examine it; throwing the coal against his head, face and body, and killing him in about thirty minutes. Said accident happened in room No. 4, "R" entry, Mine No. 5, Consolidation Coal Co.'s mine, Muchachinock, about 6 o'clock, p. m., on December 21, 1887.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

JAMES A. RICE,
D. W. COWHAN,
J. A. COFFIN.

Attest:

J. C. BARRINGER, Coroner of Mahaska County.

STATE OF IOWA, }
Mahaska County. }

An inquisition holden at Muchachinock, in Mahaska county, on the 9th day of November, A. D. 1887, before J. C. Barringer, coroner of said county,

upon the body of Emanuel Carr, there lying dead, by the jurors whose names are hereto subscribed. The said jurors, upon their oaths do say, that said Emanuel Carr came to his death by an accidental fall of slate in room No. 13, entry "B." Mine No. 5, Consolidation Coal Co.'s mine, Muchachinock, Iowa, November 9, 1887.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

JOHN F. GUNN,
H. L. HATCHER,
DANIEL DAVIS.

Attest:

J. C. BARRINGER, *Coroner of Mahaska County.*

At Excelsior, Mahaska county, Iowa, July 8, 1887, Meek Holaska was killed by the explosion of a boiler, at Excelsior Coal Co.'s mine.

At Delta, Keokuk county, Iowa, October 27, 1887, Henry Stokeslegh was killed by a fall of slate at the Black Diamond Mine, Olive Bros., proprietors.

At Muchachinock, Mahaska county, Iowa, October 25, 1887, Charles Sequest was killed in his room by a fall of slate, in No. 5, Consolidation Coal Co.'s mine.

At What Cheer, Keokuk county, Iowa, November 7, 1887, Alex. Clark was killed while mining off a standing shot in What Cheer Coal Co.'s "D" mine.

At What Cheer, Keokuk county, Iowa, November 25, 1887, R. F. Hauk was killed by the ascending cage striking his head, at Crescent Coal Co.'s No. 2 mine; the result of carelessness.

At Oskaloosa, Mahaska county, Iowa, December 6, 1887, one Hartgraves, a miner, was killed while returning to an unexploded shot, at the Guthrie mine.

At Black Heath mine, Colfax, Jasper county, Iowa, January 21, 1888, Thomas Bright was killed in his room by a fall of slate.

At Excelsior, Mahaska county, Iowa, April 16, 1888, J. B. Niles was killed by a fall of slate in the face of his room.

At Muchachinock, Mahaska county, Iowa, January 11, 1888, James Drummond, age 16 years, was killed by falling down No. 5 shaft, Consolidation Coal Co.'s mine.

At What Cheer, Keokuk county, Iowa, February 13, 1888, John Frammel was killed in shaft "F" by a fall of slate; What Cheer Coal Co.'s mine.

At Oskaloosa, Mahaska county, Iowa, April 16, 1888, James Hartgraves was killed in the face of his room by a fall of slate; Western Fuel Co.'s Standard mine.

At What Cheer, Keokuk county, Iowa, February 11, 1888, Robert Green Halsh was killed by a blow from a door striking him on the head, the door being struck on the opposite side by a loaded car, at Crescent Coal Co.'s No. 2 mine.

At What Cheer, Keokuk county, Iowa, May 24, 1888, Samuel Crawford was killed by a premature explosion of a shot in Crescent Coal Co.'s No. 2 mine.

At What Cheer, Keokuk county, Iowa, August 28, 1888, Hugh Ried and John Ried, father and son, aged 69 and 42 years, were killed while mining off a standing shot, the coal falling and causing the accident, in What Cheer Coal Co.'s shaft "A."

At Beacon, Mahaska county, Iowa, September 10, 1888, John Wickelberry, miner, was killed while mining off a standing shot at Beacon Coal Co.'s mine.

At What Cheer, Keokuk county, Iowa, October 25, 1888, John Dixon was killed by falling down No. 3 shaft, What Cheer Coal Co.'s mine.

At Muchachinock, Mahaska county, Iowa, December, 1888, Chas. Peterson was killed on railroad track at Consolidation Coal Co.'s No. 6 mine.

STATE OF IOWA. }
Mahaska County. }

An inquisition holden at Garfield township, in Mahaska county, on the 5th day of July, A. D. 1888, before J. C. Barringer, coroner of said county, upon the body of Francis L. Frang, there lying dead, by the jurors whose names are hereto subscribed. The said jurors, upon their oaths do say, that said Francis L. Frang came to his death by looking down shaft No. 6, Consolidation Coal Co.'s mine, in Garfield township, while the cage was running, and being caught between the cage and the side of shaft, and instantly killed; said accident happened about 9:30 o'clock, A. M., on Thursday, July 5, 1888. And we further find that said accident was due alone to the fact that deceased was looking down the shaft while the cages were in motion, and no one is to blame for the accident.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

C. H. PHELPS,
J. P. HIATT,
R. P. STEDDOM.

Attest:

J. C. BARRINGER, *Coroner of Mahaska County.*

STATE OF IOWA. }
Mahaska County. }

An inquisition holden at Evans, Mahaska county, on the 26th day of September, A. D. 1888, before J. C. Barringer, coroner of said county, upon the body of Charles Anderson, there lying dead, by the jurors whose names are hereto subscribed. The said jurors upon their oaths do say, that said

Charles Anderson came to his death in room No. 14, O. X. entry No. 2, American Coal Co.'s mine, at Evans, Iowa, about 12 o'clock, A. M., on Tuesday, September 25, 1889, by a shot fired from room No. 12, on same entry; said shot passing through room No. 13, and killing deceased, who was probably standing in the brake-trough between Nos. 13 and 14. We further find no one is to blame for the accident.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

L. J. ALLEN,
J. B. CRUZEN,
E. H. LE SUEUR.

Attest:

J. C. BARRINGER, *Coroner of Mahaska County.*

STATE OF IOWA, }
Mahaska County. }

An inquisition holden at Excelsior, in Mahaska county, on the 12th day of January, A. D. 1889, before J. C. Barringer, coroner of said county, upon the body of John Bolden, there lying dead, by the jurors whose names are hereto subscribed. The said jurors, upon their oaths do say, that said John Bolden came to his death by being run over by a loaded trip coming out of Mine No. 2, Excelsior Coal Co.'s mine, in Spring Creek township, about 2 o'clock, P. M., on Friday, January 11, 1889. As there was plenty of room to pass the trip at any point near where the body was recovered, we are unable to account for how the accident happened.

In testimony whereof, the said jurors have hereunto set their hands, the day and year aforesaid.

CHAS. V. HOFFMAN,
L. J. ALLEN,
L. T. SHANGLE.

Attest:

J. C. BARRINGER, *Coroner of Mahaska County.*

STATE OF IOWA, }
Mahaska County. }

An inquisition holden at Mine No. 7, Consolidation Coal Co.'s mine, in Spring Creek township, Mahaska county, on the 16th day of February, A. D. 1889, before J. C. Barringer, coroner of said county, upon the body of Titus Crosby, there lying dead, by the jurors whose names are hereto subscribed. The said jurors, upon their oaths do say, that said Titus Crosby came to his death by falling down the shaft of said Mine No. 7, after returning from emptying a bank car full of dirt, said car also falling with him; said accident happened about 7:15, P. M., of Friday, February 15, 1889. We further find that do one is to blame for said accident.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

F. D. MORRISON,
DANIEL DAVIS,
JAMES A. RICE.

Attest:

J. C. BARRINGER, *Coroner of Mahaska County.*

STATE OF IOWA, }
Mahaska County. }

An inquisition holden at Excelsior, Mahaska county, on the 21st of May, 1889, before J. C. Barringer, coroner of said county, upon the body of Andrew Crehrell, there lying dead, by the jurors whose names are hereto subscribed. The said jurors, upon their oaths do say, that said Andrew Crehrell came to his death in room No. 13, 13th west entry, north side, No. 2 mine, Excelsior Coal Co.'s mine, in Spring Creek and West Harrison townships, on Monday, May 20, 1889, about 2 o'clock, P. M. From the evidence before us we are of the opinion that Wm. Hemans, Mick Crehrell (father of deceased), and deceased himself, had neglected to replace a number of props which had been blown out by the shot at noon, leaving the false roof unprotected, in consequence of which it fell, causing the accident.

In testimony whereof the said jurors have hereunto set their hands the day and year aforesaid.

L. J. ALLEN,
J. B. CRUZEN,
R. P. STEDDOM.

Attest:

J. C. BARRINGER, *Coroner of Mahaska County.*

STATE OF IOWA, }
Mahaska County. }

An inquisition holden at Excelsior, Mahaska county, on the 25th day of June, 1889, before J. C. Barringer, coroner of said county, upon the bodies of William Nelson, Christopher Grant and Samuel Bawden, there lying dead, by the jurors whose names are hereto subscribed. The said jurors upon their oaths do say that said Christopher Grant, Samuel Bawden and William Nelson came to their death about 4:20 o'clock, P. M., on Monday, June 24th, 1889, by a fall of slate in room No. 10, shaft No. 2, north side, 14 left west entry, Excelsior Coal Co.'s mine, in Spring Creek and West Harrison townships. We further find that deceased were careful and experienced miners; that the Excelsior Coal Co. used all due diligence to avoid accident; that this fall of slate was entirely accidental, and that no person is to blame for the same.

In testimony whereof, the said jurors have hereunto set their hands the day and year aforesaid.

JAMES A. RICE,
J. N. HORSLEY,
ED. S. HOWARD.

Attest:

J. C. BARRINGER, *Coroner of Mahaska County.*

STATE OF IOWA, }
Jasper County. }

An inquest holden at the coal banks of Cook & Carr, in Washington township, Jasper county, on the 11th day of February, 1889, before J. T. Robinson, coroner of said county, upon the body of George Hopper, there lying dead, by the jurors whose names are hereto subscribed. The said jurors,

after having heard the evidence and examined the said body, we do find that the deceased came to his death by the unavoidable breaking of the attachment of the cage, and with him falling to the bottom of the shaft, inflicting a mortal wound, that of dislocating his neck, across the beam below, on which the said jury do find, caused the immediate death of said person, whose body was found aforesaid.

C. W. SCHAEFER,
WILLIAM PITCHARD,
N. W. SEE.

Attest:
J. T. ROBINSON, *Coroner of Jasper County.*

REMARKS: William Reynolds was killed at the same time with the above John Hopper.

NON-FATAL ACCIDENTS, SECOND DISTRICT, ENDING JUNE 30, 1888.

DATE.	NAME AND RESIDENCE.	FIRM.	CAUSE OF ACCIDENTS, ETC.
1887.			
July	8 Samuel Sport, Excelsior.	Excelsior Coal Company.	Explosion of boiler.
July	8 Gust Thompson, Excelsior.	Excelsior Coal Company.	Explosion of boiler.
July	19 James Holliday, Excelsior.	Excelsior Coal Company.	Crushed between coal cars.
July	19 Grant Steward, Excelsior.	Excelsior Coal Company.	Leg broken by fall of slate.
July	19 Thomas Mooney, Excelsior.	Excelsior Coal Company.	His body hurt by car jumping track.
October	19 Joseph Burdick, Excelsior.	Excelsior Coal Company.	Right leg broken while mining loose coal.
October	19 Nelson Johnson, Excelsior.	Excelsior Coal Company.	Back injured by falling of slate.
December	19 John Portugal, Excelsior.	Excelsior Coal Company.	Injured by falling under loaded cars.
July	6 Lewis Gibson, Excelsior.	Excelsior Coal Company.	Back injured by fall of slate.
October	22 J. G. Mack, What Cheer.	What Cheer Coal Company.	Back injured and two fingers cut off by coal cars.
September	13 John Trimble, What Cheer.	What Cheer Coal Company.	Fingers broken and hand hurt—caught in chute.
October	17 W. J. Meed, What Cheer.	What Cheer Coal Company.	Ankle dislocated and leg hurt by cars.
December	3 Thomas Jates, What Cheer.	Crescent Coal Company.	Arm broken by falling slate.
July	2 John Longdon, Colfax.	Black Heath Coal Company.	Injured by fall of slate.
October	11 Will Cartwright, Muchachinock.	Black Heath Coal Company.	Leg broken by coal cars.
December	6 Clarence Brown, Muchachinock.	Black Heath Coal Company.	Face and hands burned by drilling out a shot.
July	2 V. Reiger, Colfax.	Black Heath Coal Company.	Leg broken by a fall of slate.
1888.			
January	10 John Corbit, Excelsior.	Excelsior Coal Company.	Ankle and side hurt by falling slate.
January	10 — Corbit, Excelsior.	Excelsior Coal Company.	Both legs broken by falling slate.
February	21 William Seward, What Cheer.	What Cheer Coal Company.	Falling slate; seriously hurt.
March	21 Robert Wyzer, What Cheer.	What Cheer Coal Company.	Falling slate; seriously hurt.
April	14 John Pequest, What Cheer.	What Cheer Coal Company.	Falling coal; ankle injured.
April	14 D. Organ, What Cheer.	What Cheer Coal Company.	Collar bone broken; mining off a shot.
June	2 William Strahley, What Cheer.	What Cheer Coal Company.	Both bones in right arm broken seriously, drilling a shot.
June	3 Gus Erickson, Colfax, Valeria.	Black Heath Coal Company.	Had his ribs broken by a fall of slate.
June	6 John Peterson, Colfax, Valeria.	Black Heath Coal Company.	Ankle injured by the fall of cage.
June	28 A. W. James, Colfax, Valeria.	Black Heath Coal Company.	Head crushed; caught by cars at bottom of slope.
February	11 John Reister, What Cheer.	Crescent Coal Company.	Back dislocated; died from effects; by falling slate.
June	18 Lewis Vasudine, What Cheer.	Crescent Coal Company.	Seriously hurt by a fall of slate.
June	28 J. Crouch, What Cheer.	What Cheer Coal Company.	Injured by explosion of powder.
June	28 Richard Culp, What Cheer.	What Cheer Coal Company.	Arm broken by coupling cars.
April	13 John Johnson, Excelsior.	Excelsior Coal Company.	Back injured by fall of slate.
May	14 John Daniels, Muchachinock.	Consolidation Coal Company.	Had his leg broken by fall of slate.
June	7 F. Westergreen, Fishville.	Mahaska Coal Company.	Injured neck and shoulder by shot blown through ribs.
June	17 Walter Nichols, Fishville.	Mahaska Coal Company.	Seriously injured by fall of slate.

NON-FATAL ACCIDENTS, SECOND DISTRICT, ENDING JUNE 30, 1889.

DATE.	NAME AND RESIDENCE.	FIRM.	CAUSE OF ACCIDENTS, ETC.
1888.			
July	15 Von Bouchet, Valeria Coal Mines	Valeria Coal Company	Injured by an explosion of powder.
August	2 Eli Crodriever, Valeria Coal Mines	Valeria Coal Company	Injured by a fall of slate in entry.
July	17 Layman Treat, Valeria Coal Mines	Valeria Coal Company	Arm broke by fall of slate while overseeing the work.
August	29 Andrew Johnson, Valeria Coal Mines	Valeria Coal Company	Leg injured by fall of coal while undermining shot.
September	18 S. E. West, Oskaloosa	Standard Mine	Leg broken by fall of slate.
September	27 Fielding Lewis, Muchachinook	Consolidation Coal Company Mine	Injured while mining off his shot.
November	13 John P. Larson, Muchachinook	Consolidation Coal Company Mine	Injured by taking down slate; slate fell on him.
November	15 W. B. Johnson, Muchachinook	Consolidation Coal Company Mine	Hurt by coal falling from ear onto his foot.
November	3 James Dooley, What Cheer	Crescent Coal Company, No. 1	A limb fractured by car jumping track.
November	14 John Ritchey, What Cheer	What Cheer Coal Company, No. 2	Right arm and left leg broken by fall of coal.
November	21 George Hightles, Excelsior	Excelsior Coal Company, No. 3	A leg broken by undermining a shot.
November	19 Morgan Jones, Excelsior	Excelsior Coal Company, No. 3	His back injured by a fall of slate.
December	5 H. L. Warton, Oskaloosa	Oskaloosa Coal Company's Mine	His back injured by a fall of slate.
December	20 Burt Tallman, Delta	Kelster Mine	Injured by a fall of slate.
1889.			
January	3 Daniel Edwards, Valeria Coal Mines	Valeria Coal Company	Seriously injured by fall of slate.
February	11 George Hopper, Mitchell Coal Mine	Cook & Carr	Seriously hurt by falling down shaft 95 feet deep.
January	2 Henry Hunter, Excelsior	Excelsior Coal Company	His thumb cut off; caught between coal and car.
May	20 Mitchell Crehrell, Excelsior	Excelsior Coal Company	Seriously injured; since died from effect; fall of slate.
January	29 A. Graves, Fishville	Mahaska Coal Company	Injured by being caught by a loading trip of cars.
February	15 F. Ledergergreen, Fishville	Mahaska Coal Company	His shoulder dislocated by a fall of coal.
June	11 Martin Savine, Fishville	Mahaska Coal Company	His ribs broken by returning too soon to his shot.
February	27 Chas. Olson, Oskaloosa	Oskaloosa Coal Company	His leg broken by a fall of slate.
April	26 John F. Cresky, What Cheer	What Cheer Coal Company	His leg broken by a fall of slate.
April	20 James Carr, What Cheer	Crescent Coal Company, No. 1	Injured shoulder and knee by fall of clay.
May	28 W. Reeves, Muchachinook	Consolidation Coal Company	Injured by a fall of coal while mining off a shot.
June	15 A. Furtune, Muchachinook	Consolidation Coal Company	His leg broken by jumping out of a car.

[1889.]

REPORT OF STATE MINE INSPECTORS.

81

RECAPITULATION OF FATAL ACCIDENTS FOR TWO YEARS, ENDING JUNE 30, 1889.

By returning prematurely to shots.	3
By boiler explosion.	3
By mining off standing shots.	2
Caught by cages in motion.	4
By falling down shaft.	4
Accidents with cars.	4
By falling slate.	2
By being struck with a door.	11
Total fatal accidents.	39

RECAPITULATION OF NON-FATAL ACCIDENTS FOR TWO YEARS, ENDING JUNE 30, 1889.

By returning prematurely to shots.	1
By boiler explosion.	2
By explosion of powder.	2
By mining off shots.	9
By drifting out shots.	9
By dropping of cage.	2
By coming in contact with cars.	1
By falling down shaft.	11
By shot blown through pillar.	2
By falls of clay and coal.	2
By falls of slate.	3
By coal chute.	29
Total non-fatal accidents.	65
Total fatal accidents.	39
Total number of accidents.	104

IMPROVEMENTS MADE IN THE MINES OF DISTRICT No. 2, FROM JUNE 30, 1888, TO JUNE 30, 1889.

KEOKUK COUNTY.

NAMES OF MINES.	Air shafts.	Escape shafts.	Covers on engines.	Safety catches.	Safety gates.	Furnaces.	FANS.	Ropes.	Drum brakes.
Crescent Coal Co., No. 2.....					1		1		
Crescent Coal Co., No. 1.....		1					1	2	
What Cheer Coal Co., No. 1.....	1	1					1		
Standard.....									1

MAHASKA COUNTY.

Burgess Mine.....		1					1		1
Fishville Mine.....		1						2	
Excelsior.....									
Consolidation Coal Co., Mucha- nock, Nos. 6 and 7.....	2	2	2			2	4	2	
D. Reigel Shaft.....				1	1				
Mitchellville Shaft.....									

SCALE TESTING.

Chapter 54, Section 2, Laws of 1888, providing standard balances, etc., for the testing of scales at the mines:

On November 29, 1888, I received the above described standards, balances, etc. On November 29, 1888, I received a notice to test the scales at Draper mines, Jasper county, Iowa. I proceeded to the mine at once and tested said scales, and found said scales in a very unfit condition to weigh. The manager had said scales adjusted forthwith.

October 19, 1888, the miners at Crescent Coal Co.'s No. 1 and No. 2 mines requested that I would test the scales at those two mines. A ton of fifty pound weights had been procured for that purpose. The scales at No. 1 proved to be correct; and the scales at No. 2—one proved to be correct, but the other incorrect. The miners agreed not to interfere with the incorrect scales so long as the weighman and check weighman were not changed. I informed the manager of the mines of this result, and he promised to have said incorrect scales adjusted.

November 9, 1888, tested Star Coal Co.'s scales at Colfax, Jasper county, Iowa, and found said scales correct.

May 16, 1888, tested scales at Fishville mine, Mahaska county, Iowa, and found scales correct.

NEW MINES OPENED.

COUNTIES.	NUMBER.	
	Railroad.	Local.
Keokuk.....	3	5
Mahaska.....	2	3
Jasper.....	1	1
Scott.....		2
Total.....	8	11

OLD MINES ABANDONED.

COUNTIES.	NUMBER.	
	Railroad.	Local.
Keokuk.....	3	1
Mahaska.....	2	
Scott.....		1
Total.....	6	2

NAMES AND DESCRIPTION OF MINES IN DISTRICT No. 2.

KEOKUK COUNTY.

STANDARD MINE.

Located at What Cheer. This mine is operated by Robert Hughes; shaft forty-five feet deep; thickness of coal, from four and a half to six feet; ship coal on Northwestern Railroad; ventilating motor, steam jet; employs in winter about forty-five men.

WHAT CHEER COAL CO.'S No. 1.

Thickness of coal from four to six feet; depth of shaft, fifty-five feet; ventilating motor, fan; plan of working, double entry system. The Harrison machines are used in this mine for entry driving.

JAMES LYTLE,
Underground Manager.

WHAT CHEER COAL CO.'S No. 2.

This mine is located two miles west of What Cheer, where the company expect to have a large area of good coal. Some very fine machinery is placed at this mine, with a battery of five boilers. Here, also, the Harrison machines are in general use. Depth of shaft, 126 feet; ventilating motor, fan; plan of working, triple entry from shaft bottom, with double entry started from this base; ventilating motor, fan.

JOHN BUSTED,
Underground Manager.

WHAT CHEER COAL CO.'S No. 3 SHAFT.

This shaft is operated entirely by the Harrison machines; no pick miners employed. Depth of shaft, 120 feet; thickness of coal from five to six feet; fan ventilation.

WILLIAM WILSON,
Underground Manager.

WHAT CHEER COAL CO.'S SHAFT, "A."

This is an old shaft, where they are drawn out by the pillars, and has been one of the best in What Cheer. Thickness of coal, from six to eight feet; shaft, seventy-five feet deep; ventilation, fan.

JOHN BUSTED,
Pit Boss.

WHAT CHEER COAL CO.'S SHAFT, "D."

Depth of shaft, eighty feet; thickness of coal, five and a half feet; ventilation, fan. This mine is about finished.

L. WHITE,
Pit Boss.
E. W. TRESCOTT,
General Manager.

WHAT CHEER CRESCENT COAL CO.'S No. 1 SHAFT.

Depth of shaft, seventy-eight feet; thickness of coal, from five to ten feet; plan of working, double entry system; ventilation, fan.

WILLIAM GREEN HALSH,
Pit Boss.

WHAT CHEER CRESCENT COAL CO.'S SHAFT, No. 2.

Depth of shaft, 109 feet; thickness of coal, five to seven feet; ventilation, fan; plan of work, double entry system.

ROBERT GREEN HALSH,
Pit Boss.
CHARLES DOLE,
Superintendent.

WHAT CHEER KEYSTONE COAL CO.'S SHAFT.

Depth of shaft, forty-nine feet; thickness of coal, six feet; ventilation, steam exhaust.

SAMUEL PASCOE,
Proprietor.

WHAT CHEER BLATT MINE.

This is a small mine, employing six miners in winter. Depth of shaft, forty-five feet; thickness of coal, five and a half feet; ventilation, natural.

JOHN BLATT,
Proprietor.

WHAT CHEER JOHN MORGAN MINE.

Is a slope, operating for local trade, employing eight miners in winter. Thickness of coal, five and a half feet; ventilation, natural.

JOHN MORGAN,
Manager.

WHAT CHEER CHEW & COCHRAN'S SHAFT.

This mine is operated for local trade. Depth of shaft, fifty feet; thickness of coal, four and a half feet; ventilation, natural.

CHEW & COCHRAN,
Managers.

WHAT CHEER—NEAL ROWLEY.

This is a small mine, operating for local trade. No one at the mine when visited; shaft and gin.

NEAL ROWLEY & SONS,
Proprietors.

WHAT CHEER—W. B. ARMSTRONG'S SHAFT.

This is a new opening. Depth of shaft, forty-one feet; thickness of coal, six feet; ventilation by exhaust steam.

JOHN DONOVAN,
Pit Boss.

NORTH STAR MINE.

This mine is located two miles north by east of What Cheer, and is a new opening. Shaft, 108 feet deep; thickness of coal, six feet; winding coal with horse and gin.

MICHAEL GIVEN & JOHN FARLEY,
Managers.

PIONEER COAL CO.'S SHAFT, AT THORNBURG.

This mine is located at the above town, about five miles north by east of What Cheer. Shaft, 110 feet deep; thickness of coal, seven feet. Is a new opening, and will hoist with steam power.

CHARLES DACK,
Manager.

BEN ROWLEY'S MINE, AT SIGOURNEY.

Is a slope operated for local trade. Coal is five feet, employing from nine to ten miners in winter.

BEN ROWLEY,
Manager.

MARTIN FISHER'S MINE, AT DELTA.

Is operated for local trade, also shipping on Rock Island Railroad. Shaft, fifty-six feet deep; hoist with horse and gin; thickness of coal, four and a half feet.

MARTIN FISHER,
Proprietor.

CORNWELL & CHANDLER'S MINE, AT DELTA.

Is operated for local trade, also shipping on Rock Island Railroad. Depth of shaft, forty feet; thickness of coal, four to five feet; employs seventeen miners in winter.

CORNWELL & CHANDLER,
Proprietors.

JAMES J. REISTER'S MINE, AT DELTA.

Is a drift, working in the crop of the coal. Thickness of coal, five feet; employs seven men in winter.

JAMES J. REISTER,
Pit Boss.

THOMAS TURNBULL'S MINE,

Near Packwood, Jefferson county, is a shaft operating for local trade. Depth of shaft, fifty feet; thickness of coal, four feet; employs five men in winter. There are two more small mines adjacent to this mine, employing altogether about ten men in winter.

MAHASKA COUNTY.

FISHVILLE MINE.

Mahaska Coal Co.'s mine. Is a slope, hoisting with steam power; thickness of coal, five and one half feet; ventilation, fan; shipping on the Chicago, Rock Island & Pacific Railroad.

JINKEN DAVIS,
Pit Boss.

R. E. HARRIS,
General Manager.

KNOXVILLE JUNCTION.

American Coal Co.'s mine. Is a slope, hoisting with steam power; thickness of coal, five and one half feet; ventilation, furnace. This is one of the great mines of the district, having a capacity of 1,000 tons per day. Ships on the Chicago, Rock Island & Pacific Railroad.

JOSEPH CHILTON,
Superintendent.

W. A. MCNEIL,
General Manager.

ROBERT WILSON,
Mine Boss.

BURGESS SHAFT.

Oskaloosa Coal Co.'s mine. Is a shaft eighty feet deep; thickness of coal, four to six feet; ventilation, fan; shipping on railroad.

JOHN RAMSEY,
General Manager.

L. C. GUTHRIE'S MINE.

Oskaloosa. Is a shaft 83 feet deep; thickness of coal, five to six feet; ventilation, fan; operated for local trade.

L. C. GUTHRIE,
Manager.

DANIEL REIGEL'S MINE.

Is a shaft sixty-five feet deep; thickness of coal, six feet; ventilation, natural; operating for local trade at Oskaloosa.

DAN REIGEL,
Manager.

SAMUEL SMITH'S MINE.

Is a shaft about sixty feet deep; thickness of coal, five and one half feet; operating for local trade at Oskaloosa.

SAMUEL SMITH,
Manager.

BENJAMIN EVANS' MINE.

Is a shaft sixty-one feet deep; thickness of coal, five feet; ventilation, natural; operating for local trade at Oskaloosa.

BEN. EVANS,
Manager.

JOHN LACEY'S MINE.

Is a shaft twenty feet deep; thickness of coal, three and one half feet; located one and one half miles west of Oskaloosa; operating for local trade; ventilation, natural.

JOHN LACEY,
Manager.

TERRY & RODGERS' MINE.

Is a slope, located one mile west of Oskaloosa; thickness of coal, four and one half feet; operating for local trade; ventilation, natural.

TERRY & RODGERS,
Managers.

J. BARROWMAN'S MINE.

Is a slope, located two and one half miles east of Oskaloosa; thickness of coal, from six to seven feet; ventilation, natural; operating for local trade.

J. BARROWMAN,
Manager.

WILLIAM HOOVER'S MINE.

Is a shaft, seventy-five feet deep; thickness of coal, seven feet; hoist with horse and gin; ventilation, natural; operating for local trade.

WILLIAM HOOVER,
Manager.

HARDIN MINE.

Is a slope, two miles east of South Muchachinock; thickness of coal, four to five feet; ventilation, natural. There are two slopes here, operated for local trade.

JAMES NEWELL,
Manager.

O. H. VANCE'S MINE.

Is a shaft, thirty feet deep; thickness of coal, four to five feet; ventilation, furnace; horse and gin hoist. This mine is located four miles south of Muchachinock. Local trade.

O. H. VANCE,
Manager.

CONSOLIDATION COAL CO.'S No. 5 MINE.

Is a shaft, 150 feet deep; thickness of coal, five to six feet; ventilation, fan. Coal shipped on the Chicago & Northwestern Railroad.

CONSOLIDATION COAL CO.'S No. 7 MINE.

Is a shaft, forty-five feet deep; thickness of coal, seven feet; ventilation, fan. This is one of the great mines of the district; it is fitted up with all the latest improvements in hoisting details, and has a capacity of 1,000 tons per day. Coal shipped on the Chicago & Northwestern Railroad.

CONSOLIDATION COAL CO.'S No. 6 MINE.

Is a shaft, 150 feet deep; thickness of coal, six to seven feet. This mine is adjoining the above mine, being one mile apart, east and west, and similar to the above mine, is equipped with all the modern appliances for rapid extraction of coal, having a capacity of 1,000 tons per day.

J. E. BUXTON,
General Manager.

EXCELSIOR COAL COMPANY'S MINE, No. 2.

Is a shaft eighty-two feet deep; thickness, five to six feet; ventilation by fan. The underground haulage has been very successful in these mines, conducted by good management, with tail-rope system. These mines have had the largest out-put of coal in the State; but having reached their boundary lines, are now drawing out the pillars, which may occupy two or more years.

EXCELSIOR COAL COMPANY'S MINE, No. 3.

Is a shaft sixty-five feet deep; thickness of coal from five to six feet; ventilation by fan.

Messrs. Robert Story and Crookshanks, pit bosses.

B. WRIGHTMAN,
GEO. H. RAMSEY,
Superintendents.

ROSE HILL MINE.

Is a shaft fifty-four feet deep; thickness of coal, five feet; ventilation, natural; operated for local trade.

GEORGE W. ARNOLD,
Manager.

BEACON MINE.

Is a slope; thickness of coal, four to five feet; ventilation by furnace; coal shipped on railroad.

SIMON PHILLIPS,
Manager.

A. A. HOOVER'S MINE.

Is a slope; thickness of coal, five and a half feet; ventilation by furnace; operated for local trade; located half mile east of Leighton.

A. A. HOOVER,
Manager.

ROBERT EVANS' MINE.

Is a drift; thickness of coal, five feet; ventilation, natural; operating for local trade; three miles east of New Sharon.

ROBERT EVANS,
Manager.

WILLIAM EVANS' MINE.

Is a slope; located about four miles north by east of New Sharon; the coal three to four feet thick; operating for local trade.

WILLIAM EVANS,
Manager.

R. WILLIAMS' MINE.

Is a shaft twenty-five feet deep; coal four and a half feet thick; ventilation, furnace; operating for local trade.

R. WILLIAMS,
Manager.

JASPER COUNTY.

D. S. COUCH'S MINE.

Is a shaft fifty-five feet deep; thickness of coal, five feet; ventilation, fan; ship coal on Northern Railroad; office, Colfax.

HENRY THOMAS,
Manager.

VALERIA AND BLACK HEATH COAL COMPANY'S SHAFT.

Is sixty-two feet deep; thickness of coal, five and one half feet; ventilation, by fan and furnace.

ANDY CARLSON,
Superintendent.

BLACK HEATH.

Is a slope; coal five feet thick; ventilation by furnace; ship coal on Northern Railroad; office, Colfax.

E. C. MOXHAM,
Superintendent.

STAR COAL COMPANY'S MINE.

Is a shaft sixty feet deep; coal from three to six feet thick; ventilation, fan; railroad mine; located near Colfax.

W. BURGESS,
Pit Boss.
E. C. COOPER,
Superintendent.

SCOTT SLAUGHTER'S MINE.

Is a drift; coal is from four to five feet thick; operating for local trade; ventilation, natural; located two miles below Colfax, on Skunk river.

SCOTT SLAUGHTER,
Manager.

W. W. ALLEN'S MINE.

Is a slope; adjacent to the above described mine; coal is from four to five feet thick; ventilation, natural.

W. W. ALLEN,
CHARLES BROTHERS,
Managers.

CARR & COOK'S MINE.

Is a shaft ninety-five feet deep; coal, four to four and one half feet thick; ventilation, natural; operating for local trade.

JESSE CARR,
Superintendent.

DRAPER MINE.

Located at Jasper County Coal and Railroad Company's Mines. This company has two shafts and one slope. Depth from surface to coal is thirty-five feet; thickness of coal, four feet; ventilation by fan; plan of mine, long-wall.

J. W. GILCHRIST,
Superintendent.

DAVID BRUCE MINE.

Is a slope; coal is three and one half feet thick; operating for local trade; located at Draper.

DAVID BRUCE,
Manager.

E. E. EDWARDS' MINE.

Is a slope; coal, four feet thick; ventilation, natural; operating for local trade; location, Draper.

E. E. EDWARDS,
Manager.

T. J. DANKS' MINE.

Is a slope; coal is three feet thick; ventilation, natural; trade, local.

T. J. DANKS,
Manager.

WILLIAM SNOOK'S MINE.

Is a shaft sixty-five feet deep; coal, four feet thick; ventilation, furnace; trade, local; location, Newton.

WILLIAM SNOOK,
Manager.

ALFRED LISTER'S MINE.

Is a shaft thirty feet deep; coal four feet thick; ventilation, furnace; trade, local; location, Newton.

ALFRED LISTER,
Manager.

ROBERT DAVIDSON'S MINE.

Is a shaft forty feet deep; coal four and one half feet thick; ventilation, by furnace; trade, local; location, Newton.

ROBERT DAVIDSON,
Superintendent.

ROBERT CARSON'S MINE.

Is a shaft forty feet deep; coal four and one half feet thick; ventilation, furnace; trade, local; location, Newton.

ROBERT CARSON,
Manager.

PETERS & WALKER'S MINE.

Is a shaft thirty-one feet deep; coal five feet thick; ventilation, natural; trade, local; location, Newton.

PETERS & WALKER,
Managers.

THOMAS HULL'S MINE.

Is a slope; coal four and a half feet thick; ventilation, natural; trade, local; location, three miles south by west of Prairie City.

THOS. HULL,
Proprietor.

BROWN & PRICE'S MINE.

Is a slope; coal four and a half feet thick; trade, local; location, three miles south of Prairie City.

BROWN & PRICE,
Managers.

SCOTT COUNTY.

SAMUEL JAMES' MINES.

Is a shaft, eighty-six feet deep; thickness of coal, two feet eight inches; ventilation, furnace; trade, local; location, four miles north of Buffalo.

No. 2 shaft is similar to the above described mine.

SAMUEL JAMES,
Proprietor.

C. J. ROWAN'S MINE.

Is a shaft eighty-two feet deep; coal two feet eight inches thick; trade, local; location, three miles north of Buffalo.

C. J. ROWAN,
Proprietor.

Felix Magtin and Robert Williams each have mines similar to the above described mines.

In Hardin county there are three shallow mines, worked in winter, employing altogether about five men. But as yet have not visited those places, as there is only a few tons of coal produced.

There has been frequent complaints from the miners of Mahaska and Jasper counties that the props or timber necessary for the safety of their respective working places, is not supplied to them, according to the meaning and intent of the law; and that they (the miners) have to sort and drag the props, in some cases for long distances, to the pit-mouth, before they can have such props sent into the mine; and on some occasions have to wait for days before the arrival of said props. And on one occasion I found every place in the mine without a sufficient supply of props, of which I had supplied before I left the place; the manager stating that the miners had not given their orders in proper time, and the law was so framed that they were to send down props only when so required.

Section 3, chapter 140, laws of 1886, makes it the duty of Inspectors to suggest or recommend to the legislature such amendments as they may deem proper for future legislation on the subject of mining. Therefore, I would respectfully suggest to the honorable members of the Twenty-third General Assembly, that section 18, chapter 140, laws of 1886, be so amended, with the words struck out, "Send down all such props when so required"; and insert, "Shall keep at all times as near the working-face as practicable, a sufficient supply of props of the proper length, and cut square at both ends, with caps or bars, as the places may require."

JAMES GILDROY,
Inspector Second District.

STATISTICS

OF

SECOND DISTRICT.

KEOKUK COUNTY,

NAME OF COMPANY OR FIRM.	POST-OFFICE ADDRESS.	CHARACTER OF PLANT.							
		Drift, slope or shaft.	Steam, horse or hand power.	Depth of coal below the surface.	Thickness of coal, in feet.	Longwall, room or pillar work.	Number of places of egress.	Ventilating—fan, furnace or otherwise.	
What Cheer C. Co. No. 1	What Cheer..	Shaft	Steam	50	5.5 R. P.	2	2	Fan	.....
B	What Cheer..	Shaft	Steam	120	5.5 R. P.	2	2	Fan	.....
G	What Cheer..	Shaft	Steam	80	5.5 R. P.	2	2	Fan	.....
A	What Cheer..	Shaft	Steam	70	6 R. P.	2	2	Fan	.....
F	What Cheer..	Shaft	Steam	65	6 R. P.	2	2	Fan	.....
Crescent Coal Co. No. 1	What Cheer..	Shaft	Steam	78	7 R. P.	2	2	Fan	.....
2.	What Cheer..	Shaft	Steam	100	6 R. P.	4	4	Fan	.....
Standard	What Cheer..	Shaft	Steam	47	5.5 R. P.	2	2	Steam	.....
Chew & Cochran	What Cheer..	Shaft	Steam	50	4.5 R. P.	2	2	Natural	.....
Keystone	What Cheer..	Shaft	Steam	47	7 R. P.	2	2	Furnace	.....
Thos. Turnbull	Packwood	Shaft	Horse	50	4.5 R. P.	2	2	Furnace	.....
W. C. Bennett	Packwood	Shaft	Horse	30	4.5 R. P.	2	2	Furnace	.....
Snyder	Packwood	Shaft	Horse	30	4.5 R. P.	2	2	Furnace	.....
Martin Fisher	Delta	Shaft	Horse	50	4.5 R. P.	2	2	Furnace	.....
Cornwall & Co	Delta	Shaft	Horse	40	4.5 R. P.	2	2	Furnace	.....
James Keister	Delta	Drift	Hand	45	4.5 R. P.	2	2	Natural	.....
John Blatt	What Cheer..	Shaft	Horse	45	4.5 R. P.	2	2	Natural	.....
Ben Rowley	Sigourney	Slope	Horse	30	5 R. P.	2	2	Natural	.....
Totals									
Averages									

* No reports.

† By operators requested not to give prices.

DISTRICT No. 2, 1888.

NUMBER OF EMPLOYEES.			ACCIDENTS.		MINING—PRICE PER TON.		Number of bags of powder used.	Tons of coal produced.	Value of coal per ton at the mine.	Railroad mines.	Local mines.
Summer miners.	Winter miners.	Days worked, in and about the mines.	Non-fatal.	Fatal.	Summer.	Winter.					
38	51	15	.....	.....	75	75	.....	.....	.....	.....	.....
33	44	30	.....	.....	75	75	.....	.....	.....	.....	.....
127	170	40	.....	.....	75	75	.....	374,501	.....	R. R.	.....
361	715	45	.....	.....	75	75	.....	.....	.....	.....	.....
190	240	33	.....	.....	75	75	.....	.....	.....	.....	.....
30	40	60	.....	.....	75	75	.....	.....	.....	.....	.....
150	200	40	.....	.....	75	75	.....	143,305	.....	R. R.	.....
107	143	43	.....	.....	75	75	.....	.....	.....	.....	.....
30	41	12	.....	.....	75	75	.....	7,000	.....	R. R.	.....
9	12	12	.....	.....	75	75	.....	.....	.....	.....	.....
4	6	12	.....	.....	75	75	.....	8,000	.....	R. R.	LOCAL
4	6	.....	.....	.....	1.00	1.00	.....	720	.....	.....	LOCAL
4	8	.....	.....	.....	1.00	1.00	.....	900	.....	.....	LOCAL
4	6	.....	.....	.....	1.00	1.00	.....	900	.....	.....	LOCAL
4	10	.....	.....	.....	.85	.85	.....	2,000	.....	R. R.	LOCAL
6	12	.....	.....	.....	.85	.85	.....	2,000	.....	R. R.	LOCAL
4	6	.....	.....	.....	.80	.80	.....	2,000	.....	R. R.	LOCAL
4	6	.....	.....	.....	.75	.75	.....	2,000	.....	R. R.	LOCAL
.....	6	.....	.....	.....	.75	.75	.....	.....	.....	.....	LOCAL
913	1,227	375	15	5	.....	.....	24,342	541,969	.....	.....	.....
1,070	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MAHASKA COUNTY.

NAME OF COMPANY.	POST-OFFICE ADDRESS.	CHARACTER OF PLANT.						
		Drift, slope or shaft.	Steam, horse or hand power.	Depth of coal below surface.	Thickness of coal in feet.	Lowwall or room and pillar workings.	Number of places of egress.	Ventilation by fan, furnace or otherwise.
Mahaska Coal Company.	Leighton	Slope	Steam	60	5.5 R. P.	2	2	Furnace
American Coal Co.	Evans	Slope	Steam	60	5.5 R. P.	2	2	Furnace
Consolidation C. C. No. 2	Muchachinock	Slope	Steam	80	7.5 R. P.	2	2	Furnace
	Muchachinock	Slope	Steam	80	6.0 R. P.	2	2	Furnace
	Muchachinock	Shaft	Steam	50	7.5 R. P.	2	2	Furnace
	Muchachinock	Shaft	Steam	50	6.0 R. P.	2	2	Furnace
Excelsior Coal Co. No. 1	Excelsior	Shaft	Steam	80	6.0 R. P.	2	2	Furnace
	Excelsior	Shaft	Steam	80	5.5 R. P.	2	2	Furnace
Beacon Coal Company.	Beacon	Slope	Steam	60	5.5 R. P.	2	2	Furnace
Gibbs & Seavers	Oskaloosa	Shaft	Steam	65	5.5 R. P.	2	2	Furnace
Standard Coal Co.	Oskaloosa	Shaft	Steam	65	5.5 R. P.	2	2	Furnace
L. C. Guthrie	Oskaloosa	Shaft	Steam	80	5.5 R. P.	2	2	Furnace
Aene Coal Company.	Oskaloosa	Shaft	Steam	65	5.5 R. P.	2	2	Furnace
D. Reigel	Oskaloosa	Shaft	Steam	65	5.5 R. P.	2	2	Furnace
S. S. Hoover	Leighton	Slope	Horse	65	5.5 R. P.	2	2	Natural
G. W. Arnold	Rose Hill	Shaft	Steam	65	5.0 R. P.	2	2	Furnace
Samuel Smith	Oskaloosa	Slope	Horse	30	5.0 R. P.	2	2	Furnace
Robert Evans	New Sharon	Slope	Horse	60	4.5 R. P.	2	2	Furnace
William Evans	New Sharon	Slope	Horse	60	4.5 R. P.	2	2	Furnace
D. Williams	New Sharon	Shaft	Horse	50	4.5 R. P.	2	2	Furnace
James Newell	Muchachinock	Slope	Horse	50	4.5 R. P.	2	2	Furnace
O. H. Vance	Muchachinock	Shaft	Horse	35	4.5 R. P.	2	2	Furnace
Totals								
Average								

* New Mine.

* Abandoned.

† Failed to report.

‡ By operators requested not to give prices.

DISTRICT No. 2, 1888.

NUMBER OF EMPLOYEES.		ACCIDENTS.	MINING—PRICE PER TON.		Number of kegs of powder used.	Tons of coal produced.	Average value of coal per ton at the mine.	Railroad mines.	Local mines.
Summer miners.	Winter miners.		Summer.	Winter.					
100	100	20	75	75	1,018	49,541	1.12 R. L.		
150	150	94	75	75	4,276	128,391	1.12 R. L.		
400	400	122	75	75	7,346	256,207	1.08 R. L.		
400	412	200	75	75	10,380	311,375	1.50 R. L.		
20	30	12	75	75	601	12,431	1.50 R. L.		
40	45	10	75	75	2,078	62,552	1.50 R. L.		
40	50	4	75	75	100	3,000	1.50		Local.
10	16	2	75	75	150	4,000	1.50		Local.
20	40	10	75	75	32	1,000	1.50		Local.
6	13	2	75	75	60	2,000	1.50		Local.
9	14	2	75	75	100	3,000	1.50		Local.
10	10	1	75	75	33	1,000	1.60		Local.
4	8	1	75	75	27	814	1.60		Local.
4	8	1	75	75	27	814	1.60		Local.
2	2	1	75	75	27	814	1.60		Local.
1,220	1,375	475	8	17	27,074	835,981		10	
							81.31 1/4		

JASPER COUNTY,

NAME OF COMPANY OR FIRM.	POST-OFFICE ADDRESS.	CHARACTER OF PLANT.						
		Drift, slope or shaft.	Steam, horse or hand power.	Depth of coal below the surface.	Thickness of coal in feet.	Longwall or room and pillar work.	Number of places of egress.	Ventilation—fan, furnace or otherwise.
D. Couch.....	Colfax.....	Shaft	Steam	100	5.5 R. P.	Furnace.		
Black Heath & Valaria, Coal Co.....	Colfax.....	Slope	Steam	70	5.5 R. P.	Furnace.		
Star Coal Co.....	Colfax.....	Shaft	Steam	50	5.5 R. P.	Furnace.		
Jasper Co. C. & M. Co.....	Colfax.....	Shaft	Steam	50	5.5 R. P.	Furnace.		
William Snooks.....	Newton.....	Shaft	Steam	30	4.5 L. W.	Furnace.		
Conn & Murdock.....	Newton.....	Shaft	Steam	65	4.5 R. P.	Furnace.		
A. Lester.....	Newton.....	Shaft	Horse	40	4.5 R. P.	Natural		
L. Marshall.....	Draper.....	Slope	Horse	30	4.5 R. P.	Furnace.		
E. F. Edwards.....	Newton.....	Shaft	Horse	40	4.5 R. P.	Furnace.		
R. Davidson.....	Newton.....	Shaft	Horse	30	4.5 R. P.	Furnace.		
R. Carson.....	Newton.....	Shaft	Horse	30	4.0 R. P.	Furnace.		
Peters & Walker.....	Newton.....	Shaft	Horse	30	4.0 R. P.	Furnace.		
C. N. Norris.....	Prairie City.....	Slope	Horse	30	4.5 R. P.	Furnace.		
Totals.....								
Averages.....								

* Failed to report.

* By operators requested not to give prices.

DISTRICT No. 2, 1888.

NUMBER OF EMPLOYEES.	ACCIDENTS.		MINING—PRICE PER TON.		Number of bags of powder used.	Tons of coal produced.	Value of coal per ton at the mine.	Railroad mines.	Local mines.
	Summer.	Winter.	Non-fatal.	Fatal.	Summer.	Winter.			
30	50	10			.75	.875	1,485	30,716	R. R.
30	70	12			.75	.875	7,330	146,500	R. R.
45	90	15	5	1	.75	.875	2,500	50,000	R. R.
11	40	7			.75	.875		20,922	R. R.
30	40	10			.75	.875		141	Local
4	1				.75	.875		2,000	Local
8	1				.75	.875		2,100	Local
4	1				.75	.875			Local
6	1				.75	.875			Local
2	1				.75	.875		1,300	Local
1					.75	.875		1,450	Local
2	1				.75	.875		1,450	Local
1	1				.75	.875		2,000	Local
102	338	62	5	1			11,305	275,179	
					.75	.875			

SCOTT COUNTY,

NAME OF COMPANY.	POST-OFFICE ADDRESS.	CHARACTER OF PLANT.						
		Drift, slope or shaft.	Steam, horse or hand power.	Depth of coal below the surface.	Thickness of coal, in feet.	Longwall, room or pillar work.	Number of places of work.	Ventilation—fan, furnace or otherwise.
Samuel James.....	Buffalo.....	Shaft	Steam	86	2.5 R. P.	2	Furnace.	
Samuel James.....	Buffalo.....	Shaft	Horse	86	2.5 R. P.	1	Furnace.	
C. G. Rowan.....	Buffalo.....	Shaft	Horse	82	2.5 R. P.	1	Furnace.	
R. Williams.....	Buffalo.....	Shaft	Horse	79	2.5 R. P.	1	Furnace.	
R. Williams.....	Buffalo.....	Shaft	Horse	79	2.5 R. P.	1	Furnace.	
Felix Martin.....	Buffalo.....	Shaft	Horse	82	2.5 R. P.	1	Furnace.	
Totals.....								

NOTE—No powder used. Local trade.

HARDIN COUNTY,

Blair Bennett.....	Eldora.....	Slope	Horse	9	9%			
Enoch Ansell.....	Eldora.....	Slope	Horse	9	4			
Madden.....	Eldora.....	Slope	Horse	9	4			
Totals.....								

*Failed to report.

DISTRICT No. 2, 1888.

NUMBER OF EMPLOYEES.				ACCIDENTS.		MINING—PRICE PER TON.		Number of bags of powder used.	Tons of coal produced.	Value of coal per ton at the mine.
Summer miners.	Winter miners.	Day hands in and about the mines.		Non-fatal.	Fatal.	Winter.	Summer.			
6	20	2				1.12%	1.12%			
14	14	1				1.12%	1.12%		3,000	1.55
13	13	1				1.12%	1.12%		2,000	1.55
9	9	1				1.12%	1.12%		2,880	1.55
1	1	1				1.12%	1.12%		1,300	1.55
8	60	6				1.12%	1.12%		9,080	1.55

DISTRICT No. 2, 1888.

1	7	1							1,400	
1	1	1								
2	2	2								
4	10	2							1,400	

RECAPITULATION BY COUNTIES—SECOND DISTRICT, 1888.

COUNTIES.	Production of coal in tons.	NUMBER OF MINERS EMPLOYED.		NUMBER OF DAY MEN AT THE MINES.		ACCIDENTS.		Price paid for mining per ton.	Value of coal per ton, at the mine.	Number of bags of powder used, 25 per keg.	Railroad miles.	Local mines.	Number of yards at 150 ft. per yard, approxi- mately.	KIND OF MOTOR USED FOR VENTILATION.			
		Summer.	Winter.	Summer.	Winter.	Fatal.	Non-fatal.							Fan.	Furnace.	Steam jet.	Natural.
Keokuk.....	541,066	913	1,227	203	205	5	15	.75	4	1.40	24,242	12	12,646	8	2	1	4
Mahaska.....	825,081	1,220	1,375	475	475	8	17	.73	5	1.40	27,806	10	19,506	10	11	1	12
Jasper.....	275,170	162	358	62	62	1	5	.87		1.40	10,963	5	6,420	4	10		
Hardin.....	1,000	8	8														
Scott.....	9,080	8	66	4	8			1.12½		1.55							
Totals.....	1,663,206	2,303	3,014	746	748	14	35*		†		63,071	27	38,572	22	34	1	6

NOTE.—Total amount of nut coal, 311,146 tons.

* Average price paid miners, 77½ cents.

† Average value of coal per ton at mines, \$1.44.

1889.

KEOKUK COUNTY.

[illegible]

* Mines abandoned.

*Mines abandoned.
 †New mines.
 ‡Requested by operators not to give selling prices.

DISTRICT No. 2, 1888.

[illegible]

MAHASKA COUNTY.

DISTRICT No. 2, 1889.

CHARACTER OF PLANT.									
NAME OF COMPANY OR FIRM.	POST-OFFICE ADDRESS.	Drift, slope or shaft.	Steam, horse or hand power,	Depth of coal below the surface.	Thickness of coal, in feet.	Lungwall, room or pillar work.	Number of places of egress.	Furnaces, fan, furnaces or otherwise.	
Maluska Coal Co.....	Leighton	Slope	Steam ..	60	5.5 R. P.	.....	.....	.....	.....
Amerasia Coal Co.....	Evans	Slope	Steam ..	60	5.5 R. P.	.....	.....	.....	.....
Consolidation C. Co. No. 5	Muchaehinook	Shaft	Steam ..	80	6 R. P.	.....	.....	.....	.....
	6 Muchaehinook	Shaft	Steam ..	125	6 R. P.	.....	.....	.....	.....
	7 Muchaehinook	Shaft	Steam ..	45	6.5 R. P.	.....	.....	.....	.....
Excelsior Coal Co. No. 2	Excelsior	Shaft	Steam ..	85	6 R. P.	.....	.....	.....	.....
	2 Excelsior	Shaft	Steam ..	65	6 R. P.	.....	.....	.....	.....
Beacon Coal Co.....	Beacon	Slope	Steam ..	80	5.5 R. P.	.....	.....	.....	.....
*Standard.....	Oskaloosa	Shaft	Steam ..	65	5.5 R. P.	.....	.....	.....	.....
*Acme	Oskaloosa	Shaft	Steam ..	80	5.5 R. P.	.....	.....	.....	.....
B. F. Evans	Oskaloosa	Shaft	Steam ..	85	5.5 R. P.	.....	.....	.....	.....
L. F. Guthrie	Oskaloosa	Shaft	Steam ..	85	5.5 R. P.	.....	.....	.....	.....
D. Belzel	Oskaloosa	Shaft	Steam ..	65	5.5 R. P.	.....	.....	.....	.....
S. Smith	Oskaloosa	Shaft	Steam ..	65	5.5 R. P.	.....	.....	.....	.....
J. Hartman	Oskaloosa	Shaft	Steam ..	85	5.5 R. P.	.....	.....	.....	.....
W. Hoover	Oskaloosa	Shaft	Horse ..	75	7 R. P.	.....	.....	.....	.....
A. A. Hoover	Leighton	Slope	Horse ..	50	5.5 R. P.	.....	.....	.....	.....
B. F. Arnold	Rose	Slope	Steam ..	54	5 R. P.	.....	.....	.....	.....
R. Evans	New Sharon	Drift	Hand ..	30	5 R. P.	.....	.....	.....	.....
W. Evans	New Sharon	Slope	Horse ..	60	4.5 R. P.	.....	.....	.....	.....
W. Williams	New Sharon	Shaft	Horse ..	60	4.5 R. P.	.....	.....	.....	.....
J. Newell No. 1	Muchaehinook	Slope	Steam ..	50	5.5 R. P.	.....	.....	.....	.....
J. Newell No. 2	Muchaehinook	Slope	Horse ..	50	4.5 R. P.	.....	.....	.....	.....
O. H. Vance	Eddyville	Shaft	Horse ..	35	4.5 R. P.	.....	.....	.....	.....
J. Laacy	Oskaloosa	Shaft	Steam ..	30	7.5 R. P.	.....	.....	.....	.....
*Terry & Rodgers	Oskaloosa	Slope	Horse ..	30	4.5 R. P.	.....	.....	.....	.....
Beacon Mine	Beacon	Slope	Horse ..	30	4.5 R. P.	.....	.....	.....	.....

NUMBER OF EMPLOYEES.		ACCIDENTS.		MINING—PRICE PER TON.		NUMBER OF KEPS OF powder used.	Net coal, in tons	Tons of coal produced.	Railroad miles.	Local miles.
Summer miners.	Winter miners.	Days' hands in paid about the mines.	Non-fatal.	Fatal.	Summer.						Winter.
117	117	10	3							
146	216	10	1				10,032	110,975	1	
373	500	150	5	3				255,571	3	
300	500	125	4	6			42,635	378,400	2	
20	70	15		1				12,484	1	
80	125	15					1,430	40,000	1	
								400	1	
5	21	1						10,900		
5	9	2						3,987		
5	10	1					2,000	6,000		
								2		
1	1	1						1,130		
10	10	1					300	709		
4	8	1						400		
4	8	1								
4	8	1								
1	1	1								
12	12	1								
13	13	1								
1,208	1,063	453	14	11			15,138	841,702	11	

* Mines abandoned.

+ New mines.

* New address.
 ‡ Failed to report.

†The approximate number of tons produced by those mines, would be about 10,000

NOTE.—By operators requested not to give selling prices.

JASPER COUNTY,

NAME OF COMPANY OR FIRM.	POST-OFFICE ADDRESS.	CHARACTER OF PLANT.									
		Drift, slope or shaft.	Steam, horse or hand power.	Depth of coal below the surface.	Thickness of coal, in feet.	Longwall, room or pillar.	Number of places of egress.	Ventilating fan, furnace or blower.			
Valeria Coal & Mining Co	Colfax	Shaft	Steam	50	5.5 R. P.	2	Fan	.....		
D. S. Couch	Colfax	Slope	Steam	55	5.5 R. P.	2	Furnace	.....		
Star Mine	Colfax	Shaft	Steam	55	5.5 R. P.	2	Fan	.....		
Carr & Cook	Mitchellville	Shaft	Horse	60	5.3 R. P.	1	Furnace	.....		
R. Hull	Prairie City	Slope	Horse	80	4 R. P.	2	Natural	.....		
Brown & Price	Prairie City	Slope	Horse	40	4.5 L. P.	2	Natural	.....		
E. E. Edwards	Draper	Slope	Horse	40	4 L. W.	2	Natural	.....		
T. J. Danks	Draper	Slope	Horse	60	3 L. W.	2	Natural	.....		
D. Bruce	Draper	Slope	Horse	50	3.5 L. W.	2	Natural	.....		
R. Davidson	Newton	Shaft	Steam	40	4.5 R. P.	2	Furnace	.....		
R. Carlson	Newton	Shaft	Horse	30	3.5 R. P.	2	Natural	.....		
A. Lister	Newton	Shaft	Horse	60	4.5 R. P.	2	Furnace	.....		
Cogg & Murdock	Colfax	Slope	.....	60	4.5 R. P.	2	Furnace	.....		
S. Slaughter	Colfax	Slope	.....	60	4.5 R. P.	2	Furnace	.....		
W. W. Allen	Newton	Shaft	.....	.....	.....	.....	Natural	.....		
Walker Henry	Newton	Shaft	.....	.....	.....	.....	Natural	.....		
Will S. Nooks	Draper	Shaft	.....	.....	.....	.....	Natural	.....		
Jasper Co. Coal & R. R. Co	Draper	Slope	.....	.....	.....	.....	Natural	.....		
Robert Marshall	Draper	Slope	.....	.....	.....	.....	Natural	.....		
Totals											

*Failed to report.

NOTE.—Requested by operators not to give selling prices.

DISTRICT No. 2, 1889.

NUMBER OF EMPLOYER.		ACCIDENTS.		MINING—PRICE PER TON.		Number of bags of powder used.	Net coal, in tons.	Tons of coal produced.	Railroad miles.	Local mines.
Summer miners.	Winter miners.	Day hands in and about the mines.	Non-fatal.	Fatal.	Summer.	Winter.				
125	100	40	5	.....	\$.80	\$.82½	.....	2,000	190,381	2
75	100	20	.....	.....	.80	.82½	.....	1,975	24,064	1
.....	40	7	.....	.....	.80	.82½	.....	.....	5,000	1
.....	15	2	1	2	1.00	1.00	.....	220	940	1
.....	4	1	.....	.....	1.00	1.00	.....	130	500	1
.....	1	1	.....	.....	1.00	1.00	.....	370	1,110	1
.....	6	1	.....	.....	.....	.87½	.....	.....	600	1
.....	6	1	.....	.....	.....	.87½	.....	.....	600	1
.....	9	1	.....	.....	.....	.87½	.....	.....	1,000	1
.....	10	2	.....	.....	.....	.87½	.....	.....	1,400	1
.....	5	1	.....	.....	.....	.....	.....	.....	600	1
.....	7	2	.....	.....	.....	.....	.....	.....	1,650	1
.....	5	1	.....	.....	.....	.....	.....	.....	.....	1
.....	12	1	.....	.....	.....	.....	.....	.....	.....	1
.....	5	1	.....	.....	1.00	1.00	.....	.....	.....	1
.....	12	1	.....	.....	1.00	1.00	.....	.....	.....	1
.....	10	1	.....	.....	.....	.....	.....	.....	604	1
.....	35	75	10	.....	.....	.....	.....	1,504	1,112	1
.....	5	1	.....	.....	.....	.....	.....	1,504	16,000	2
.....	5	1	.....	.....	.....	.....	.....	180	180	1
242	436	92	6	2	\$.85	\$.87½	10,573	6,105	247,012	6

SCOTT COUNTY,

NAME OF COMPANY OR FIRM.	POST-OFFICE ADDRESS.	CHARACTER OF PLANT.							
		Drift, slope or shaft.	Steam, horse or hand power.	Depth of coal below the surface.	Thickness of coal in feet.	Longwall, room or pillar work.	Number of places of egress.	Ventilating—fan, furnace or otherwise.	
Samuel James	Buffalo	Shaft.	Steam.	86	2.5	R. P.	2	Furnace..	
Samuel James, No. 2	Buffalo	Shaft.	Horse.	86	2.5	R. P.		Furnace..	
C. G. Rowan	Buffalo	Shaft.	Horse.	82	2.5	R. P.		Furnace..	
R. Williams	Buffalo	Shaft.	Horse.	70	2.5	R. P.		Furnace..	
R. Williams, No. 2	Buffalo	Shaft.	Horse.	82	2.5	R. P.		Furnace..	
Felix Maetin	Buffalo	Shaft.	Horse.	82	2.5	R. P.		Furnace..	
Totals									

* Failed to report.

DISTRICT No. 2, 1889.

NUMBER OF EMPLOYEES.			ACCIDENTS.		Mining—price per ton.	Tons of coal produced.	Value of coal per ton at the mine.	Local mines.
Summer miners.	Winter miners.	Day hands in and about the mine.	Non-fatal.	Fatal.				
15	30	3			\$ 1.00	3,944		3
	14	1				2,000		1
						2,000		1
19	44	4			\$ 1.00	7,944	1.75	6

RECAPITULATION BY COUNTIES, SECOND DISTRICT, 1889.

COUNTIES.	NUMBER OF MINERS EMPLOYED.		NUMBER OF DAY HANDS EMPLOYED.		ACCIDENTS.		Price paid for mining per ton.	Value of coal per ton at the mine.	Number of kegs of powder used, at \$2.25 per keg.	Railroad mines.	Local mines.	KIND OF MOTOR VENTILATION.			
	Summer.	Winter.	Summer.	Winter.	Fatal.	Non-fatal.						Fan.	Furnace.	Steam jet.	Natural.
Kosciusko.....	867	1,011	430	341	11	15	\$.75	11,585	11,585	8	14	31	0	10	11
Jasper.....	1,238	1,661	430	430	11	15	.75	10,320	10,320	6	15	4	0	0	9
Hardin.....	245	430	1	1	1	1	1.00	1,000	1,000	0	0	0	0	0	0
Scott.....	44	44	0	0	0	0	1.00	1,000	1,000	0	0	0	0	0	0
Totals.....	1,845	3,166	871	871	16	37	\$.75	30,204	30,204	25	32	32	0	21	11

NOTE.—Net coal produced, 84,061 tons.

JAMES GILBROY,
Mine Inspector.

THIRD DISTRICT,

EMBRACING

BOONE, DALLAS, GREENE, GUTHRIE, POLK, WEBSTER,
HAMILTON AND STORY COUNTIES.

JAS. E. STOUT, INSPECTOR.

BIENNIAL REPORT.

To his Excellency, WILLIAM LARRABEE, Governor of Iowa:

SIR—In compliance with the requirements of the mining law, I have the honor to herewith submit the report of the Third Inspection District, for the two years ending June 30, 1889. This report contains statistical tables showing the number of mines; the number of miners employed; the production of lump and nut coal, and the value of such product at the mines; a list of improvements made, and accidents occurring in and about the mines.

The biennial period just ended has been one of unusual depression in the coal trade; work has been very dull and prices have ruled low. This state of things has been hard on both mine owners and miners, but especially on the miners; for while the mine owner suffers only in his pocket-book, the miner and his family often suffer for the necessities of life. But let us hope that the worst has been reached, and the tide will now turn, and that the biennial period upon which we are now entering may prove prosperous to both employer and employe alike.

Respectfully submitted,

JAMES E. STOUT,
Inspector of Mines, Third District

COAL OUT-PUT OF THE COUNTIES COMPRISING DISTRICT NO. 3, FOR THE PAST FIVE YEARS.

COUNTY.	1885.	1886.	1887.	1888.	1889.
Boone.....	485,191	294,970	167,068	157,659	124,615
Dallas.....	32,986	21,986	40,220	54,580	69,430
Greene.....	89,587	117,538	105,894	131,714	94,415
Guthrie.....	4,596	17,194	18,305	18,080	13,412
Hamilton.....	918	3,312	6,669	6,480	2,500
Polk.....	462,895	337,964	305,064	386,321	356,039
Webster.....	145,296	107,777	146,221	174,293	145,653
Story.....	.....	.....	2,000	2,000	.....
Total.....	1,194,469	900,741	791,671	931,727	806,064

NAMES OF MINES—CONTINUED.

GUTHRIE COUNTY.

NAMES OF COMPANY OR FIRM.	Name of mine.	Kind of mine.	POST-OFFICE.
Marchant & Winter.....	No. 1 Shaft ..	Fansler.	
James Thomas.....	No. 1 Shaft ..	Fansler.	
P. Renslow.....	No. 1 Shaft ..	Fansler.	
F. D. Johnson.....	No. 1 Shaft ..	Fansler.	
G. W. Butler.....	No. 1 Shaft ..	Fansler.	
Raynor Bros.....	No. 1 Shaft ..	Fansler.	
Joseph Maughn & Co.....	No. 1 Shaft ..	Fansler.	
D. D. Rees.....	No. 1 Shaft ..	Panora.	
John Courtney.....	No. 1 Shaft ..	Panora.	
Digert & Mitchell.....	No. 1 Shaft ..	Panora.	
White & Fillmer.....	No. 1 Shaft ..	Glendon.	
James Baxter.....	No. 1 Drift ..	Bayard.	
W. P. Williams.....	No. 1 Drift ..	Bayard.	
Amos Taylor.....	No. 1 Drift ..	Bayard.	
Charles Miller.....	No. 1 Drift ..	Bayard.	
Evans & Morton.....	No. 1 Shaft ..	Menlo.	
Heaton & Zist.....	No. 1 Shaft ..	Dale City.	
McCluer & Arrowsmith.....	No. 1 Shaft ..	Dale City.	
A. Muldoon.....	No. 1 Shaft ..	Dale City.	

POLK COUNTY.

Garver Coal & Mining Co.....	No. 1 Shaft ..	Des Moines.
Rose Hill Coal Co.....	No. 1 Shaft ..	Des Moines.
Coon Valley Coal & Mining Co.....	No. 1 Shaft ..	Des Moines.
Coon Valley Coal & Mining Co.....	No. 2 Shaft ..	Des Moines.
Bloomfield Coal & Mining Co.....	No. 2 Shaft ..	Des Moines.
Eureka Coal & Mining Co.....	No. 1 Shaft ..	Des Moines.
Vandinkel Coal Co.....	No. 1 Shaft ..	Des Moines.
Union Coal & Mining Co.....	No. 1 Shaft ..	Des Moines.
Des Moines Coal & Mining Co.....	No. 1 Shaft ..	Des Moines.
Gibson Coal Co.....	No. 1 Shaft ..	Des Moines.
J. M. Christy.....	No. 1 Shaft ..	Des Moines.
Runnells Coal Co.....	No. 1 Slope ..	Des Moines.
Camp Creek Coal & Mining Co.....	No. 1 Shaft ..	Des Moines.
Polk City Coal & Mining Co.....	No. 1 Shaft ..	Polk City.
W. J. Stoughtenberg.....	No. 1 Slope ..	Runnells.
Proctor Coal Co.....	No. 1 Shaft ..	Des Moines.
Samuel Dale.....	No. 1 Shaft ..	Commerce.

NAMES OF MINES AND LOCATION.

BOONE COUNTY.

NAMES OF COMPANY OR FIRM.	Name of mine.	Kind of mine.	POST-OFFICE.
Balby Bros.....	No. 1 Shaft ..	Angus.	
James Wilson.....	No. 1 Shaft ..	Pilot Mound.	
Zankle Bros.....	No. 1 Shaft ..	Pilot Mound.	
W. D. Johnson & Co.....	No. 1 Shaft ..	Boonesboro.	
Rogers & Crow.....	No. 1 Shaft ..	Boonesboro.	
Millford Coal Co.....	No. 1 Shaft ..	Boonesboro.	
John Marshall & Son.....	No. 1 Shaft ..	Boonesboro.	
McBirnle & Nelson.....	No. 3 Shaft ..	Boonesboro.	
Samuel McBirnle.....	No. 2 Shaft ..	Boonesboro.	
Riverside Coal Co.....	No. 1 Shaft ..	Boonesboro.	
Clark & Flockhart.....	No. 1 Shaft ..	Boonesboro.	
James Bulkley & Son.....	No. 1 Shaft ..	Boonesboro.	
H. E. Hall.....	No. 1 Slope ..	Boonesboro.	
Joseph York.....	No. 1 Shaft ..	Zenarsville.	
Hutchinson Bros. & Son.....	No. 1 Shaft ..	Zenarsville.	
Clyde Coal Co.....	No. 1 Shaft ..	Moingona.	
Northwestern Coal Co.....	No. 3 Shaft ..	Moingona.	
William McBirnle.....	No. 1 Shaft ..	Moingona.	
Knox Bros.....	No. 1 Drift ..	Madrid.	
Robert Potter.....	No. 1 Drift ..	Madrid.	

DALLAS COUNTY.

Dawson Coal Co.....	No. 2 Shaft ..	Dawson.
Chicago & Van Meter Coal & Mining Co.....	No. 1 Slope ..	Van Meter.
J. R. Strange & Son.....	No. 1 Shaft ..	Woodward.
Joseph Staples.....	No. 1 Drift ..	Linden.
W. H. H. Potts.....	No. 1 Drift ..	Redfield.
Oliver Caves.....	No. 1 Drift ..	Redfield.
Redfield & Hutchins.....	No. 1 Drift ..	Redfield.

GREENE COUNTY.

Keystone Coal Co.....	No. 3 Shaft ..	Angus.
Buckeye Coal Co.....	No. 1 Shaft ..	Angus.
Ripsey Coal Co.....	No. 1 Shaft ..	Ripsey.
Dale, Goodwin & Co.....	No. 1 Shaft ..	Grand Junction.

NAMES OF MINES—CONTINUED.

WEBSTER COUNTY.

NAME OF COMPANY OR FIRM.	Name of mine.	Kind of mine.	POST-OFFICE.
Craig Coal Co.	No. 5 Drift	Kalo.	
Craig Coal Co.	No. 6 Drift	Kalo.	
Craig Coal Co.	No. 1 Shaft	Kalo.	
Koefe & Co.	No. 1 Drift	Kalo.	
Erick Johnson	No. 1 Drift	Kalo.	
John Bennett	No. 1 Drift	Kalo.	
James Porter	No. 1 Drift	Kalo.	
D. C. Hart	No. 1 Drift	Kalo.	
Wm. Johnson	No. 1 Drift	Kalo.	
Carlson Coal Co.	No. 1 Drift	Kalo.	
Mills & Everett	No. 1 Drift	Kalo.	
James Brown	No. 1 Drift	Kalo.	
Owen McGovern	No. 1 Drift	Kalo.	
Stuart Bros.	No. 1 Drift	Kalo.	
Collins Bros.	No. 1 Slope	Coalville.	
A. Davis	No. 1 Shaft	Coalville.	
A. Stine	No. 1 Drift	Coalville.	
James Martin	No. 1 Drift	Coalville.	
Isaac Rhodes	No. 1 Drift	Coalville.	
Crooked Creek Coal Co.	No. 1 Drift	Lehigh.	
Crooked Creek Coal Co.	No. 2 Slope	Lehigh.	
Crooked Creek Coal Co.	No. 1 Shaft	Lehigh.	
W. C. Beem	No. 2 Drift	Lehigh.	
George W. Carey	No. 1 Drift	Lehigh.	
S. W. Carey	No. 1 Drift	Lehigh.	
Henry Carey	No. 1 Drift	Lehigh.	
C. S. & F. Carey	No. 1 Slope	Lehigh.	
Wm. Barrowman	No. 1 Drift	Lehigh.	
Thomas Foreman	No. 1 Drift	Lehigh.	
Patrick Cuff	No. 1 Drift	Lehigh.	

IMPROVEMENTS MADE IN MINES DURING PAST TWO YEARS.

BOONE COUNTY.

NAME OF COMPANY.	Air shaft.	Second openings.	Stairways.	Safety catches.	Safety gates.	Covers on cages.	Brakes on drums.	Fans.	Furnaces.
John Marshall									1
Hutchison Bros. (new shaft)				1	1	1	1		1
Joseph York (new shaft)				1	1	1	1		
Rogers & Crow								1	
James Wilson				1	1	1			
Zunkle Bros.				1	1	1			
Total				4	4	4	2	1	2

DALLAS COUNTY.

Chicago & Van Meter Coal Co.									1
Dawson Coal Co. (new shaft)	1			1	1	1	1	1	
Total	1			1	1	1	1	2	

GUTHRIE COUNTY.

G. W. Butler	1		1	1	1	1			
James Thomas	1		1	1	1	1			
Total	2		2	2	2	2			

WEBSTER COUNTY.

Craig Coal Co. (new shaft)		1		1	1	1	1	1	
Craig Coal Co. No. 6	1								1
Geo. Carey									1
Total	1	1		1	1	1	1	1	2

IMPROVEMENTS MADE IN THE MINES—CONTINUED.

POLK COUNTY.

NAME OF COMPANY.	Air shafts.	Second openings.	Stairways.	Safety catches.	Safety gates.	Covers on cages.	Brakes on drums.	Fans.	Furnaces.
Bloomfield Coal Co. (new shaft)	1	1	1	1	1	1	1	1	1
Des Moines Coal & Mining Co.	1	1	1	1	1	1	1	1	1
Polk County Coal Co.	1	1	1	1	1	1	1	1	1
Van Ginkel Coal Co.	1	1	1	1	1	1	1	1	1
Garver Coal Co.	1	1	1	1	1	1	1	1	1
Coon Valley No. 2	1	1	1	1	1	1	1	1	1
Runnells Coal Co.	1	1	1	1	1	1	1	1	1
Camp Creek Coal Co.	1	1	1	1	1	1	1	1	1
Polk City Coal Co.	1	1	1	1	1	1	1	1	1
Rose Hill Coal Co.	1	1	1	1	1	1	1	1	1
Proctor Coal Co. (new shaft)	1	1	1	1	1	1	1	1	1
Total	2	3	3	3	3	3	5	7	1

NAME AND DESCRIPTION OF MINES IN DISTRICT NO. 3.

BOONE COUNTY.

DALBY MINE.

James and John Dalby, proprietors, is a shaft located at Angus. Depth, 112 feet; steam power; thickness of vein, four to five feet; thirty miners employed in winter; large part of the out-put sold to local trade; ventilated by fan.

JAMES DALBY,
Superintendent.

JAMES WILSON.

This is a shaft mine, three miles from Pilot Mound. Depth, fifty feet; ventilated by furnace; horse power used for hoisting; thickness of vein, four feet; coal all sold to local trade; fifteen miners employed in winter.

JAMES WILSON,
Owner and Operator.

ZUNKEL BROTHERS.

Is a shaft mine, three miles from Pilot Mound. Depth, eighty feet; thickness of vein, four feet; horse power; ventilation, natural; ten miners in winter; all sold to local trade.

ZUNKLE BROTHERS,
Operators.

W. D. JOHNSON & CO.

This is a shaft mine, one mile west of Boonesboro, on the Chicago & Northwestern Railroad. Depth, 242 feet; steam power; thickness of vein, four feet; ventilated by fan.

T. N. CAMPBELL,
Manager.

EXCHANGE COAL COMPANY.

George Rogers and William Crow, proprietors. This company operates two mines, both shafts. No. 1, two miles west of Boonesboro; steam power; ventilated by fan; thickness of vein, two to three feet; worked long wall; number of miners employed in winter, sixty. No. 2 mine is a new shaft, three miles west of Boonesboro; not developed yet.

WILLIAM CROW,
Superintendent.

MILLFORD COAL COMPANY.

Birmingham & Keating, owners and operators, is a shaft mine, three miles west of Boonesboro. Depth of shaft, 100 feet; steam power; thickness of vein, four feet; ventilated by fan; number of miners in winter, fifty-eight; coal is hauled in wagons to railroad.

JOHN KEATING,
Superintendent.

H. E. HALL

Owens and operates a small drift mine, two and one half miles west of Boonesboro; thickness of mine, three feet; ventilation, natural; miners in winter, twenty; coal hauled in wagons to railroad.

SAMUEL MCBIRNIE

Is operating two mines one and one half miles southwest of Boonesboro; both shafts; No. 1 has been in operation several years; depth, eighty feet; thickness of vein, two feet; ventilated by furnace; horse power used for hoisting; number of miners in winter, sixteen. No. 2 is a new shaft, in the same neighborhood, not yet developed; steam power used for hoisting; coal all hauled in wagons to railroad.

SAMUEL MCBIRNIE,
Superintendent.

CLARK & FLOCKHART.

This is a shaft mine, one and one half miles southwest of Boonesboro; depth, eighty feet; thickness of vein, two feet; horse power; ventilated by furnace; miners in winter, twenty-five.

ROBERT CLARK,
Superintendent.

JOHN MARSHALL & SON

Own and operate a shaft mine, two miles west of Boonesboro; depth, forty feet; thickness of vein, four feet; ventilated by furnace; steam power used for hoisting; number of miners in winter, forty.

JOHN MARSHALL,
Superintendent.

MCBIRNIE & NELSON.

This is a shaft mine, located two miles west of Boonesboro; depth, forty feet; thickness of vein, four feet; ventilated by furnace; horse power used for hoisting; number of miners in winter, twenty-five.

ROBERT NELSON,
Superintendent.

RIVERSIDE COAL CO.

This is a new shaft, two miles west of Boonesboro; depth, thirty-five feet; thickness of vein, three feet; horse power used for hoisting; natural ventilation; miners in winter, ten; worked on the longwall system.

JAMES WEIR,
Superintendent.

JOSEPH YORK

Is the owner and operator of a shaft mine at Zenorsville; depth, eighty-six feet; thickness of vein, four feet; ventilation by furnace; miners in winter, thirty; coal all sold to local trade; steam power used for hoisting.

HUGH GIVENS,
Pit Boss.

HUTCHINSON BROS. & SON.

This is a shaft mine, located at Zenorsville; depth, 125 feet; horse power used for hoisting; ventilated by furnace; thickness of vein, four feet; coal all sold to local trade; miners in winter, twenty-one.

JOHN HUTCHINSON,
Superintendent.

CLYDE COAL CO.

Are operating a shaft mine one mile from Moingona; depth, eighty feet; steam power; ventilated by fan; worked longwall; miners employed, eighty-five; coal shipped on Chicago & Northwestern Railroad,

O. W. CARPENTER,
Superintendent.

James Bulkley operates a shaft mine two miles from Boonesboro; miners, employed, five in all; coal sold to local trade.

NORTHWESTERN COAL CO.

This mine is located on the Chicago & Northwestern Railroad, near Moingona; is a shaft mine, seventy feet deep, worked on the longwall system; thickness of vein, from two to three feet; ventilated by fan; miners employed, sixty.

W. O. MORGAN,
Superintendent.

There are a few other small mines down the river from Moingona that take out a little coal in the winter season, but it is hard to keep track of them as they only work two or three men each, and change hands so often that I have not attempted to make any record of them.

DALLAS COUNTY.

DAWSON COAL CO.

This is a shaft mine, 160 feet deep, at Dawson, on the Chicago, Milwaukee & St. Paul Railroad. Steam power used for hoisting and underground haulage. Self-dumping cages are also in use at this mine; is ventilated by fan; thickness of vein, three to four feet; miners employed, ninety; coal is mostly sold to railroads, giving them steady employment the year round.

JOSEPH RAMSEY,
Superintendent.

VAN METER MINE.

This mine is owned and operated by the Chicago & Van Meter Coal Mining Co.; is located at Van Meter, on the Chicago, Rock Island & Pacific Railroad; a shaft mine; depth, 275 feet; steam power; thickness of vein, two to three feet, worked longwall; miners employed, eighty-four; coal mostly sold to the railroad company, giving them steady employment. The Superintendent, E. T. Hill, was killed by falling down shaft. Do not know who holds that position now.

J. B. Strange & Son own and operate a shaft mine on the Des Moines river at Chestnut Ford; depth, forty-five feet; horse power; ventilation, natural; thickness of vein, two to two and a half feet; coal all sold to local trade.

Joseph Stapes operates a small drift mine near Linden; vein, one and a half feet; three miners employed.

W. H. H. Potts, Frank Hutchins, Oliver Caves and Fred Redfield are each operating small mines in the vicinity of Redfield; thickness of vein, one and a half feet. Are worked only during a few months in the winter.

GREENE COUNTY.

KEYSTONE COAL CO. No. 3 SHAFT.

Is located two miles west of Angus; depth, 100 feet; thickness of vein, four to five feet; steam power; ventilated by fan; miners employed, eighty. Mining machines have been used at this mine, but are now taken out. Pillars are being drawn, and mine will soon be finished.

JOHN MCKAY,
Superintendent.

BUCKEYE COAL CO.

This company own two mines, both shafts two miles west of Angus. Only one is being operated at present. Horse power used to hoist the coal; thickness of vein, four to five feet; ventilated by furnace; miners employed, twenty; coal hauled in wagons to the railroad.

JOHN HALL,
Superintendent.

RIPPEY COAL CO.

The mine of this company is located at Rippey, on the Fort Dodge branch of the Chicago, Rock Island & Pacific Railroad; is a shaft mine; depth, 120 feet; thickness of vein, three to six feet; ventilated by fan; steam power used for hoisting; miners employed, ninety. This company attempted to sink a new shaft about half a mile from their present one, but failed, on account of sand and water.

ISAAC SIMPSON,
Superintendent.

DALE, GOODWIN & CO.

This is a shaft mine, located at Grand Junction. Depth, 150 feet; thickness of vein, one and one half feet; steam power used for hoisting; ventilated by fan; miners employed, thirteen. There is a large amount of fire-clay taken out of this mine, which is manufactured into brick and tile.

ROBERT GOODWIN,
Superintendent.

GUTHRIE COUNTY.

MARCHANT & WINTER.

This company own and operate a shaft mine, located near Fansler's mill, on the Middle 'Coon river; depth of shaft, 126 feet; thickness of vein, two feet; is worked on the longwall system; coal all sold to the local trade; miners employed, 18; ventilation, natural.

James Thomas is operating a mine four miles north of Fansler's mill, on the Middle 'Coon river; is a shaft mine; depth, 60 feet; thickness of vein, one and one half feet; horse power used for hoisting; ventilation, natural; miners employed, eleven.

P. Renslow is owner and operator of a shaft mine near Fansler's mill; depth of shaft, eighty-one feet; thickness of vein, two feet; horse power; ventilation, natural; miners employed, nine.

F. D. JOHNSON.

This is a small shaft mine near Fansler's mill, on Middle 'Coon river; depth, eighty feet; horse power; thickness of vein, two feet; ventilation, natural; miners employed, five.

G. W. Butler operates a small shaft mine at Fansler's mill; depth, 72 feet; ventilation, natural; horse power; miners employed, six; thickness of vein, two feet.

Raynor Bros. are operating a small shaft at Fansler's mill; depth of shaft, thirty-five feet; horse power used for hoisting; natural ventilation; thickness of vein, one and one half feet; miners employed, four.

Joseph Maughn & Co. own and operate a shaft mine about two miles from Fansler's mill. This is a new mine, just opening up.

D. D. Rees is operating a shaft mine at Pandora; depth of shaft, 100 feet; horse power used for hoisting; ventilation, natural; is worked longwall; thickness of vein, one and one half feet; miners employed, nine.

John Courtney operates a small shaft mine near Pandora; vein, sixteen inches.

Digert & Mitchell operate a shaft mine three and one half miles east of Pandora; miner employed, five.

This is a shaft mine, located at Gendon; horse power; depth of shaft, 110 feet; ventilation, natural; thickness of vein, one and one half feet; miners employed, eight.

James Baxter, W. P. Williams, Amos Taylor and Charles Miller are each operating small drift mines five miles south of Bayard; vein about sixteen inches; from two to five miners employed in each.

Evans & Morton operate a small mine near Menlo; only two miners employed.

Heaton & List, A. Muldoon, and McClaen & Arrowsmith are each operating small shaft mines south of Dale City; from two to five miners employed in each.

POLK, COUNTY.

GARVER MINE.

This mine is owned and operated by the Garver Coal & Mining Co.; is located in East Des Moines; is a shaft mine, depth 118 feet; steam power; ventilated by fan; thickness of vein, four to six feet; number of men employed, eighty; coal loaded on Chicago & Northwestern Railroad. All the buildings at this mine were destroyed by fire on the morning of October 25, 1887, but before the fire was fairly out the company were at work rebuilding, and on December 1, 1887, were again taking out coal.

RUFUS FORD,
Superintendent.

POLK CITY MINE.

Is located at Polk City; operated by Polk City Coal & Mining Co.; is a shaft mine, depth 238 feet, and is the deepest mine in the county; steam power; ventilated by furnace; thickness of vein, four feet; miners employed, ten.

N. R. KUNTZ,
Superintendent.

ROSE HILL.

This mine is located three miles west of the city of Des Moines, on the south side of 'Coon river; is a shaft mine, depth ninety feet; is owned and operated by the Rose Hill Coal Mining Co.; steam power used; thickness of vein, three to four feet; ventilated by fan; miners employed, sixteen; is just a new mine, and yet undeveloped; coal is loaded on Des Moines, Osceola & Southern Railroad; is close to the Diagonal, and expect to get a switch from that.

THOS. HULL,
Superintendent.

COON VALLEY, No. 1.

Is owned and operated by Coon Valley Coal & Mining Co.; is located south of Des Moines; depth of shaft, 118 feet; steam power; ventilated by fan; thickness of vein, four to six feet; miners employed, ninety; have shipping facilities on two railroads, the Des Moines, Osceola & Southern and the Diagonal.

THOS. BECK,
Superintendent.

MANBECK MINE.

This mine is located five miles southeast of Des Moines, on the Winterset branch of the Chicago, Rock Island & Pacific Railroad. Owned and operated by the Coon Valley Coal and Mining Company. Is a shaft, depth forty-five feet; steam power; thickness of vein, three to four feet; ventilated by fan; miners employed, thirty-five.

THOS. BECK,
Superintendent.

BLOOMFIELD MINE.

Is located on the south side of the city of Des Moines; is a shaft mine; owned and operated by the Bloomfield Coal & Mining Company; depth, 181 feet; steam power; ventilated by fan, which is set down in the mine in the main air-course; thickness of vein, four to six feet; coal hauled in wagons, mostly to the city trade; miners employed, seven.

CHARLES WORTH,
Superintendent.

EUREKA MINE.

Is located in South Des Moines; is a shaft mine; owned and operated by the Eureka Coal & Mining Company; depth, 160 feet; steam power; ventilated by fan; thickness of vein, four to six feet; miners employed, ninety; coal is loaded on Chicago, Rock Island & Pacific Railroad; they have a tail-rope in use for underground haulage, 1,700 feet long.

J. C. CARLSON,
Superintendent.

UNION MINE.

Is located in South Des Moines; owned and operated by the Union Coal & Mining Company; depth of shaft, 150 feet; ventilated by fan; steam power used for hoisting; thickness of vein, four feet; miners employed, sixty-five; coal hauled in wagons, mostly to city trade.

CALEB JOHNS,
Superintendent.

HASTIE MINE.

This mine is located on the Wabash Railroad, six miles southeast of the city of Des Moines; is owned and operated by J. M. Christy; depth of shaft, 100 feet; steam power; ventilated by fan; thickness of vein, four feet.

A. B. CALDWELL,
Superintendent.

RUNNELLS' SLOPE.

Located at Runnells, on the Wabash Railroad; operated by the Runnells Coal Company; horse power used for hauling coal up slope; ventilated by furnace; thickness of vein, four feet.

SAMUEL KYLE,
Superintendent.

W. V. Stoughtenberg is operating a drift mine at Runnells. It is a new mine, not yet developed very largely; coal loaded on the Wabash Railway; ventilated by furnace; thickness of vein, four feet.

W. J. STOUGHTENBERG,
Superintendent.

VAN GINKEL MINE.

Is located a short distance south of the city of Des Moines; is a shaft mine; owned and operated by the Van Ginkel Coal Company; depth of shaft, seventy-five feet; thickness of vein, four feet; ventilated by fan; miners employed, sixty; coal hauled in wagons.

PETER HEENEY,
Superintendent.

GIBSON COAL COMPANY.

This is a shaft mine; owned and operated by John B. Gibson; located in the south part of the city of Des Moines, on the Chicago, Rock Island & Pacific Railroad; depth, 105 feet; steam power; ventilated by furnace; thickness of vein, three to five feet; miners employed, eighty. This was formerly known as the Polk County Mine.

JOHN B. GIBSON,
Superintendent.

CAMP CREEK SHAFT.

This mine is located at Runnells, on the Wabash Railway; is a shaft mine; depth, forty feet; steam power; ventilated by fan; thickness of vein, four feet; most of the coal is mined by the Harrison mining machines; has been operated by the Camp Creek Coal & Mining Co.; is idle at present, the company having failed last spring.

J. N. PATTON,
Superintendent.

PROCTOR COAL COMPANY.

This is a new shaft, located a short distance south of the city of Des Moines; is owned and operated by the Proctor Coal Company; depth of shaft, 211 feet; ventilated by fan; steam power; thickness of vein, four feet; is as yet undeveloped.

WILLIAM HEDGE,
Superintendent.

Des Moines Coal & Mining Co. operate a shaft mine, located in South Des Moines; depth, 105 feet; thickness of vein, three to six feet; ventilated by fan; number of miners employed, forty-two; coal is shipped on the Chicago, Rock Island & Pacific Railroad and sold to city trade.

ED. TURBY,
Superintendent.

Samuel Dale is operating a shaft mine, located at Commerce; depth, 100 feet; thickness of vein, two and one half feet; ventilated by furnace; employs six miners in the winter; coal all sold to local trade; horse power used for hoisting.

WEBSTER COUNTY.

CRAIG MINE, No. 5.

This is a drift mine, owned and operated by the Craig Coal & Mining Company; situated at Kalo, on the Minneapolis & St. Louis Railway; thickness of vein, three and one half feet; is worked on the longwall system; ventilated by furnace; thirty-four miners employed.

JERRY DAWSON,
Superintendent.

CRAIG MINE, No. 6.

Is a drift mine, owned and operated by the Craig Company; thickness of vein, three and one half feet; longwall work; ventilated by furnace; forty-seven miners employed.

JERRY DAWSON,
Superintendent.

CRAIG SHAFT.

Is situated at Kalo; owned and operated by the Craig Coal Company; depth, fifty feet; the coal at this mine is a species of cannel coal; vein, three feet; horse power used for hoisting; ventilated by fan; sixteen miners employed.

JERRY DAWSON,
Superintendent.

Keefe & Co. are operating two small drift mines, about one hundred yards apart; situated near Kalo, on the Minneapolis & St. Louis Railway; quality of coal, cannel; twenty-one miners employed; ventilated by furnace.

JOHN COONEY,
Superintendent.

CROOKED CREEK MINE, No. 1.

This is a drift mine; situated at Lehigh; is owned and operated by the Crooked Creek Coal & Mining Company; thickness of vein, three feet; ventilated by furnace; twenty miners are employed; coal is shipped on Crooked Creek & Webster City Railway.

J. L. DIXON,
Superintendent.

CROOKED CREEK, No. 2.

Is a slope mine, at Lehigh; owned and operated by Crooked Creek Coal & Mining Company; ventilated by furnace; thickness of vein, three feet; steam power used for hauling up slope; miners employed, 100.

J. L. DIXON,
Superintendent.

CROOKED CREEK SHAFT.

Is a new mine, opened recently, and as yet very little work has been done thereat; is situated at Lehigh, and is owned and operated by Crooked Creek Coal & Mining Co.

J. L. DIXON,
Superintendent.

William Barrowman, Patrick Cuff, Henry Carey, Thomas Foreman, and McBride, Phillips & Henlop, are each operating small drift mines, at and near Lehigh.

W. C. Beem is owner and operator of a drift mine, on Crooked Creek, near Lehigh; is worked on the longwall system; ventilated by furnace; thickness of vein, three and one half feet; fifty-three miners employed; coal is loaded on the Crooked Creek & Webster City, and the Mason City & Fort Dodge Railways.

W. C. BEEM,
Superintendent.

George W. Carey is operating a drift mine at Lehigh; coal loaded on the Crooked Creek Railroad; is worked on the longwall system; thickness of vein, three and one half feet; number of miners employed, thirty-five; ventilated by furnace.

S. W. Carey operates a drift mine on Crooked Creek, near Lehigh; coal loaded on the Mason City & Fort Dodge Railroad; thickness of vein, three and one half feet; miners employed, thirty; ventilated by furnace.

C. S. & F. Carey operate a slope mine; situated on Crooked Creek, near Lehigh; coal loaded on Mason City & Fort Dodge Railroad; miners employed, sixty; thickness of vein, four feet; ventilated by furnace.

JOHN HODGESON,
Superintendent.

Carlson Coal Co. operate a drift mine at Kalo; miners employed, fifteen; thickness of vein, three and one half feet; ventilated by furnace; coal loaded on Minneapolis & St. Louis Railroad.

Collins Bros. own and operate a slope mine near Coalville; coal loaded on the Mason City & Fort Dodge Railroad; miners employed, 100; thickness of vein, six to eight feet; ventilated by furnace.

A. Davis, Albert Stine, James Martin, Isaac Rhodes, are each operating small drift mines in the vicinity of Coalville, for the local trade; from two to five miners employed in each.

LIST OF FATAL ACCIDENTS.

CHARLES JOHNSON, KILLED AUGUST 8, 1887.

An inquisition holden at the Garver Coal Mine, in Capitol Park, Polk county, Iowa, on the 8th and 9th days of August, 1887, before I. W. Griffith, coroner of said county, upon the body of Charles Johnson, there lying dead, by the jurors whose names are hereto subscribed. The said jurors, upon their oaths do say, that the said Charles Johnson came to his death at or about 2 o'clock, p. m., August 8th, at the Garver Coal Mine, in Capitol Park, Polk county, Iowa, while in the employ of said company, by means of the falling of slate from the roof of the room in which he was at work, and that the said accident and death were purely accidental, and not otherwise.

In testimony whereof, have hereunto set our hands the day and year above written.

CHARLES M. PORTER,
JEFFERSON STONE,
WM. RIDDLE,
Jurors.

Attest:

I. W. GRIFFITH, *Coroner of Polk County.*

WILLIAM COLE, KILLED FEBRUARY 16, 1887.

An inquisition holden on the 16th day of February, 1887, before S. Q. Free, justice of the peace in and for Washington township, Greene county, and acting coroner, upon the body of William Cole. The said jurors, upon their oaths do say, that the deceased came to his death by being caught and crushed

under a large lump of coal in the Keystone shaft, No. 3, in said county, and from the evidence it was shown that it was an unavoidable accident, and the cause of his death cannot be attached to the negligence of any one.

JEROME TYSINGER,
E. McDOWELL,
A. LLOYD,
Jurors.

Attest:

S. Q. FREE, *Justice of the Peace, Acting Coroner.*

WILLIAM ANDREWS, KILLED JANUARY 16, 1888.

An inquisition holden at the Union Coal mine, at Sevastopol, Polk county, Iowa, on the 16th and 17th days of January, 1888, before I. W. Griffith, coroner of said county, upon the body of William Andrews, there lying dead, by the jurors whose names are hereto attached. The said jurors, upon their oaths do say, that the said William Andrews came to his death at or about 2 o'clock, p. m., Monday, January 16, 1888, in the mine of the Union Coal & Mining Co., Sevastopol, Polk county, Iowa, by means of falling slate while working in his room in said mine, and said casualty and death was caused by his own neglect, and not otherwise.

In testimony whereof, the said jurors have hereunto set their hands this 17th day of January, 1888.

E. E. JOHNSON,
A. W. MOORE,
GERALD SULLIVAN.

Attest:

I. W. GRIFFITH, *Coroner of Polk County.*

G. D. HATFIELD, INJURED FEBRUARY 25, 1888.

Mr. Hatfield was injured while sinking an air shaft at the mine of the Union Coal & Mining Co.'s mine in Sevastopol, Polk county, on the 25th day of February, so that he died the following day. No inquest was held. He was working in the bottom of the shaft, which was down over 100 feet, and the man on top was engaged in letting down timber, when one of the pieces, slipping out of his hands and falling to the bottom, struck Mr. Hatfield on the head, from the effects of which he died on February 26, 1888.

E. T. HILL, KILLED FEBRUARY 17, 1889.

An inquisition holden at Van Meter, in Dallas county, Iowa, on the 18th day of February, 1889, before A. D. Whinery, justice of the peace and acting coroner, upon the body of E. T. Hill, there lying dead, by the jurors whose names are hereto subscribed. The said jurors, upon their oaths do say, after having heard the evidence and examining said body, we do find that the deceased came to his death by an accidental fall to the bottom of the shaft through a hole in a broken and unsafe cage in the Chicago & Van Meter Coal Co.'s mine at Van Meter, thereby receiving those mortal wounds.

Given under our hands at the time and place above mentioned.

PAUL GRABILL,
T. E. MOORE,
EDWARD MARTIN.

Attest:

S. D. WHINERY, *J. P., and Acting Coroner.*

LIST OF NON-FATAL ACCIDENTS.

July 2, 1887, C. J. Cook, a miner, was badly injured in the back by fall of slate in the No. 3 mine of the Keystone Coal Co., at Surry, Greene county.

July 12, 1887, John Solomon, a miner in the Buckeye mine, near Surry, Greene county, had a leg broken by fall of slate.

July 22, 1887, John Haydon, a mule driver in the mine of the Union Coal & Mining Co., in Polk county, was badly crushed by fall of slate in the entry.

September 14, 1887, William King, a miner, had a leg broken by fall of coal in the mine of the Buckeye Coal Co., near Surry, Greene county.

September 19, 1887, Moses Garland, a miner, was injured by fall of slate in the mine of S. W. Carey, at Lehigh, Webster county; not serious.

November 21, 1887, E. Hankinson, a laborer at the mine of the Eureka Co., in Sevastopol, Polk county, had the bones in his legs fractured by being struck with a lump of coal, while at work on the platform.

December 5, 1887, Metz Lower, a miner in the Chicago & Van Meter Coal & Mining Co., at Van Meter, Dallas county, had a leg broken by fall of coal.

January 7, 1888, John Walquist, a miner, had a leg broken by fall of slate in his room in the mine of the Garver Coal Co., Polk county.

January 13, 1888, Roy Dunbar, a boy, aged 13 years, was seriously injured by falling down the shaft of the Bukeye Coal Co., near Surry, Greene county.

January 24, 1888, Henry O'Connell, mule driver in the mine of the Northwestern Coal Co., at Moingona, Boone county, had two ribs broken while riding on top of loaded car and being caught against the roof.

January 25, 1888, William McBirnie and Arthur Conway, miners in the mine of Samuel McBirnie, near Boonesboro, Boone county, were burned about the face by premature explosion while charging a shot; not very serious.

September 26, 1888, S. Johnson, a miner in the mine of the Garver Coal Co., Polk county, was injured about the head by discharge of a shot; not serious.

October 8, 1888, George Blades, miner, in the Garver mine; Polk county, had one hand mashed by falling slate. Off work ten days.

October —, 1888, Swan Peterson, miner in the No. 6 mine of the Craig Coal Co., at Kalo, Webster county, was very badly injured in the spine by fall of slate.

October 15, 1888, Charles Christenson, mule driver in the Garver mine, Polk county, had an arm broken by kick from a mule. Was off work six weeks.

November 7, 1888, Dennis Cooney, a miner, in the mines of the Polk County Coal Co., was injured on the head by a shot; not serious.

November 12, 1888, Thomas Stringer, miner, in the No. 6 mine of the Craig Coal Co., at Kalo, Webster county, was injured in the spine by fall of coal; very serious.

November 30, 1888, James Garver, miner in the Coon Valley mine, Polk county, was injured by a shot; no bones broken; seriously bruised about the head and lower limbs.

December 2, 1888, Peter Moline, miner in the Manbeck mine, of the Coon Valley Coal Co., Polk county, was very seriously injured by fall of roof.

December 3, 1888, Ira Wrolley, a workman in the mine of the Garver Coal Co., Polk county, was caught by the cage at bottom of shaft and slightly hurt; not serious.

December 5, 1888, Thomas Hull, pit boss at the mine of the Garver Coal Co., had his foot crushed by fall of slate.

December 11, 1888, John Kerchelski, Fred. Hill, Thomas A. Ray and Isaac Talle, workmen in the mine of the Dawson Coal Co., at Dawson, Dallas county, were injured while going down the shaft by a too rapid descent of the cage; no bones broken, but severely sprained and shaken up.

January 18, 1889, Gus Ring, miner in the Coon Valley mine, Polk county, was injured by fall of slate; not serious.

February 8, 1889, Thomas Sand, miner in the Craig Coal Co.'s mine, at Kalo, Webster county, had one finger broken and hand badly cut.

April 26, 1889, Robert Spencer, miner in the No. 3 mine of the Keystone Coal Co., at Surry, Greene county, was injured by fall of coal; not very serious.

TABLE
FOR YEAR ENDING

COUNTY.	Production of lump coal, in tons.	Production of nut coal.	Number of tons shipped out of State.	Total number of mines.	Shipping mines.	Local mines.	Total number miners employed.	Other employes.
Boone	140,142	17,517	19,965	21	13	8	638	29
Dallas	48,622	5,958	1,200	9	2	4	134	4
Greene	109,042	22,672	.....	5	4	1	225	8
Guthrie	18,680	.....	.....	24	.....	24	121	.....
Polk	300,666	.....	680	16	15	1	726	54
Webster	161,915	13,378	.....	35	14	21	882	17
Hamilton	6,489	.....	.....	1	.....	1	40	.....
Story	2,000	.....	.....	1	.....	1	20	.....
Totals	787,550	144,177	81,225	123	48	75	2,457	104

No. I.

JUNE 30, 1888.

Shaft.	KIND OF MINE.			KIND OF POWER USED.			VENTILATING POWER USED.			ACCIDENTS.		Amount of money paid for mining.	Amount of money paid to other employees.	Total value of product at mines.
	Slope.	Drift.	Steam.	Horse.	Hand.	Fan.	Furnace.	Natural.	Fatal.	Non-fatal.				
15	1	3	8	10	3	5	11	5	1	1	125,964.05	50,406.50	361,313.80	
16	1	3	6	1	5	2	6	6	3	1	45,280.00	19,250.00	85,660.00	
5			24	2		3			1	1	163,319.00	52,705.00	196,723.40	
11	13			11	13		5	21			28,406.00	5,607.90	46,700.00	
10	1	3	3	3	1	30	8	3	3	1	302,857.28	129,354.46	615,296.00	
3	2	30	3	15	17		17	18		1	150,003.42	51,616.62	250,865.00	
	10			1	9			10			6,480.00	1,800.00	12,960.00	
			31								2,000.00	1,125.00	3,000.00	
56	4	63	3	43	48	30	40	62	4	12	775,019.75	297,097.73	812,083.00	

TABLE
FOR YEAR ENDING

COUNTY.	Production of lump coal in tons.	Production of nat coal.	Number of tons shipped out of State.	Total number of mines.	Shipping mines.	Local mines.	Total number miners employed.	Other employes.
Boone.....	112,401	12,214	9,587	31	14	7	398	170
Dallas.....	64,610	4,820	2,500	7	2	5	190	65
Greene.....	80,035	14,280	10,000	4	4	1	172	70
Guthrie.....	13,412			19		19	107	19
Polk.....	278,765	71,274	83,132	17	15	2	774	353
Webster.....	138,176	17,477	6,777	32	15	17	543	121
Hamilton.....	2,500			8		5	18	6
Totals.....	679,890	136,105	82,006	105	50	56	3,402	701

No. II.

JUNE 30, 1889.

KIND OF POWER.		KIND OF OPENING.		KIND OF VENTILATION.		ACCIDENTS.		Amount of money paid for mining.	Amount of money paid to other employes.	Total value of product at mines.			
Steam.	Horse.	Hand.	Shaft.	Slope.	Drift.	Fan.	Furnace.				Natural.	Fatal.	Non-fatal.
18	3	3	10	8	3	6	12	3			\$ 116,800.45	\$ 52,048.03	\$ 347,569.27
3		4	2	1	4	2	1	4	1	4	69,460.00	38,977.00	113,875.00
4			5			3	1		1		74,545.08	30,231.00	100,396.08
15		4	15	4		2	17				20,380.00	6,273.00	35,330.00
15	1	1	14	3		13	14			9	271,823.69	119,746.83	514,730.35
3	3	26	3	16	13	1	15	6		3	130,725.53	50,985.64	244,760.15
		5		1	4			5			2,500.00	690.00	5,000.00
59	4	43	32	46	28	25	35	45	1	17	\$ 738,165.30	\$ 279,067.50	\$ 1,308,773.82

During the two years ending June 30, 1889, there has been five fatal and twenty-nine non-fatal accidents in and about the mines in this district, against ten fatal and nine non-fatal for the two years previous. This shows a pleasing decrease in the number of lives lost, which is no doubt largely attributable to the greater care and watchfulness on the part of the operators and pit bosses of the different mines, and to the more stringent and efficient laws that have been enacted of late years for the better protection of the lives and health of the men engaged in the dangerous occupation of coal mining. Of the fatal accidents, Polk county is charged with the greatest number, three out of the five having occurred in this county; but owing to the very dangerous nature of the roof in some of the mines, the only wonder is that the number is not much greater, only two having been killed while actually engaged in mining coal, and these by falls of roof in their working places; both were caused by the timbers that had been put up to support the roof being knocked out by blasting, and the men going to work loading out the coal without first resetting them, as they certainly should have done for their own protection. Of the non-fatal accidents, also, Polk county is charged with the greatest number, twelve out of the twenty-nine. Six of these were caused by falls of roof, but in most cases the injuries were not serious, some of them being off work only a few days. The non-fatal accidents show a large increase over the two years previous, but I am satisfied that we really did not have any more, only that we got report of about all that occurred this time, which was not the case before, as some of the operators were very careless about making reports of accidents to this office unless they terminated fatally, and it has taken some time to convince them that *all* accidents in and about the mines should be so reported. In comparing the accidents with the out-put of coal for the past two years, we find there has been 1,737,791 tons of coal mined, and one life lost for each 347,558 tons mined; one non-fatal accident for each 59,923 tons; one casualty, including fatal and non-fatal, for each 51,111 tons; and taking into consideration the number of men employed, we find there was one life lost for each 644 men in and about the mines; one non-fatal accident for each 111 men, and one casualty for each ninety-four men employed.

SCALES TESTED.

The Twenty-second General Assembly passed a law requiring each State Mine Inspector to procure from the State Superintendent of Weights and Measures a set of test weights, for the purpose of testing, as often as required, the scales used at the mines in weighing the

miners' coal. In accordance therewith I ordered two fifty-pound weights, but for some unexplained reason there was a delay of several months before they arrived. However, when they did come I made known to the miners throughout the district that I was ready to test the scales whenever called upon to do so; but up to the present time I have had very few calls for that purpose. There is some complaint among the miners at my only having two fifty-pound weights to make the tests with, they claiming I should have at least 500-pounds; but I am satisfied that just as accurate a test can be made with 100-pounds as with a greater weight, by first trying them with the scales empty, then at different times during the loading, and after the car is full; and the difference in cost and inconvenience in transporting from one place to another 100 pounds or 500 pounds can easily be imagined. Following will be found a report of scales tested, the condition in which they were found, and what steps were taken in reference to each:

December 13, 1888, tested two sets of scales at the mine of W. C. Beem, at Lehigh, Webster county, one set railroad and the other wagon scales, and found them both correct.

December 13, 1888, tested the scales at the mine of C. S. & F. Carey, and found them all right.

December 13, 1888, tested the scales at the mine of S. W. Carey, Lehigh, Webster county. These are five-ton, or wagon scales, but are used for weighing the miners' coal. A hopper is built upon the scale, the coal dumped into that, and after being weighed, is allowed to fall into the railroad car. I found this scale weighed four pounds short in 100, but upon an examination being made the trouble was discovered and adjusted; after which they were all right.

December 13, 1888, tested the scales at the mine of George Carey, at Lehigh, Webster county, and found them weighing correctly.

December 14, 1888, tested the scales at the No. 2 mine of the Crooked Creek Coal Co., at Lehigh, Webster county, and found them all right.

December 14, 1888, tested the scales at the No. 1 mine of the Crooked Creek Coal Co., and found that the miners were fully justified in the complaints they had made, as 300 pounds would not turn the beam. I then notified the superintendent that they must be repaired at once. They immediately went to work at them, and the next day, December 15th, I tried them again, but found they were very little better. The superintendent said he would have them taken all apart and the bearings cleaned, and if that did not do, he would get an entire new set of bearings. I then made arrangements with a committee of miners to keep my test weights, and they to make the test when they were ready and report the result to me, as it being near the end of the

week I did not want to wait there until it was done. December 21st I received notice from the committee that they had made the test and it was entirely satisfactory.

April 29, 1889, tested the scales at the mine of the Garver Coal Co., Polk county, and found them in terrible condition, in fact, after the car was half loaded they would not weigh at all, 1,000 pounds having no effect upon the beam either one way or the other, and any pretense at weighing was merely a farce. I asked the weigh-boss how long they had been in condition? The answer was they never were right. I then notified the superintendent that work would have to be suspended at once until the scales were repaired; this was done and men put to work on them. It would be too long a story to give an account of the different visits I made to these scales before they were in such condition that I would accept them as correct; suffice to say, that I was there on May 3d, 16th and 25th, and on the latter date they would break at ten pounds.

LITIGATION.

I am very sorry to say that I have been compelled to invoke the aid of the courts to enforce the requirements of the mining law at three different mines during the last two years. It was greatly against my desire to do this, and I think the operators of the mines that were enjoined will not deny that I gave them ample time before resorting to harsh measures. The first of these was at the mine of C. A. Sherman, near Boonesboro, Boone county, on the 16th day of December, 1887. I applied to Judge Miracle, of Webster City, for an injunction, as I had previously notified Mr. Sherman to put safety catches and covers on his cages, safety gates at top of shaft, brake on drum, and open up the traveling way to the escape shaft, which was entirely closed up; all of which he failed to do, and evidently had paid no attention to my request. This application the judge refused to grant, his ruling being that the closing up of a mine was a serious matter, and he did not feel disposed to do so without giving the defendant a chance to be heard in his own behalf, and set the 30th day of December, 1887, for the hearing, at Webster City, Hamilton county, and notified Mr. Sherman accordingly. In the meantime, Mr. Sherman, who knew his mine was not complying with the law, and that he would stand no show in court trying to defend his position, went to work at once on the repairs asked for, and, a few days before the time set for the hearing, notified me that he had them completed and would like if I would come and see him before going to Webster City. This I done, and found that all the improvements asked for had been made, and, as there was now no need for the injunction, I did not appear before the court and the case was dismissed. In this case the same result was attained without the injunction as would have been

had it been granted when asked for, and no harm was done. But, suppose, in the time between the application being made and the day set for the hearing Mr. Sherman had continued to work, as he could have done under the ruling of the court, and an accident had happened whereby some of the men had lost their lives, who would have been responsible for the same? Not the Inspector certainly, for he had done all he could in this matter when the injunction was applied for.

On December 13, 1887, I visited the mine of A. Heaps & Co., near Bonesboro, Boone county, and found forty-six men employed in the mine, requiring a volume of 4,600 cubic feet of air per minute at least, as the mine is worked on the single entry system, but instead of 4,600 feet the instrument would register but 1,178 cubic feet per minute, and that right on the entry in front of the furnace, at any other part of the mine it would not register anything. I called the attention of the superintendent to the condition of his mine, and notified him to improve the ventilation at once, which he agreed to do. I also called his attention to the fact that his mine had always been a little deficient in ventilation, and if not improved on my return, I should certainly close the mine up; but notwithstanding all this warning, on December 30, 1887, no improvement had been made. I thereupon applied to Judge Stevens, of Story county, for an injunction to restrain them from operating the mine until made to conform with the provisions of the mining law; this application was granted, and the mine was closed on January 6, 1888. I was notified by the owners of the mine that the ventilation was now good, and they wanted me to come and reinspect the mine, as they were anxious to get started to work again. Accordingly, on January 7, I visited the mine, and found it very much improved, having 6,860 cubic feet of air per minute, and fairly well conducted to the working places; after cautioning them very strongly not to allow the mine to get in such condition in the future, and they paying all costs, the injunction was dissolved and work resumed.

The other place at which the aid of the courts was asked, was at the mine of the Rippey Coal Co., at Rippey, Greene county. The law, in reference to escape shafts is that, the escape shaft and main shaft shall be separated by at least 100 feet of natural strata, but says nothing in reference to any buildings near the top of the escape shafts. Now, while the escape shaft at the Rippey mine was 100 feet from the main shaft, there was a continuous tier of buildings from the main shaft to and over the escape shaft, and virtually it was no escape shaft, as a fire in any of the buildings would have taken the whole thing, and anyone in the mine at the time could have no possible

chance to escape from certain death; and I suggested to Mr. W. E. Russell, the manager, the advisability of making a tunnel from the top of the escape shaft back from the buildings, at least fifty feet, so as to make a safe outlet. This he agreed to do, but after repeated visits, and not finding it done, I told Mr. Russell that I would apply to the court and have his mine closed if not done at once. Then he intimated that his mine filled all the requirements of the mining law, and he did not believe that I could compel him to make any changes. My reply was that the meaning of the law in reference to escape shafts was safety, and his certainly was not safe. Then he agreed, if I would give him a few more days' time, he would do as I requested. This I agreed to, provided work was started on it the next day. This was June 18, 1888, and I left there with that understanding. On June 28th, I returned and found nothing had been done. I then applied to Judge Macomber, of Crawford county, for an injunction, which was granted, and the mine closed up. They then went to work at the tunnel, and had it completed in a few days, after which they paid all costs, the injunction was dissolved and work resumed. Now, it certainly would have been better, in a financial way, for these operators to have complied with the law without waiting to be compelled to do so, for, besides having the court costs and sheriff's fees to pay, their mines were idle for some time, and some of them at just the busiest season of the year.

STRIKES.

There has fortunately been no general strike in the mines of this district during the past two years, although a few local strikes have occurred, the longest of which was at Lehigh, in Webster county, on the 28th of April, 1888. The operators of the mines in this field made a proposition to their miners to reduce the price of mining from \$1.00 to 80 cents per ton for the summer months, and at the same time presented a contract for the miners to sign, waiving their right to have the coal weighed before being screened, as provided in chapter 54, Acts of the Twenty-second General Assembly. This the miners refused to accept, and the consequence was a strike ensued which lasted from the 28th of April, 1888, to the 17th of September, 1888, although the Crooked Creek Coal Co., the largest producers in this field, had quite a number of men at work some time prior to the date last mentioned, having imported a lot of men from the iron mines of Wisconsin; but they not being practical coal miners, the output of coal was small and the mines were not operated to their full capacity until the winter price of \$1.00 per ton was again offered, and

the strike was officially declared off by the old miners. The contract in regard to the weighing was signed by all who went to work. The miners claim that the strike was not so much against the signing of the contract, as they fully recognized the folly of the handful of men in that field standing out against it when the majority of the largest mines of the state had signed it, and were at work; but they thought the reduction of 20 cents per ton was entirely unjust and uncalled for. On the other hand, the mine-owners agreed that the nature of the roof and the condition of their mines was such that it was imperative that they should be kept going during the summer, and in order to do this coal would have to be put on the market at a very low figure, as prices ruled lower than in former years; and even at 80 cents for mining, there would be no money in it for them, but it was simply to have their mines in readiness for the following winter. Be that as it may, it was rather a bitter strike and engendered considerable hard feeling between employers and employes, and entailed hardships and almost want upon some of the miners and their families.

There was a strike of two months' duration at the mines of the Craig Coal Company, at Kalo, in Webster county, commencing on February 17th and ending April 17, 1888. It has been customary in this field to make a reduction in the price of mining generally about the 1st of April and an advance again about the 1st of October of each year. But it seems the condition of the coal trade was such during the latter part of the winter of 1887-8 that this company could not sell their coal at any prices that would justify them in operating their mines at the price then being paid for mining and proposed a reduction. Although the amount they wished to take off was not named, the miners flatly refused to submit to the reduction until the usual time. The consequence was a strike, ending April 17, 1888, at which time a 12½ cent reduction was made.

The miners at most of the mines near Boonesboro and Moingona, in Boone county, were out for a few weeks in December, 1888, and January, 1889. The contract under which they were working at these mines was to the effect that \$1.00 per ton should be paid for mining, when the selling price of coal in the market was not over \$2.20, and when coal advanced above that price, the miners were to have one half this advance. Under this contract they were paid during November and part of December, \$1.12½ per ton. But owing to the extremely mild weather, the demand for coal was light, and the mine owners were obliged to reduce the selling price in order to hold their trade. The miners refused to accept their share of the reduction and were idle for a few weeks, but finally went to work at \$1.00 per ton.

There was a strike of one week's duration at some of the mines at Des Moines, Polk county, on the 1st of May, 1889. The prices then being paid for mining was eighty cents per ton for the summer months and ninety for the winter. The operators wanted to reduce it to seventy in summer and eighty in winter. This the miners refused to accept and were idle one week, at which time the mine owners agreed to pay the old price, and work was resumed.

SUMMARY.

During the two years just passed, all the mines in the district have been visited as often as possible, some oftener than others, just as the condition of each seemed to demand. Quite a number of them are small mines, operated for the local trade entirely, and consequently do very little work during the summer months; in fact, the majority of the mines in this district do not work over half time from the first of April until the first of September, so that the greater part of our year's work really has to be done in seven months, for there is no use in visiting a mine when it is not in operation, as at that time the ventilating machinery is not at work, and it would be impossible to make a satisfactory inspection. Under these conditions it gives me great pleasure to be able to say that the sanitary condition of the mines is improving all the time, as a reference to the table of improvements will show. There have been eleven new fans and five furnaces erected during the two years, and the law relating to safety appliances is being very generally observed, not one of the accidents that have occurred being traceable to any neglect or failure on the part of the mine-owners to furnish everything that the law requires for the safety of those in their employ. The tables accompanying this report, giving the out-put of coal for the past five years, show a gradual decrease in the production. Although the table shows the out-put for the year ending June 30, 1888, to be larger than for the previous year, such is really not the case, as prior to 1888 no account was made of the nut and pea coal, while since that time that product is counted in with the lump. The year ending June 30, 1889, shows the smallest out-put for several years, but the most of this can be accounted for by the extremely mild winter of 1888-9. During the early part of that season, that is, August, September, October and November, the prospects were very bright, the demand for coal being good, and all the miners had all they could do, and in many places at better prices than formerly, but the weather continuing warm, the demand fell off, so that after December 1st most of the mines did not work half time, as it was impossible to sell the coal at any price. This condition of affairs

has been very disastrous to the mine-owners, as many of them had been at considerable expense in getting their mines in readiness for a good season's work, and the loss to them, financially, has been very great. Then, again, the number of mines in operation has been greatly reduced. At the beginning of the biennial period, July 1, 1887, there were 139 mines in operation in this district; at the close, June 30, 1889, there are 105—a reduction of 34, and this of itself has had considerable to do with the reduced out-put of coal.

I have endeavored to show, in the accompanying tables, the amount of money paid for mining and other labor in and about the mines, and the actual value of the total product; but the amount as shown paid to miners and laborers does not, by any means, represent all the expense connected with the operation of the mines, as we get no report of the money paid for timber, rails, mules, equipment, and other incidental expenses that it would be impossible to enumerate, and which form no inconsiderable part in the expense attached to the operation of mines.

JAS. E. STOUT,
Inspector Third District.