

SEVENTEENTH BIENNIAL REPORT

OF THE

STATE MINE INSPECTORS

FOR THE

Two Years Ending June 30, 1914

TO THE

GOVERNOR OF THE STATE OF IOWA

Printed By Order of the General Assembly

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STATE MINE INSPECTORS.

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District No. 2—RHYS T. RHYS, Ottumwa.

District No. 3—EDWARD SWEENEY, Des Moines.

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FIRST DISTRICT

BIENNIAL REPORT OF THE
FIRST DISTRICT.

COUNTIES COMPRISING THE FIRST DISTRICT.

APPANOOSE
LUCAS
TAYLOR
ADAMS

MONROE (part)
PAGE
WAYNE

W. E. HOLLAND, INSPECTOR,
Albia, Iowa.

LETTER OF TRANSMITTAL.

HON. GEO. W. CLARKE, Governor of Iowa:

SIR.—I have the honor to submit to you my first report of the First Inspection District, covering a period of eleven months' service, and furnish such data as was available from the thirteen months' service of my predecessor, for the biennial period ending June 30, 1914.

Very respectfully,

W. E. HOLLAND, Albia, Iowa.

Inspector District No. 1.

REPORT OF FIRST DISTRICT

The First Inspection District of Iowa is composed of the following counties: Appanoose, Monroe (part), Wayne, Lucas, Taylor, Page and Adams. I assumed the duties of Inspector for this district on August 1st, 1913, being appointed by Gov. Clarke to succeed Mr. J. E. Jeffreys, who resigned to go with the Consolidation Coal Company at Buxton. During the year ending, June 30, 1914, there was produced 2,894,167 tons of coal in this district which was an increase of 80,378 over the year previous.

During the biennial period ending June 30, 1914, there was produced 5,707,956 tons of coal, an increase of 352,259 tons over the last biennial period.

Employment was given to 5,093 miners, 1,263 other underground employees, and 637 top men in and around the mines of this district during the last fiscal year. I consider the increase of tonnage mentioned above a remarkable showing over the last biennial period for the reason that last winter being a very open winter the mines in a large part of the district did not work more than half time. This is positive evidence of better facilities for hauling coal under ground, and also for handling the coal at the surface. A number of the mines in Appanoose county have introduced mining machines of the undercutting type of various makes that are giving splendid results. A Sullivan machine at one of these mines, with the aid of three men, mined 700 feet of longwall face two and one-half feet deep in eight hours. This would give approximately 150 tons of coal. A number of improvements have been made throughout the district during the last year at some of the mines as follows. At the Thistle Coal Co.'s No. 2 mine a new air and escape shaft was sunk at the face of the north workings. Rosebud Coal Co. of Brazil also sunk an air and escape shaft. Smoky Hollow Coal Co. No. 8, a new air and escape shaft. Albia Coal Co., a new air and escape shaft. Wapello Coal Co. No. 5, a new air and escape shaft. At the Prairie Block Coal Co.'s mine at Streepville, and also at Phillips Fuel Co.'s mine No. 11 at Foster the management was induced to change the old and antiquated wooden cages for new and up to date steel ones, these being more efficient

for the company and also more safe and reliable for the men who are compelled to ride on them. The Dewey mine was also ordered to change its cages before resuming work. The following new mines have either been sunk or are sinking at this time: Seymour Coal Co., east of Seymour on the C., R. I & P. R. R. Smoky Hollow Coal Co. No. 9, northwest of Avery on the north track of the C., B. & Q., near the old Whitebreast property at Chisholm. Eagle Coal Co., north of Centerville. Central Iowa Fuel Co. No. 2, 15 miles northeast of Chariton on the Allerton branch of the C., R. I. & P. Wappello Coal Co.'s mine No. 7, 3 miles west of Hiteman. Croation Coal Co., northwest of Albia, and the Consolidation Coal Co.'s mine No. 18, 15 miles west of Buxton.

The No. 6 mine of the Smoky Hollow Coal Co. was abandoned.

On the whole I find a reasonable disposition on the part of the operators to comply with the recommendations of the inspector regarding the mines being kept within the requirements of the law, and I have not encountered any serious difficulties from anyone during my eleven months of service of the last fiscal year. No strikes nor lockouts occurred in the district during that time among the miners, but a spirit of harmony has pervaded and prevailed throughout during the last year.

Some other improvements are needed in the district which will be made (just as soon as circumstances will permit) which will be a benefit to both miners and company.

As much has been before the general public lately pertaining to Safety First, I here append a poem composed by me relating to "Safety First" in mining.

"SAFETY FIRST."

Is there a slogan for all mankind,

Yes! Safety First;

One thing we should always keep in mind,

Is Safety First.

When danger comes that's beyond our ken,

May we quit ourselves like noble men,

And give our help to each other then;

In Safety First.

You leave your home, to the mine you go,

Then Safety First,

To barter with the danger and death below,

Again Safety First.

All through the day your vigil keep,

Your mind alert, you must not sleep,

Or you may have cause to wail and weep;
For Safety First.

In the next place to yours the top is loose,
Take Safety First.

"I'm not his keeper," is no excuse,
But Safety First.

He may be green, don't know the way
To protect himself, or again, he may
Be bold and foolish enough, to say:
"What's Safety First?"

When you are preparing your daily shot,
Mind Safety First.

To the shot firer's perilous, gambling lot,
Give Safety First.

"He is being well paid," you may reply,
On his safe return his babes rely,
And he, like you, needs a good supply,
Of Safety First.

When Pay-Day comes, you surely need
This Safety First.

Few are exempt, of color, kind or creed;
Try Safety First.

You spend your money for rotten booze
The companionship of your wife refuse
And perhaps your children need some shoes;
For Safety First.

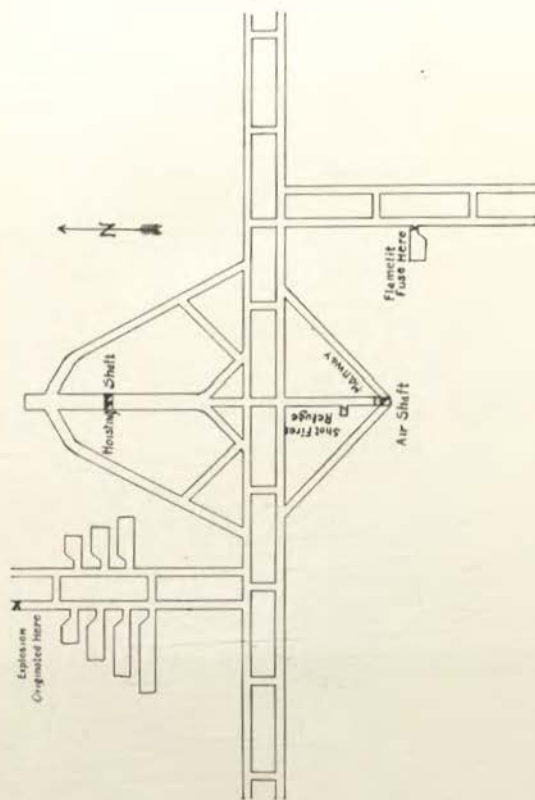
Now be a man and take a stand,
For Safety First,

"Till it can be said throughout the land
"All is Safety First."

Let manhood 'waken in each breast,
And say, "I know not what the rest
May do; I mean to do my very best,"
For Safety First.

—W. E. Holland, Albia, Iowa.

State Mine Inspector District 1.



DUST EXPLOSION AT MINE NO. 9, SMOKY HOLLOW COAL CO.

On the evening of March 1st, 1914, there occurred a dust explosion at the No. 9 mine of the Smoky Hollow Coal Co., located northeast of Avery, near the old Chisholm property of the White-breast Fuel Co., which for heat and intensity of flame has never been equalled, I believe, in the annals of coal mining in Iowa.

The explosion was caused by two blown out shots, at the face of the B X entry on the west side of the mine. These entries were being driven 12 feet wide at the time of the explosion, and the two holes mentioned were drilled in the coal on the west side of the entry. The shot was one of those, triangular in shape, so often found in mining and one of the most dangerous that can be drilled, having no heel at all and extremely heavy across the point. Both holes were parallel with each other, one in the bottom coal and the other in the top coal of the same butt shot.

The hole drilled in the bottom coal was evidently intended for a sump hole to mine the coal for the top hole, but instead of being started up on the face of the coal and drilled at an angle of inclination towards the bottom (as all properly placed sumpers are) it was started about six inches from the bottom of the vein and drilled practically level all the way in. Between this hole and the one drilled in the top coal was a large flat rock that jugged out of the rib and extended almost across the face of coal to be moved by the shots, and last, but not least, and by far too often prevailing, the shots were both drilled into the solid about two feet. The bottom hole going off first and failing to do anything but blow the tamping, it heated the air and threw the dust into suspension in that immediate vicinity, making prime conditions for an explosion, which occurred as soon as the top shot went off, because, it being dependent upon the success of the first hole that had so lamentably failed, it also blew the tamping, igniting the dust and caused the explosion. The force of the explosion blew the cage that was on top of the shaft out through the headgear, taking the top of the frame work and the sheave wheels with it as it went. The cage on the bottom was blown up the shaft about 75 feet, taking most of the buntons with it, and lodged cross wise in the shaft. The steps in the manway were blown entirely out, not a step nor a stringer remaining, and the casing was blown off the fan. There

was ample evidence everywhere that the entire mine had been filled with flame, miners' tool boxes everywhere were scorched and in No. 1 room on the C entry on the east side of the mine the flame lighted the fuse of a bottom shot and fired it. This was fully 600 feet distant from where the explosion occurred on the other side of the mine.

In all of this destruction and fire the shot firer was not scratched, nor a single hair of his head singed, because he was in a place of refuge in the solid coal (see cut) that I had the company make for him as soon as the mine was opened, and in less than ten minutes after the explosion he was being hauled out by a hand rope let down the manway to him.

The flame and heat in passing out the manway and air shaft after the steps had been blown out, dried the curbing (which had been water logged before) so thoroughly that it was a week before the water began to even trickle down again.

The pressure on the door of the shot firer's refuge was so great that it broke a plank 3 inches thick and 10 inches wide that he had it braced with. Following are the instructions I gave to the company which they immediately had printed and posted at the mine and followed out:

First—The company shall keep the mine well sprinkled and have all drillings placed in kegs and removed from the mine before the shots are fired.

Second—Have a place of refuge cut in the solid coal about 6 feet deep and 4 feet wide, make a heavy door not less than 4 inches thick and hung on the inside so it can be locked by placing a large bar across it inside.

Third—Shot firer must only light a few shots at one time, then retreat to the refuge, close and fasten the door, and remain inside until all shots have gone off that were lit. This to be repeated as often as necessary until all shots are fired.

Fourth—Positively no hole must be allowed to be drilled to a greater depth than the back of the cut.

Fifth—Not more than one kind of explosive shall be placed in any hole at one time no matter whether drilled in the coal or brushing.

APPANOOSE COUNTY.

This county is bountifully supplied with coal of excellent quality especially for domestic use. The vein worked is about 28 inches in thickness and is known as the Mystic seam because of its generous development at that place. This seam is remarkably characteristic and preserving almost unchanged certain features wherever it is found. The coal is split by a "clay band" in the center of the vein, then at the bottom of coal is another dirt band known as the "dutchman." In spite of the millions of tons of coal that have been taken from this county, there is by far the greater part remaining untouched.

The depth at which this seam is found varies from places where it lies exposed in the crop, to others where it is over 200 feet deep. The coal is conceded to be too light for forced draft, although many thousands of tons are used annually on railroads because of its being so much cleaner than the coal from some of the other counties. Large quantities are also shipped each year into Missouri and to northern Iowa, Minnesota and the Dakotas. The number of tons produced in this county last year was 1,239,916 which was an increase of 75,539 tons over the previous year.

The largest producing mine for the year was the Carbon Block Coal Co. No. 30, with 90,942 tons. The mine at Streepville of the Prairie Block Coal Co. was next with 82,475 tons. The Numa Block Coal Co. was next with 67,075 tons, and the Fowler & Wilson Coal Co. next with 62,466 tons. By a large majority the mines are worked longwall, conditions being specially adaptable to this system of working. With even a small degree of precaution the ventilation can be kept in splendid condition, and when complaints are made it is generally traceable to gross negligence on the part of the foreman. The mines that are worked room and pillar are as a rule more poorly ventilated than those that are worked longwall. A number of the mines are buying electric hoists and motors and are getting electricity from the Interurban Railroad Company to hoist and run many of the fans with. It being found cheaper than steam and by a large margin more efficient than the Gin hoist. Only one fatal and sixteen serious non-fatal accidents occurred during the year in this county. The majority of non-

fatal accidents were caused by falls of coal and are largely due to the miners neglecting to sprag the coal before starting to mine.

Besides the coal industry there has been developed since the last report a gypsum mine in the south part of Centerville. The mine is only in the development stage yet; they have been annoyed by large quantities of water, both during the sinking of the shaft, and also since then, with an inadequate class of pumping machinery for handling it. The grade of gypsum found is the best in the state showing by analysis to be 98 per cent pure. This could be made a paying proposition if some company with capital would take it over and equip it with the necessary machinery.

REVISED LIST OF COAL COMPANIES IN APPANOOSE COUNTY, 1914.

No. of Tons Produced	Name of Company	No. of Mine	Name of Superintendent	Address
Not Operating	Ashken Coal Co.	1	Wm. Porter	Mystie, Iowa
18,296	Ashken Coal Co.	1	Wm. Porter	Mystie, Iowa
22,298	Anthur Coal Co.	1	John Morris	Centerville, Iowa
20,720	Ashtabula Coal Co.	1	J. D. Keckler	Centerville, Iowa
26,720	Ashtabula Coal & Fuel Co.	2	P. J. Keckler	Centerville, Iowa
1,854	Beggs Coal Co.	1	Wm. Beggs	Mystie, Iowa
2,710.49	Brown & Hovens Coal Co.	1	Wm. Metcalf	Mystie, Iowa
90,247	Carlson Black Coal Co.	20	L. D. Crawford	Mystie, Iowa
44,118	Cenlar Coal Co.	1	L. Anderson	Centerville, Iowa
19,144	Cenlar Coal Co.	1	L. Anderson	Centerville, Iowa
22,253	Centerville Block Coal Co.	1	Alex. Darvael	Centerville, Iowa
19,797	Centerville Block Coal Co.	3	Alex. Darvael	Centerville, Iowa
39,647	Centerville Block Coal Co.	5	Alex. Darvael	Centerville, Iowa
Not Operating	Centerville Block Coal Co.	10	Alex. Darvael	Centerville, Iowa
42,552	Clark Coal Co.	1	Dan Clark	Centerville, Iowa
2,259	Coal City Coal Co.	19	E. M. Spangler	Coal City, Iowa
12,000	Coal City Coal Co.	20	E. M. Spangler	Coal City, Iowa
12,871.40	Diamond Block Coal Co.	25	D. Loebeck	Mystie, Iowa
3,280	Domestic Coal Co.	1	Walter Hall	Cladunati, Iowa
24,789	Eagle Coal Co.	1	F. Lundgren	Centerville, Iowa
28,551	Electric Coal Co.	5	F. E. Lee	Mystie, Iowa
11,227	Edgim & Barrett Coal Co.	5	Jas. Barrett	Mystie, Iowa
12,215	Exline Coal Co.	1	A. M. Twiley	Mystie, Iowa
12,215	Exline Coal Co.	1	A. M. Johnson	Mystie, Iowa
Not Operating	Exline Coal Co.	1	A. M. Johnson	Mystie, Iowa
62,466	Forster & Wilson Coal Co.	1	Dan Cushing	Edling, Iowa
4,573	Graham & Parker Coal Co.	1	H. O. Graham	Rathbun, Iowa
5,590	Grant Coal Co.	1	L. R. Grant	Centerville, Iowa
49,590	Harker Coal Co.	2	Rob't Hunter	Bradley, Iowa
13,400	Iowa Block Coal Co.	1	R. C. Coffey	Bradley, Iowa
23,966	Iowa Block Coal Co.	1	Lars Johnson	Mystie, Iowa
1,569	Ira A. Gulmin Coal Co.	1	Ira A. Gulmin	Edling, Iowa
4,239	Konatz Coal Co.	7	Wm. Koetz	Coal City, Iowa

REVISED LIST OF COMPANIES IN APPANOOSE COUNTY, 1914—Continued

No. of Tons Produced	Name of Company	No. of Mine	Name of Superintendent	Address
800	Lemurray Coal Co.		J. W. Lemurray	Myrtle, Iowa
3,900	Lowie Coal Co.		W. W. Lowe	Brazil, Iowa
20,400	Martin Block Coal Co.		Wm. Russell	Myrtle, Iowa
2,500	Martin Block Coal Co.		J. W. Martin	Myrtle, Iowa
3,900	Maryle Hill Coal Co.		J. W. Martin	Centerville, Iowa
1,315	McConville Coal Co.		Ed McConville	Centerville, Iowa
20,400	Myrtle Coal Co.	1	John Hitchins	Myrtle, Iowa
20,400	Myrtle Coal Co.	1	Jas. Harbidge	Myrtle, Iowa
67,075	Myrtle Coal Co.	1	Peter Thomas	Nunda, Iowa
	Oriental Coal Co.		G. H. Peterson	Centerville, Iowa
1,958	Rock Valley Coal Co.		Stephen Houser	Brazil, Iowa
1,071	Ronald Block Coal Co.		P. N. May	Exline, Iowa
4,813	Peacock Coal Co.		R. S. McGinn	Myrtle, Iowa
7,544	Phoenix Coal Co.		Wm. Russell	Exline, Iowa
2,300	Pratt Block Coal Co.		Geo. Winslow	Centerville, Iowa
82,775	Scandinavian Coal Co.	1	Chas. Johnson	Centerville, Iowa
17,000	Scandinavian Coal Co.	1	John Schrum	Centerville, Iowa
4,000	Smith Coal Co.		Al Broeze	Centerville, Iowa
2,000	Star Coal Co.		A. C. Smith	Myrtle, Iowa
1,500	Stearns Coal Co.		J. C. Stearns	Exline, Iowa
30,000	Sunshine Coal Co.	2	G. E. Sandson	Cincinnati, Iowa
30,000	Thistle Coal Co.	2	R. D. McKee	Cincinnati, Iowa
30,000	Thistle Coal Co.	5	D. Dinsing	Cincinnati, Iowa
7,313	Thistle Coal Co.	5	John Archibald	Centerville, Iowa
10,000	White Oak Coal Co.		T. E. Williams	Myrtle, Iowa
28,122	Wendland Coal Co.	30	John Olsen	Centerville, Iowa
4,500	Woodland Coal Co.			Centerville, Iowa

RAILROAD MINES IN APPANOOSE COUNTY.

Corporation, Firm or Owner	Mine No.	Location of Mine	Railroad Connection	Kind of Opening	System of Working	Power Used	Manner of Ventilating
Grant Coal Co.		East of Brazil	K. & W.	Shaft	Long wall	Steam	Fan
Lova Coal Co.		Northeast of Brazil	C. & W.	Slope	Room and pillar	Horse	Furnace
Lowell Coal Co.		Northwest of Brazil	C. & W.	Slope	Long wall	Horse	Furnace
Pennock Coal Co.		East of Brazil	K. & W.	Slope	Long wall	Horse	Furnace
Phoenix Coal Co.		Brazil	K. & W.	Slope	Room and pillar	Horse	Furnace
Phosphat Coal Co.		West of Centerville	K. & W.	Slope	Long wall	Horse	Furnace
Reynolds Coal Co.		East of Brazil	K. & W.	Slope	Long wall	Steam	Furnace
Union Block Coal Co.		East of Centerville	K. & W.	Shaft	Room and pillar	Steam	Fan
Center Coal Co.	1	West of Centerville	K. & W. & T. C.	Shaft	Room and pillar	Steam	Fan
Centerville Block Coal Co.	2	East of Centerville	K. & W.	Shaft	Room and pillar	Steam	Furnace
Stamminville Coal Co.	3	East of Exline	C. R. I. & P.	Slope	Room and pillar	Steam	Fan
Stanton Coal Co.		East of Exline	C. R. I. & P.	Slope	Room and pillar	Steam	Fan
Royal Block Coal Co.		East of Exline	C. R. I. & P.	Slope	Room and pillar	Steam	Fan
Exline Coal Co.	1	West of Exline	C. R. I. & P.	Shaft	Room and pillar	Steam	Fan
Thistle Coal Co.	2	East of Centerville	C. R. I. & P.	Shaft	Long wall	Steam	Fan
Thistle Coal Co.	3	West of Centerville	C. R. I. & P.	Shaft	Long wall	Steam	Fan
Armstrong Coal Co.		West of Centerville	C. R. I. & P.	Shaft	Room and pillar	Steam	Fan
Centerville Block Coal Co.	1	East of Centerville	C. R. I. & P.	Shaft	Long wall	Steam	Fan
Centerville Block Coal Co.	2	South of Centerville	C. R. I. & P.	Shaft	Room and pillar	Steam	Fan
Carlton Block Coal Co.	20	South of Centerville	C. R. I. & P.	Shaft	Long wall	Steam	Fan
Anchur Coal Co.		South of Centerville	C. R. I. & P.	Shaft	Long wall	Steam	Fan
Marion Coal Co.		West of Centerville	C. R. I. & P.	Shaft	Long wall	Steam	Fan
Smashing Block Coal Co.		East of Numa	C. R. I. & P.	Shaft	Long wall	Steam	Fan
Numa Block Coal Co.	1	East of Numa	C. R. I. & P.	Shaft	Long wall	Steam	Fan
Numa Block Coal Co.	2	East of Numa	C. R. I. & P.	Shaft	Long wall	Steam	Fan
Smashing Block Coal Co.		Centerville	C. M. & St. P.	Slope	Long wall	Steam	Fan
Unity Block Coal Co.		East of Rathbun	C. M. & St. P.	Slope	Long wall	Steam	Fan
Zonder & Wilson Coal Co.	1	West of Rathbun	C. M. & St. P.	Slope	Long wall	Steam	Fan
Forster & Wilson Coal Co.	2	Rathbun	C. M. & St. P.	Slope	Long wall	Steam	Fan
Beggs Coal Co.		East of Mystic	C. M. & St. P.	Shaft	Room and pillar	Horse	Furnace
Elgin & Barrett Coal Co.		East of Mystic	C. M. & St. P.	Slope	Long wall	Steam	Fan
Winfield Coal Co.	20	East of Mystic	C. M. & St. P.	Shaft	Long wall	Steam	Fan
Trautman Coal Co.	1	East of Mystic	C. M. & St. P.	Shaft	Long wall	Steam	Fan
Town & Rogers Coal Co.	2	East of Mystic	C. M. & St. P.	Slope	Long wall	Horse	Furnace

RAILROAD MINES IN APPANOOSE COUNTY—Continued

Corporation, Firm or Owner	Mine No.	Location of Mine	Railroad Connection	Kind of Opening	System of Working	Power Used	Means of Ventilation
Little Creek Coal Co.	1	Myrtle	C. & M. & St. P.	Shaft	Room and pillar	Horse	Purman Fan
Lorway Mine, Coal Co.	2	West of Myrtle	C. & M. & St. P.	Shaft	Long wall	Steam	Purman Fan
Adrian Coal Co.	3	West of Myrtle	C. & M. & St. P.	Shaft	Long wall	Steam	Purman Fan
Myrtle Coal Co.	4	West of Myrtle	C. & M. & St. P.	Shaft	Room and pillar	Steam	Purman Fan
Myrtle Coal Co.	5	West of Myrtle	C. & M. & St. P.	Shaft	Room and pillar	Horse	Purman Fan
Egypt Coal Co.	6	West of Myrtle	C. & M. & St. P.	Shaft	Long wall	Steam	Purman Fan
Diamond Block Coal Co.	7	West of Myrtle	C. & M. & St. P.	Shaft	Long wall	Steam	Purman Fan
Portless Coal Co.	8	West of Myrtle	C. & M. & St. P.	Shaft	Long wall	Steam	Purman Fan
McGuire & Sons Coal Co.	9	North of Centerville	A. & C.	Shaft	Room and pillar	Horse	Purman Fan
Centerville Block Coal Co.	10	North of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Griffin & Sons Coal Co.	11	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Brown & Bowers Coal Co.	12	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Clark Coal Co.	13	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Golden Coal Co.	14	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Margie Lyon Coal Co.	15	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Monterey Coal Co.	16	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Richmond Coal Co.	17	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Schram Coal Co.	18	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Smith Coal Co.	19	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Sunderland Coal Co.	20	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
White Oak Coal Co.	21	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Woodland Coal Co.	22	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Domestic Coal Co.	23	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Kentz Coal Co.	24	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan
Stearns Coal Co.	25	South of Centerville	A. & C.	Shaft	Room and pillar	Steam	Purman Fan

MONROE COUNTY.

This county, situated as it is in a highly productive coal belt, and so profusely supplied with railroads, has for a number of years been the largest coal producer in Iowa. The coal varies in thickness from two and one-half feet to eight feet in thickness and when cleaned and properly prepared is equal to any coal west of the Bituminous fields of western Pennsylvania and Virginia. The deepest mine in the county is the No. 3 mine of the Hoeking Valley Coal Company, being 312 feet in depth. One of the greatest and most expensive drawbacks to this county is the slate strata immediately overlying the coal. During the summer months this collects large quantities of moisture that comes in with the humid laden air and owing to the lime and iron pyrites found in the slate, this causes disintegration and large falls of roof occur making an exceedingly dangerous condition unless plenty of timber is used to forestall it. This county produced during the biennial period just closed 5,024,771 tons of coal, which shows an increase of 614,861 tons when compared with the previous report.

In view of the present conditions in the county, I predict a decrease in production during the period we have now entered upon. The largest producer during the year was the No. 5 mine of the Wapello Coal Company with 325,182 tons. The No. 8 mine of the Smoky Hollow Coal Company was next with 234,515 tons, and the next was the No. 3 mine of the Hoeking Coal Company with 200,824 tons. The Wapello Coal Company have just finished sinking their No. 7 mine which, while it will be good, will not equal their No. 5. The Consolidation Coal Company's new mine No. 18 is undoubtedly the finest equipped mine in the First District. The shaft is lined with concrete with steel buntens, and it also has I beams of steel in place of the ordinary wooden collars on both sides of bottom of the shaft for a distance of 300 feet or more. This shows excellent foresight, and economy on the part of the management, and beyond and above this it is a desirable factor of safety for the underground employees. This mine is operated entirely by electricity which is made on the premises. The Company intends to make the electricity at this plant for at least two or three other

mines which are to be sunk in the future. They have also installed mining machines of the undercutting type at this mine to mine the coal in the rooms before it is shot down.

There were seven fatal and thirty-five serious non-fatal accidents in this County during the year.

REVISED LIST OF COAL COMPANIES IN MONROE COUNTY, 1914.

No. of Tons Produced	Name of Company	No. of Mine	Name of Superintendent	Address
42,079	Albia Coal Co.	28	Homer H. Harris	Albia, Iowa
17,507	Consolidation Coal Co.	1	Edmund J. Richardson	Albia, Iowa
17,300	Creston Coal Co.	3	W. J. Richardson	Albia, Iowa
300,822.95	Hocking Coal Co.	3	W. G. Hodge	Hocking, Iowa
171,991.50	Hocking Coal Co.	4	W. G. Hodge	Hocking, Iowa
17,507	Hocking Coal Co.	4	W. G. Hodge	Hocking, Iowa
48,500	Trullinger Fuel Co.	11	Andrew Erskine	Postler, Iowa
224,515	Smoky Hollow Coal Co.	8	P. H. Hyatt	Avery, Iowa
24,605	Smoky Hollow Coal Co.	9	P. H. Hyatt	Avery, Iowa
51,605	Wapello Coal Co.	6	P. H. Waterman	Hiteman, Iowa
53,686	Wapello Coal Co.	7	P. H. Waterman	Hiteman, Iowa
Now Sinking	White Ash Coal Co.	7	W. A. Smith	Avery, Iowa
74,829				

RAILROAD MINES IN MONROE COUNTY.

Corporation, Firm or Owner	Mine No.	Location of Mine	Railroad Connection	Kind of Opening	System of Winding	Power Used	Means of Vent'g
Albia Coal Co.	1	South of Albia	M. & St. L.	Shaft	Room and pillar	Steam	Fan
Albia Coal Co.	2	Northwest of Albia	C. & N. W.	Shaft	Room and pillar	Steam	Fan
Groton Coal Co.	3	South of Albia	M. & St. L.	Shaft	Room and pillar	Steam	Fan
Hocking Coal Co.	4	Southwest of Albia	M. & St. L.	Shaft	Room and pillar	Steam and electricity	Fan
Stocking Coal Co.	5	South of Albia	C. & N. W.	Shaft	Room and pillar	Steam	Fan
Phillips Coal Co.	6	Southeast of Albia	C. & M. & St. P.	Shaft	Room and pillar	Steam	Fan
Wapello Coal Co.	7	Northwest of Hiteham	C. & N. W.	Shaft	Room and pillar	Steam	Fan
Wapello Coal Co.	8	Northwest of Hiteham	C. & N. W.	Shaft	Room and pillar	Steam	Fan
Wapello Coal Co.	9	Northwest of Hiteham	C. & N. W.	Shaft	Room and pillar	Steam	Fan
Wapello Coal Co.	10	East of Albia	C. & N. W.	Shaft	Room and pillar	Steam	Fan
Smoky Hollow Coal Co.	11	Northeast of Albia	C. & N. W.	Shaft	Room and pillar	Steam	Fan
White Ash Coal Co.	12	Northeast of Albia	C. & N. W.	Shaft	Room and pillar	Steam	Fan

LUCAS COUNTY.

This county is again coming to the front and will continue to do so for a number of years to come.

In the eighties this county was a very large producer and then went back with the closing of the Whitebreast mines in 1891. In 1899 the Whitebreast Company again opened a mine in this county known as Cleveland No. 4, and for eight years the county was listed among the large producing counties in the state. The Inland mine northeast of Chariton, was operated for a number of years for local trade only, it having no railroad connection. A little more than a year ago the branch of the C., R. I. & P. was built from Alerton to Des Moines and passed through this field thus giving them the facilities they had so long waited for. About the same time the Company changed hands and the name of the Company was also changed and is now known as the Central Iowa Fuel Company, with Mr. Josh Norwood general manager, with headquarters at Des Moines. The new Company took down the old wooden headgear, replacing it with a new up-to-date steel tippie equipped with Hopper scale, shaking screen, etc. They also put in a new first motion hoisting engine, new boilers and a box car loader. At the present time they are hoisting about 1,200 tons of mine run coal per day. They have been handicapped ever since they took the property by not having the proper facilities for handling the coal underground, all the haulage being done by mules. They are considering at present the installation of two gasoline motors which will increase the output materially. They have just finished sinking the No. 2 mine about 15 miles northeast of Chariton, the vein being seven feet ten inches thick at the bottom of the shaft. They have about 6,000 acres of good coal which will furnish labor and keep Lucas county on the coal producing map for a good many years to come.

I have just heard that the Big Hill mine is to begin operations again soon.

Two small companies operate mines in Lucas for local trade only, working the top vein.

One fatal and five serious non-fatal accidents occurred during the year in this county.

REVISED LIST OF COAL COMPANIES IN LUCAS COUNTY, 1914.

No. of Tons Produced	Name of Company	Name of Superintendent	Address
1,500	Central Iowa Fuel Co.	Josh Newwood	Chariton, Iowa
1,113	Goosen Bros. Coal Co.	Geo. W. Goosen	Chariton, Iowa
1,010	Skidmore Coal Co.	D. T. Evans	Lucas, Iowa

RAILROAD MINES IN LUCAS COUNTY.

Corporation, Firm or Owner	Mine No.	Location of Mine	Railroad Connection	Kind of Opening	System of Working	Power Used	Means of Ventilation
Central Iowa Fuel Co.	1	Northeast of Chariton.	C., R. I. & P.	Shaft	Room and pillar.	Steam	Fan
Central Iowa Fuel Co.	2	Northeast of Chariton.	C., R. I. & P.	Shaft	Room and pillar.	Steam	Fan
Goosen Bros. Coal Co.		Northeast of Lucas	C., R. I. & P.	Shaft	Room and pillar.	Steam	Fan
Skidmore Coal Co.		Northeast of Lucas	C., R. I. & P.	Shaft	Room and pillar.	Steam	Fan

WAYNE COUNTY.

In the eastern part of this county is found a continuation of the Mystic seam, though somewhat thinner than at Mystic and other places in Appanoose county. The most of the operations in this county are carried on at Seymour, the largest producer being the Numa Block Coal Company, situated on the C., M. & St. P. R. R. east of Seymour. The Seymour Coal Company have just opened a new mine east of town on the C., R. I. & P. R. R., this being, I believe, the deepest mine in the Mystic field. They have a large tract of land and it should prove a good producer when fully developed. The coal west of Seymour gradually becomes poorer and thinner until at certain places it disappears entirely, also the roof conditions are not as good as at Seymour and Mystic.

This county produced 79,002 tons of coal during the year. No fatal, and only seven serious non-fatal accidents occurred.

REVISED LIST OF COAL COMPANIES IN WAYNE COUNTY, 1914.

No. of Tons Produced	Name of Company	No. of Mine	Name of Superintendent	Address
1,200	Livingston & Blaker Coal Co.	2	Livingston	Madison, Iowa, Bl. 2
75,278	Numa Block Coal Co.		W. E. Blaker	Centerville, Iowa
223	Peck Coal Co.		Geo. Jones	Seymour, Iowa
1,609	Seymour Coal Co.			Seymour, Iowa

RAILROAD MINES IN WAYNE COUNTY.

Corporation, Firm or Owner	Mine No.	Location of Mine	Railroad Connection	Kind of Opening	System of Working	Power Used	Means of Ventilation
Numa Block Coal Co.	2	East of Seymour	C., M. & St. P.	Shaft	Long wall	Steam	Fan
Seymour Coal Co.		East of Seymour	C., M. & St. P.	Shaft	Long wall	Steam	Fan
Peck Coal Co.		South of Madison	C., M. & St. P.	Shaft	Long wall	Steam	Fan
Peck Coal Co.		South of Seymour	C., M. & St. P.	Shaft	Long wall	Steam	Fan

TAYLOR, PAGE AND ADAMS COUNTIES.

These counties are located in southwestern Iowa and the mines in them are mostly operated for local trade only. The vein runs from 16 to 20 inches in thickness and is very streaky at some places with dirt.

Adams county is the largest producer of the three counties mentioned and has held that distinction for all time. As early as the days of the Civil war coal was mined near Carbon, and this is the largest mining center in the county still. Mining is also carried on to some extent at Nodaway, this being one of the few mines in these counties that are operated with steam hoist. This mine is the best equipped and the best kept of any mine in the county. This county produced 12,730 tons of coal during the year.

Taylor county comes next in the production of coal with 8,365 tons. The most of the mines in this county are located at New Market. One of them is located on the K. & W. R. R. and loads coal on the cars of that railroad. They have an electric hoist, the electricity being supplied from Clarinda, about nine miles away. This is the best equipped and best kept mine in this county; the others are only operated in the winter season and then for local trade only.

Page county was the smallest producer last year with 7,512 tons. The most of the mines in this county are located around Clarinda and are operated for local trade only. The Tom Johnson mine west of Clarinda and the Coin Coal Company's mine at Coin, are the only ones that have a mechanical hoist, it being steam in both cases. The natural conditions existing in these mines make the workmen almost immune from the ordinary dangers that the miners encounter.

No fatal nor serious non-fatal accidents have occurred in these counties for a number of years. The last fatal accident being in 1908 and this was conceded to be gross carelessness on the part of the miner.

All of these mines have escape shafts equipped with either ladders or hoisting apparatus to be used in case of necessity. Every mine in these counties is worked on the longwall plan and usually the air is good. In many instances only the natural ventilation is necessary during the winter season of the year.

REVISED LIST OF COAL COMPANIES IN ADAMS COUNTY, 1914.

No. of Tons Produced	Name of Company	Name of Superintendent	Address
2,200	Daugherty Coal Co.	F. M. Daugherty	Nodaway, Iowa
832	Ford Coal Co.	Rob't Ford	R. R. 3, Cumberland, Ia.
360	Henson Coal Co.	M. Henson	R. R. 1, Carbon, Iowa
480	Hathway Coal Co.	Rob't Hathway	Carbon, Iowa
1,200	Jones Coal Co.	H. Jones	Carbon, Iowa
2,116	Lockwood Coal Co.	W. Lockwood	Carbon, Iowa
640	Mack Coal Co.	Ed. Mack	R. R. 3, Corning, Iowa
2,275	Ruth Coal Co.	F. Ruth	Carbon, Iowa
1,443	Wild Coal Co.	F. Wild	Carbon, Iowa

Corporation, Firm or Owner	Mine No.	Location of Mine	Kind of Opening	System of Working	Power Used	Means of Ventilation
Daugherty Coal Co.	---	Northwest of Nodaway	Shaft...	Long wall...	Steam...	Furnace...
Ford Coal Co.	---	Eriscow	Shaft...	Long wall...	Horse...	Furnace...
Henson Coal Co.	---	Northwest of Carbon	Shaft...	Long wall...	Horse...	Furnace...
Hathway Coal Co.	---	Carbon	Shaft...	Long wall...	Horse...	Furnace...
Jones Coal Co.	---	West of Carbon	Shaft...	Long wall...	Horse...	Furnace...
Lockwood Coal Co.	---	West of Carbon	Shaft...	Long wall...	Horse...	Furnace...
Mack Coal Co.	---	Northwest of Corning	Shaft...	Long wall...	Horse...	Furnace...
Ruth Coal Co.	---	Carbon	Shaft...	Long wall...	Horse...	Furnace...
Wild Coal Co.	---	Carbon	Shaft...	Long wall...	Horse...	Furnace...

REVISED LIST OF COAL COMPANIES IN TAYLOR COUNTY, 1914.

No. of Tons Produced	Name of Company	Name of Superintendent	Address
7,440	New Market Coal Co.	Jas. Pullen	New Market, Iowa
200	Jamison Coal Co.	A. R. Chaney	New Market, Iowa
425	Welsh Coal Co.	Wm. Welsh	New Market, Iowa

Corporation, Firm or Owner	Location of Mine	Railroad Connection	Kind of Opening	System of Working	Power Used	Means of Ventilation
New Market Coal Co.	East of New Market	K. & W. R. R.	Shaft...	Long wall...	Electricity	Furnace
Jamison Coal Co.	East of New Market	---	Shaft...	Long wall...	Horse	Furnace
Welsh Coal Co.	East of New Market	---	Shaft...	Long wall...	Horse	Furnace

REVISED LIST OF COAL COMPANIES IN PAGE COUNTY, 1914.

No. of Tons Produced	Name of Company	Name of Superintendent	Address
2,200	Coln Coal Co.	E. T. Stratton	Coln, Iowa
1,500	McPherrin Coal Co.	C. F. McPherrin	Clarinda, Iowa
1,200	Moore Coal Co.	J. S. Moore	Clarinda, Iowa
1,200	Howard & Patton Coal Co.	C. E. Howard	Clarinda, Iowa
2,200			

Corporation, Firm or Owner	Location of Mine	Railroad Connection	Kind of Opening	System of Working	Power Used	Means of Ventilation
Coln Coal Co.	Coln		Shaft	Long wall	Steam	Purnace
McPherrin Coal Co.	Southwest of Clarinda		Shaft	Long wall	Horse	Purnace
Moore Coal Co.	Southeast of Clarinda		Shaft	Long wall	Horse	Purnace
Howard & Patton Coal Co.	West of Clarinda		Shaft	Long wall	Horse	Purnace

CLASSIFICATION OF ACCIDENTS.

NON-FATAL.

Miners, 37; company men, 4; drivers, 25; top men, 2; pump men, 1.

Falls of slate, 21; falls of coal, 15; caught by cars, 22; caught by falling timber, 1; squeezed by mule, 3; kicked by mule, 2; jumping off runaway trip, 2; coal falling down shaft, 1; chunker caught by coal, 1; caught by machinery, 1.

FATAL ACCIDENTS.

Miners, 4; company men, 1; drivers, 3; trappers, 2; shot firer, 1. Falls of slate, 7; caught by cars, 3; dust explosion, 1.

FATAL ACCIDENTS IN DISTRICT NO. 1

Date	Name of Deceased	Name of Employer or Mine Where Accident Occurred	Age	Occupation
1913				
August 23.	John Howells	National Union Coal Co.	40	Stable boss.
August 31.	John Nelson	Hocking Coal Co.		Miner
1913				
January 9.	Felix Peria	Smoky Hollow Coal Co.	27	Driver
January 17.	Benj. Payton	Wapello Coal Co.	21	Dirt man
January 23.	Wm. Garrington	Smoky Hollow Coal Co.	40	Miner
March 26.	Vernie Reeves	Smoky Hollow Coal Co.	19	Miner
April 2.	Wm. Frew	National Union Coal Co.		Shot fire
April 11.	Andy Juno	Smoky Hollow Coal Co.	24	Driver
April 15.	Joseph Kauslick	Hocking Coal Co.		Miner
May 23.	Jas. E. Reese	Wapello Coal Co.	28	Mine Foreman
July 24.	Collie Harper	Smoky Hollow Coal Co.	15	Trapper
September 18.	Lon Hochart	National Union Coal Co.	19	Miner
September 23.	Chas. Walker	White Ash Coal Co.		Miner
October 7.	Los Lewis	Smoky Hollow Coal Co.	45	Miner
October 7.	Dewey Smead	Smoky Hollow Coal Co.	15	Trapper
November 4.	Joe Pollovich	Powder & Wilson Coal Co.	30	Driver
December 15.	Joe Macdella	Phillips Coal Co.	33	Shot fire
1914				
January 24.	Steng Copinski	Central Iowa Fuel Co.	23	Driver
February 18.	Harry Norman	Wapello Coal Co.	27	Driver
February 23.	Sami Rawlings	Smoky Hollow Coal Co.	73	Miner
March 1.	Jno. Muir	Hocking Coal Co.	30	Co. man.

FOR TWO YEARS ENDING JUNE 30, 1914.

Married or Single	Wife	Children	Nationality	Cause of Accident	Time of Accident	County
Divorced		6	American	Caught by ear.	7:45 a.m.	Monroe
Married	Wife	1	English	Premature explosion	2:30 p.m.	Monroe
Single			Italian	Run over by car.	2:45 p.m.	Monroe
Single			Scotch	Fall of slate.	1:15 p.m.	Monroe
Married	Wife	10	English	Fall of slate.	11:30 a.m.	Monroe
Single			American	Fall of slate.	8:30 a.m.	Monroe
			Scotch	Blown out shot, flying coal		Monroe
Single			Italian	Run over by car.	3:00 p.m.	Monroe
Married	Wife	2	Austrian	Fall slate	9:00 a.m.	Monroe
Married	Wife	1	American	Run over by car.	2:50 p.m.	Monroe
Single			American	Fall of slate.	2:00 p.m.	Monroe
Single			French	Fall of slate.	1:00 p.m.	Monroe
Married	Wife	3	American	Fall of slate.	2:00 p.m.	Monroe
Single			Welsh	Fall of slate.	8:30 a.m.	Monroe
Single			American	Fall of slate.	8:30 a.m.	Monroe
Single			Austrian	Fell under trip.	11:00 a.m.	Appan'se
Single			Italian	Dust explosion	4:30 p.m.	Monroe
Single			Polish	Fell under trip.	12:35 p.m.	Lucas
Married	Wife		American	Fell under trip.	1:30 p.m.	Monroe
Married	Div. wf.	1	English	Fall of slate	1:00 p.m.	Monroe
Married	Wife	2	Scotch	Fall of slate	10:30 p.m.	Monroe

REPORT OF NON-FATAL ACCIDENTS IN DISTRICT NO. 1 FROM JULY 1, 1912, TO JUNE 30, 1914.

Date	Name	Occupation	Cause of Accident	Character of Injuries	Employed By	County
1912						
July 2	Peter Mathias	Miner	Fall of roof.	Hand hurt.	A. D. Crawford Coal Co.	Appanoose
July 2	John Smith	Miner	Fall of coal.	Wrist broken.	Wingo Coal Co.	Monroe
Aug. 10	Frank Winkovich	Miner	Fall of coal.	Arm and leg broken.	A. D. Crawford Coal Co.	Appanoose
Aug. 10	Carl Mikalovich	Miner	Fall of coal.	Arm in foot broken.	Powder & Wilson Coal Co.	Appanoose
Aug. 10	Ben Cottrell	Miner	Fall of coal.	Head, hip and foot		Monroe
Aug. 31	Frank Parris	Miner	Fall of coal.	Foot mangled.	A. D. Crawford Coal Co.	Appanoose
Sept. 2	J. A. Antonio	Miner	Fall of rock.	Thumb cut off.	Smoky Hollow Coal Co.	Monroe
Sept. 3	John Correll	Driver	Caught by ear.	Hand crushed.	Smoky Hollow Coal Co.	Monroe
Sept. 4	W. M. M.	Miner	Caught by ear.	Hand crushed.	Smoky Hollow Coal Co.	Monroe
Sept. 7	Harry Station	Driver	Caught by ear.	Back sprained.	Coal City Coal Co.	Appanoose
Sept. 9	O. Heuberg	Miner	Fall of coal.	Broken leg.	Center Coal Co.	Appanoose
Sept. 9	N. N. Scott	Miner	Fall of roof.	Broken leg.	Anchor Coal Co.	Appanoose
Sept. 10	John Smith	Miner	Fall of coal.	Broken leg.	Anchor Coal Co.	Appanoose
Oct. 7	Jas. LaMar, Sr.	Co. man	Went out on him.	Leg crushed.	National Union Coal Co.	Monroe
Oct. 12	Alva Hudson	Miner	Pushing ear.	Knee dislocated.	Iowa Block Coal Co.	Appanoose
Oct. 18	Alva Hudson	Miner	Fall of coal.	Leg bruised and cut.	Center City Coal Co.	Appanoose
Oct. 18	Chas. Smith	Miner	Fall of coal.	Leg bruised and cut.	Center City Coal Co.	Appanoose
Nov. 7	Jas. Cuthbert	Drift man	Fall of slate.	Back and hip bruised.	Hocking Coal Co.	Monroe
Dec. 2	Pete Searich	Miner	Fall of slate.	Leg bruised.	Smoky Hollow Coal Co.	Monroe
Dec. 7	John Howard	Driver	Caught by ear.	Left foot badly torn.	National Union Coal Co.	Monroe
Dec. 13	John Howard	Driver	Caught by ear.	Left foot badly torn.	National Union Coal Co.	Monroe
Dec. 23	John Babbitt	Miner	Fall of coal.	Cut and bruised hips.	Jas. Horridge Coal Co.	Appanoose
Dec. 28	John Babbitt	Miner	Fall of coal.	Arm and legs bruised.	A. D. Crawford Coal Co.	Appanoose
Dec. 30	John Babbitt	Miner	Fall of roof.	Arm and legs bruised.	A. D. Crawford Coal Co.	Appanoose
Jan. 2	Edward Griffith	Driver	Caught by ear.	Eye bone broken.	Hocking Valley Coal Co.	Appanoose
Jan. 8	Joe Rodgers	Day man	Premature shot.	(Right) broken, and jaw		Appanoose
Jan. 12	Hoskins Jones	Miner	Fall of slate.	Right arm broken.	Smoky Hollow Coal Co.	Monroe
Jan. 12	M. L. Starnes	Miner	Fall of slate.	Right arm broken.	Wingo Coal Co.	Monroe
Jan. 12	Levin Johnson	Miner	Fall of coal.	Broken legs.	L. Anderson Coal Co.	Appanoose
Feb. 4	Ed Evans	Co. man	Caught by ear.	One finger cut off.	Smoky Hollow Coal Co.	Monroe
Feb. 10	Earl Cuskin	Miner	Fall of slate.	Thigh bruised.	Smoky Hollow Coal Co.	Monroe
Feb. 16	Earl Cuskin	Miner	Fall of slate.	Thigh bruised.	Smoky Hollow Coal Co.	Monroe
Feb. 16	Pete Kennedy	Cagee	Fall of dirt.	Left shoulder broken.	Hocking Coal Co.	Monroe
Feb. 21	Steward Swanson	Driver	Ran into ear.	Right leg bruised.	Wingo Coal Co.	Monroe
Feb. 28	Low Storey	Miner	Car lumped track.	Leg injured, cut almost	Wingo Coal Co.	Monroe
Mar. 6	W. H. Pettis	Tripp rider	Fall of coal.	Leg broken.	White Ash Coal Co.	Appanoose
Mar. 6	W. H. Pettis	Miner	Fall of coal.	Leg broken.	Wingo Coal Co.	Appanoose

Mar.	1	Bode Hampton	Driver	Cought by ear.	Smoky Hollow Coal Co.	Monroe
Mar.	8	H. E. Johnson	Driver	Finger broken	A. D. Crawford Coal Co.	Monroe
Mar.	14	Emilia Delona	Mine	Collar bone broken and shoulder bruised	White Ash Coal Co.	Monroe
Mar.	17					
Mar.	27	Ray Crofoot	Comple	Cought by ear	Hocking Coal Co.	Monroe
May	27	R. Bowers	Driver	Finger broken	Smoky Hollow Coal Co.	Monroe
May	30	E. C. Gyle Jr	Trapper	Run over by car	Albia Coal Co.	Monroe
May	10	Tom Short	Driver	Fall of coal	Smoky Hollow Coal Co.	Appanoose
May	16	Thompson Yawack	Timberman	Cought by ear. Fall of slate.	Smoky Hollow Coal Co.	Monroe
May	17	John Gold	Blacksmith	Gave cought loose pipe falling thru Full of slate	Hocking Coal Co.	Monroe
May	22	John Thompson	Mine	Two ribs broken and one broken	Prairie Block Coal Co.	Appanoose
June	11	Samuel Brown	Chunker	Bruiest head ent all broken	Wapello Coal Co.	Monroe
June	14	Pete Chaple	Mine	Collar bone broken	Phillips Coal Co.	Monroe
June	18	F. Stadel	Mine	Foot mangled	A. D. Crawford Coal Co.	Appanoose
June	22	H. J. Johnson	Mine	Ribs and back bruised.	Prairie Block Coal Co.	Monroe
Aug.	12	C. J. Barrille	Chunker	Ribs and back bruised.	A. D. Crawford Coal Co.	Wayne
Aug.	13	Dwyl Jeffries	Mine	Collar bone broken	Numa Black Coal Co.	Wayne
Aug.	14	Geo. G. Vell	Mine	Full of coal	Wapello Coal Co.	Wayne
Aug.	19	Len Ryan	Driver	Hurt internally	Hocking Coal Co.	Wayne
Aug.	27	Ateliu Morro	Mine	Leg broken	Hocking Coal Co.	Monroe
Sept.	1	Edith Staff	Mine	Bruised neck	Smoky Hollow Coal Co.	Monroe
Sept.	12	Tommy Baker	Mine	Back and leg bruised by mule	Hocking Coal Co.	Appanoose
Sept.	27	John Polle	Mine	Leg fractured Ribs and shoulder bruised	Forster & Wilson Coal Co.	Appanoose
Sept.	27	Thos. Cameron	Driver	Squeezed between mine car	Carlson Black Coal Co.	Appanoose
Oct.	2	John Seidin	Mine	Leg bruised	Wapello Coal Co.	Monroe
Oct.	3	H. E. Johnson	Driver	Cought by slate	Numa Black Coal Co.	Wayne
Oct.	12	John Williams	Mine	Thumb off	Thumpe Coal Co.	Monroe
Oct.	27	Wm. Easter	Pump man	Rip broken	Wapello Coal Co.	Wayne
Nov.	2	Harley Larson	Driver	Cought by falling on leg	White Ash Coal Co.	Monroe
Nov.	3	Robert Shaford	Driver	Thumb lacerated	Center Coal Co.	Monroe
Nov.	5	Thos. Campbell	Mine	Foot bruised	Wapello Coal Co.	Appanoose
Nov.	7	Andrew Debbert	Mine	Back bruised	Forster & Wilson Coal Co.	Appanoose
Nov.	10	Robt. Ferguson	Driver	Foot bruised	Hocking Coal Co.	Monroe
Nov.	10	John Farris	Mine	Leg and back bruised	Wapello Fuel Co.	Monroe
Nov.	21	John Clarkson	Driver	Arm broken and back bruised	Sunshine Coal Co.	Appanoose
Nov.	21				Wapello Coal Co.	Wayne

REPORT OF NON-FATAL ACCIDENTS IN DISTRICT NO. 1 FROM JULY 1, 1912 TO JUNE 30, 1914—Continued.

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SEVENTEENTH BIENNIAL REPORT OF THE

STATE MINE INSPECTORS.

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Date	Name	Occupation	Cause of Accident	Character of Injuries	Employed By	County
Nov. 25.....	Chas. Anderson	Driver.....	Fell under trip.....	Legs bruised and pelvis bone broken.....	Wapello Coal Co.....	Monroe
Nov. 28.....	Geo. Engle	Miner.....	Caught by car.....	Shoulder bruised.....	Scandinavian Coal Co.....	Appanoose
July 25.....	Albert Pearce	Driver.....	Caught by car.....	Leg broken.....	Smoky Hollow Coal Co.....	Monroe
Dec. 1.....	John Evans	Driver.....	Fall of slate.....	Scalp wound.....	National Union Coal Co.....	Monroe
Dec. 2.....	Fred Carrier	Driver.....	Slipped off car.....	Leg bruised.....	Central Iowa Fuel Co.....	Lucas
Dec. 2.....	Francis Collins	Miner.....	Car jumped off track.....	Leg bruised.....	Central Iowa Fuel Co.....	Lucas
Dec. 4.....	Wm. Sanderson	Co. man.....	Fall of slate.....	Arm and foot bruised.....	Wapello Coal Co.....	Monroe
Dec. 6.....	Steve Barechovich	Miner.....	Fall of coal.....	Leg broken.....	Carbon Block Coal Co.....	Appanoose
Dec. 6.....	Fred Hockinson	Driver.....	Fall of slate.....	Leg bruised.....	Hocking Coal Co.....	Monroe
Dec. 8.....	Frank Darby	Driver.....	Caught by car.....	Foot and ankle cut.....	Wapello Coal Co.....	Monroe
Dec. 8.....	Lou Kline	Driver.....	Caught by car.....	Leg bruised.....	National Union Coal Co.....	Monroe
Dec. 8.....	Desire Brancher	Miner.....	Squeezed by mule.....	Hip bruised.....	National Union Coal Co.....	Monroe
Dec. 10.....	John Waksinski	Driver.....	Caught by car.....	Shoulder hurt.....	Prairie Block Coal Co.....	Appanoose
Dec. 15.....	Rome Six	Driver.....	Kicked by mule.....	Side injured.....	Central Iowa Fuel Co.....	Lucas
Dec. 15.....	Stanley Roberts	Driver.....	Coal fell off car.....	Leg bruised.....	Central Iowa Fuel Co.....	Lucas
Dec. 15.....	Jas. Webb	Miner.....	Fall of slate.....	Back and leg bruised.....	Central Iowa Fuel Co.....	Lucas
Dec. 20.....	Thos. Crook	Miner.....	Fall of slate.....	Hips bruised.....	Wapello Coal Co.....	Monroe
Dec. 22.....	Evan West, Jr.	Driver.....	Squeezed by mule.....	Knee cap dislocated.....	Wapello Coal Co.....	Monroe
Dec. 22.....	Wm. Henson	Miner.....	Fall of coal.....	Arm broken.....	Ludwig Bros. Coal Co.....	Appanoose
Dec. 22.....	Oliver Watts	Miner.....	Fall of slate.....	Back and head bruised.....	Wapello Coal Co.....	Monroe
Dec. 20.....	Wm. Pearson	Miner.....	Fall of coal.....	Foot bruised.....	Numa Block Coal Co.....	Wayne
1914						
Jan. 9.....	Tony Delphante	Miner.....	Fall of coal.....	Broken leg.....	Carbon Block Coal Co.....	Appanoose
Jan. 13.....	Jas. McCre	Co. man.....	Caught by car.....	Scalp wounds.....	Hocking Coal Co.....	Monroe
Jan. 20.....	Elliott Brown	Miner.....	Fall of false top.....	Back broken.....	Central Iowa Fuel Co.....	Lucas
Jan. 26.....	Alex Crawford	Miner.....	Fall of slate.....	Back bruised.....	Hocking Coal Co.....	Monroe
Jan. 27.....	Chas. Washington	Miner.....	Fall of coal.....	Hips crushed.....	Clark Coal Co.....	Appanoose
Feb. 5.....	J. A. Robinson	Miner.....	Fall of coal.....	Foot bruised.....	Hocking Coal Co.....	Monroe
Feb. 10.....	W. Herndon	Miner.....	Fall of coal.....	Rib broken.....	Centerville Block Coal Co.....	Appanoose
Feb. 11.....	Claude Noel	Miner.....	Fall of slate.....	Back sprained.....	Koonts Coal Co.....	Appanoose
Feb. 16.....	J. R. Lynch	Miner.....	Caught by falling tim- ber.....	Back bruised.....	Egypt Coal Co.....	Appanoose
Feb. 16.....	Tony Angoran	Timberman.....	Fall of slate.....	Foot bruised.....	Hocking Coal Co.....	Monroe
Feb. 22.....	John Zellar	Chucker.....	Caught by coal.....	Hips and elbow bruised.....	Armstrong Coal Co.....	Appanoose
Feb. 27.....	Tony Braine	Miner.....	Fall of coal.....	Foot broken.....	Numa Block Coal Co.....	Wayne
Mar. 2.....	Geo. Leggett	Driver.....	Caught by car.....	Hips injured.....	White Ash Coal Co.....	Monroe
Mar. 5.....	Harry Fisher	Driver.....	Caught by car.....	Shoulder torn.....	White Ash Coal Co.....	Monroe
Mar. 9.....	B. Favro	Miner.....	Fall of coal.....	Back dislocated.....	Carbon Block Coal Co.....	Appanoose
Mar. 17.....	W. Kelster	Miner.....	Fall of slate.....	Back hurt.....	Egypt Coal Co.....	Appanoose
Mar. 21.....	H. N. Murphy	Miner.....	Fall of slate.....	Two ribs broken.....	Numa Block Coal Co.....	Wayne
April 6.....	J. Williams	Driver.....	Jumped from runaway trip.....	Ankle fractured.....	Phillips Coal Co.....	Monroe
May 8.....	Robt. Gathercole	Miner.....	Fall of coal.....	Great toe broken.....	Central Iowa Fuel Co.....	Lucas
June 8.....	J. W. Johnson	Top man.....	Fell off car of timber.....	Rib fractured.....	Smoky Hollow Coal Co.....	Monroe
June 9.....	Andy Mink	Driver.....	Caught by car.....	Collar bone broken.....	Central Iowa Fuel Co.....	Lucas
June 9.....	Jno. Bernard	Miner.....	Fall of slate.....	Two ribs fractured.....	Hocking Coal Co.....	Monroe
June 16.....	Joe Melnes	Miner.....	Caught by motor trip.....	Ankle bruised.....	Hocking Coal Co.....	Monroe
June 23.....	Wm. Evans	Miner.....	Fall of slate.....	Rib broken.....	Central Iowa Fuel Co.....	Monroe
June 25.....	Chas. Torres	Driver.....	Caught by car.....	Ankle bruised.....	Central Iowa Fuel Co.....	Monroe

RECOMMENDATIONS FOR IMPROVEMENTS.

That a law be enacted compelling every coal and gypsum company in the state employing more than five men, to examine all working places, entries, and traveling ways before the men enter the mine, and that a record be made and kept at the mine of these inspections, and a list of unsafe places be made and posted at the mouth of the mine.

That the distance requiring the installment of telephones in mines be reduced from 3,000 feet to 1,000 feet.

That all mine superintendents be required to hold first class certificates of competency.

That certificates of competency for mine foremen be graded, first and second class; and that every mine employing twenty-five men or more shall have a mine foreman with a first class certificate.

That the time for making the annual report be changed from July 1st to January 1st, as is customary in most of the other states and will also conform with the time that the Bureau of Mines gathers its statistics of mining matters.

That when any employee shall report any unsafe condition found in the mine to the mine foreman, or his assistant, the one to whom the report is made shall immediately give to the employee making the report a written statement, naming the place reported, what the unsafe condition is, together with the time and date that the report was made, the company to preserve a copy of the statement given.

That where any change occurs in the name of any company, owner, operator, or lessee, or the change of manager, superintendent, foreman, or assistant foreman, the inspector of the district where changes are made shall be notified immediately, giving name or names of company or men changed and all new mines shall upon commencing to sink, notify as above recommended.

W. E. HOLLAND, Albia, Iowa.
Inspector District No. 1.

TABLE NO. 1.

TABLE SHOWING NUMBER OF MINES, OUTPUT OF COAL, NUMBER OF MINERS AND OTHER EMPLOYEES, FATAL AND SERIOUS ACCIDENTS IN DISTRICT NO. 1 FOR YEAR ENDING JUNE 30, 1914.

County	No. of Mines	Coal Produced	No. of Miners	No. of other employees	No. of out-standings	No. of days worked	No. of fatal accidents	No. of serious accidents
Appanoose	72	1,229,916	2,997	518	245	10,355	1	18
Monroe (part)	13	1,805,884	1,958	613	225	2,454	9	26
Wayne	4	79,062	195	43	32	502	—	2
Lucas	4	146,756	271	79	22	372	1	8
Taylor	3	8,565	29	5	4	500	—	—
Pope	4	7,512	35	8	9	355	—	—
Adams	9	12,739	68	6	19	1,549	—	—
Total	110	2,894,167	5,008	1,263	637	17,687	11	69

TABLE NO. 2.

SHOWING THE OUTPUT OF THE COAL PRODUCING COUNTIES OF DISTRICT NO. 1, FOR THE PAST SEVEN YEARS.

Counties	1908	1909	1910	1911	1912	1913	1914
Appanoose	1,107,806	1,186,024	1,128,269	1,205,878	1,059,200	1,104,377	1,229,916
Monroe (part)	1,801,874	1,860,374	1,922,697	1,489,233	1,281,823	1,535,136	1,805,884
Lucas	74,268	9,777	10,410	30,805	15,437	13,226	146,756
Wayne	124,400	142,640	125,276	144,358	106,616	82,915	79,062
Taylor	13,861	13,347	10,727	7,605	6,840	5,820	8,565
Pope	14,942	14,904	12,347	4,500	10,792	5,330	7,512
Adams	17,260	18,413	19,051	6,469	3,800	6,083	12,739
Total	2,623,669	2,725,069	2,428,767	2,869,109	2,486,588	2,812,780	2,894,167

TABLE NO. 3.

SHOWING NUMBER OF MINES, OUTPUT OF COAL, NUMBER OF MINERS AND OTHER EMPLOYEES IN DISTRICT NO. 1, FOR YEAR ENDING JUNE 30, 1913.

County	Number of mines	Amount of coal of all kinds produced	No. of miners employed	No. of other employees	No. outside employees	Total number employees
Appanoose	59	1,164,877	2,043	215	207	2,465
Monroe (part)	11	1,585,136	1,521	484	201	2,206
Wayne	5	80,915	180	41	18	239
Lucas	3	19,358	23	7	7	37
Taylor	4	5,300	35	5	5	45
Page	2	5,300	21	2	2	25
Adams	2	6,063	24	1	5	30
Total	87	2,813,789	4,744	1,056	545	6,345

TABLE NO. 4.

SHOWING NUMBER OF MINES, OUTPUT OF COAL, NUMBER OF MINERS AND OTHER EMPLOYEES IN DISTRICT NO. 1, FOR YEAR ENDING JUNE 30, 1914.

County	Number of mines	Amount of coal of all kinds produced	No. miners employed	No. of other employees	No. outside employees	Total number employees
Appanoose	73	1,320,506	2,907	318	245	3,470
Monroe (part)	12	1,405,884	1,538	612	225	2,375
Wayne	4	79,002	195	43	22	260
Lucas	4	140,738	271	70	22	363
Taylor	4	8,300	30	8	4	42
Page	4	7,512	30	8	4	42
Adams	9	12,730	68	8	10	86
Total	110	2,864,167	5,066	1,285	607	6,958

TABLE NO. 5.

SHOWING TONNAGE IN DISTRICT NO. 1 FOR PAST FOURTEEN YEARS, WITH NUMBER OF FATAL ACCIDENTS AND NUMBER OF EMPLOYEES, WITH TONS PER ACCIDENT, ETC.

Year	Number of fatal accidents	Tons of coal produced each year	Number of employees	Tons of coal mined per accident	Number of employees for each accident
1901	18	1,064,000	5,302	190,114	296
1902	11	2,318,385	6,687	210,770	359
1903	11	2,888,075	6,359	262,102	378
1904	13	2,395,470	6,796	184,267	323
1905	7	2,347,050	7,220	335,323	1,096
1906	16	2,648,519	7,075	165,532	442
1907	9	2,843,052	7,069	315,891	787
1908	15	2,653,599	7,069	176,906	471
1909	8	2,725,000	7,213	340,624	861
1910	10	2,428,267	7,111	242,877	741
1911	10	2,869,130	6,844	286,910	684
1912	11	2,486,588	6,050	226,053	601
1913	10	2,813,789	6,345	281,379	684

SECOND DISTRICT

BIENNIAL REPORT OF THE

SECOND DISTRICT

EMBRACING THE FOLLOWING COUNTIES.

MONROE (part)

JASPER

WAPELLO

VAN BUREN

MARION

JEFFERSON

KEOKUK

DAVIS

MAHASKA

R. T. RHYS, Inspector,
Ottumwa, Iowa.

LETTER OF TRANSMITTAL.

HONORABLE GEORGE W. CLARK, Governor of Iowa:

SIR.—I have the honor to submit herewith my report as Mine Inspector of the Second Inspection District for the biennial period ending June 30th, 1914.

Very respectfully,

R. T. RHYS, Inspector.

REPORT OF THE SECOND INSPECTION DISTRICT

The second inspection district comprises the same counties as reported in the last biennial report of this department: Monroe (part), Mahaska, Wapello, Jasper, Marion, Van Buren, Keokuk, Jefferson, Warren and Davis.

There are in operation in the above counties ninety-three (93) coal mines, giving employment on an average to four thousand four hundred and eighty-seven (4,487) men.

The total coal production of the district for the biennial period ending June 30th, 1914, was 4,378,300 tons. Comparing this biennial period, with the one ending June 30th, 1912, it shows a decrease of production of 514,797 tons. All of the above decrease occurred in the year ending June 30th, 1914, and was due principally to business depression.

The production of coal, the number of men employed, and the fatal and non-fatal accidents in each of the above counties is given elsewhere in this report.

ACCIDENTS.

The number of fatal accidents in, and around the mines of the second inspection district for the biennial period ending June 30th, 1914, were twenty (20), and the number of non-fatal accidents for the same period were ninety-one (91).

A comparison will show that there were three (3) less fatal accidents, and thirteen more non-fatal accidents in this biennial period than in the one prior to this.

The accidents were due to the following causes:

Accidents Due to	Fatal	Non-Fatal
Fall of slate or roof	12	29
Run over by mine cars or motors	2	26
Dust explosion	2	1
Ignition of powder keg	2	1
Flying pieces from blast	2	1
Kicked by mules	1	1
Fell down shaft	1	1
Other various causes	1	20
Total	20	91

AGE OF THE MEN KILLED.

One man was between 16 and 20.
 Eight men were between 20 and 30.
 Seven men were between 30 and 40.
 Three men were between 40 and 50.
 One man was between 50 and 60.

THE LENGTH OF TIME THE MEN HAD BEEN EMPLOYED OF THE
RESPECTIVE COMPANIES WHEN KILLED.

One man 1 day.
 Four men less than 1 year.
 Two men 1 year.
 Two men less than 3 years.
 Two men less than 4 years.
 Two men less than 5 years.
 Two men 5 years.
 Two men less than 6 years.
 One man 9 years.
 One man 10 years.
 One man 18 years.

TIME OF THE DAY OR NIGHT THE FATAL ACCIDENTS OCCURRED.

Six between 8 and 9 a. m.
 Three between 9 and 10 a. m.
 One between 10 and 11 a. m.
 Two between 11 and 12 a. m.
 One between 12 and 2 p. m.
 Two between 2 and 3 p. m.
 One between 3 and 4 p. m.
 Three between 4 and 6 p. m.
 One 9 p. m.

TIME OF DAY, AND PLACE WHERE FATAL ACCIDENTS FROM "FALL OF
SLATE OR ROOF" OCCURRED.

No. of accidents.	Time.	Place.
2	Before 9:30 A. M.	At or near the "Face"
5	Before 10:30 A. M.	At or near the "Face"
2	Before 11:00 A. M.	At or near the "Face"
1	Before 11:15 A. M.	At or near the "Face"
1	Before 2:15 P. M.	At or near the "Face"
1	Before 2:15 P. M.	At or near the "Face"

OCCUPATION OF THE MEN AT THE TIME THE FATAL ACCIDENT TOOK
PLACE.

No. of men.	Occupation.
15	Miners
1	Trip Rider
1	Timberman
1	Shot Fire
1	Stable Boss
1	Pumper and repair man

RACE OR NATIONALITY OF THE MEN KILLED.

No. of men.	Race or Nationality.
6	Americans
4	Negroes
4	English
2	Austrians
1	Irish
1	French

NON-FATAL ACCIDENTS.

Under this classification is placed all those accidents involving the breaking of an arm, leg, rib, or any other injury causing the loss of fifteen or more days' work.

During the biennial period ending June 30th, 1914, twenty-five men suffered broken leg.

Nine men suffered broken arm.

Six men suffered one or more finger cut off.

Sixteen men suffered ribs, and other bones fractured.

Thirty-five men were badly bruised or maimed.

OCCUPATION OF THE MEN AT THE TIME THE NON-FATAL TOOK PLACE.

Thirty-nine were miners.

Twenty-five were drivers.

Seven were day men.

Three were timbermen.

Two were motormen.

Two were topmen.

Two were machine runners.

Two were cagers.

One trapper.

One coupler.
 One trailer.
 One boss driver.
 One tracklayer.
 One carpenter.
 One shot firer.
 One blacksmith.
 One weigh-boss.

From the foregoing tables it will be observed that 12, or 60% of the fatal accidents, and 39, or nearly 27% of the non-fatal accidents were due to "Fall of Slate or Roof" at or near the "Face."

Also that 10, or 83% of the fatal accidents, from fall of slate or roof, and 26, or nearly 67% of the non-fatal accidents, from the same cause, occurred before the noon hour.

My last biennial report showed very similar results to the above, and I endeavored then, as I do now, to impress upon mine officials the fact that the inspection of the safety of the "Working Face," in order to accomplish the most good, should be done early, or at least before the noon hour.

Our present law makes it the duty of the mine foreman or his assistant, to make careful inspection of the mine from day to day, etc. It is my opinion that most of our mine foremen are doing the best they can to carry out this provision of the law. But with so many other duties to perform, it is frequently a physical impossibility for them to do justice to the important work of inspecting the working places early in the day, especially if the mines under their charge are extensive. For this, and for other good reasons that could be named, the work of inspecting the safety of the face should be entrusted to other competent, and careful men, whose duty for the time engaged at the work, would be to see that every working place was made as safe as it could practically be made before the workmen be allowed to load or to mine coal.

During this biennial period, there occurred in this district three mine explosions. The explosion at the Consolidation Coal Company, mine No. 12, however, was the only one that caused the loss of life. In addition to the loss of life it did so much damage to the mine, that the small amount of coal that remained

within its territory to be extracted, did not justify the expense of repairing it, and to resume its operation.

I have received so many requests for a copy of my report to you on this explosion that I deem it best to insert it in full in this report, which is as follows:

On the 18th day of March, 1914, a few minutes after 5 o'clock p. m., a disastrous explosion occurred in mine No. 12 of the Consolidation Coal Company, Buxton, in which two men lost their lives.

The mine has been in operation for over eleven years, and was developed on the room and pillar and the double entry system. The main entries were driven from both sides of the shaft for a considerable distance in a northwest and southeast course. Each side was ventilated separately by separate fans, and the hoisting shaft being the up-cast for both currents. The two fans were located southeast of the hoisting shaft. The one ventilating the west side (No. 1) of the mine was 350 feet, and the one ventilating the east side (No. 2) was about 3,500 feet from the hoisting shaft. Both fans were running at firing time to within a few revolutions of their normal speed.

During the first part of March, an average of 228 persons were employed in the mine. Of this number 170 were working on the east side. The extreme end of this side was about 6,000 feet from the hoisting shaft. The remainder of the men were employed on the west side of the mine. Practically all this side was pillar work, and the working places were scattered here and there. The first working place on the west side was about 400 feet from the hoisting shaft.

Three shot examiners and shot firers were employed in the mine. Two on the east, and one on the west side. All persons, except the shot firers, were supposed to be out of the mine during firing time. Unfortunately this safe rule was not strictly adhered to at all times. The afternoon of the 18th, John Taylor (pumper and repair man), and John W. Williams (stable boss), were in the mine at firing time, and were both killed. From the testimony of the officials of the mine, and others, it appears that these men were not required, nor, did their duties necessitate their presence in the mine during firing time, nevertheless, they would occasionally remain in the mine, because it better suited their convenience to do so, and complete the work they had on hand, than to go out of the mine, and then return into it after firing time.

The west shot firer had scarcely reached the surface safely when the explosion took place. The force of it found relief in part through the hoisting shaft. Breaking and removing some of the buntings, which caused the top of the hoisting shaft a few hours later to cave, and it was with difficulty that the hoisting tower was saved from falling into the shaft. Below, the explosion continued its course, past the hoisting shaft to the east side of the mine. Removing cars and timbers, and causing falls here and there for a distance of nearly 3,000 feet.

The men on top of the shaft, realizing that an explosion had taken place, made their way quickly to escape shaft No. 2, and entered the mine. They soon discovered that the explosion had taken place on the west side—

that the effects of its force had reached only to the straight east motor parting, and that the two shot firers on the east side of the mine were safe and ignorant of what had taken place. Considerable difficulty was experienced by the rescuers in going west towards the hoisting shaft, because of falls and vitiated air. In less than three hours, however, both bodies were recovered. The body of Taylor was found near the 5th and 6th "A" pass parting, or, nearly 1,200 feet from the bottom of the hoisting shaft. Fan No. 2 was operated by electric power, and Mr. Taylor had the care of starting, stopping and oiling the same. After attending to the fan the afternoon of the 18th, he decided to go down the mine through No. 2 escape shaft, and while making his way towards the bottom of the hoisting shaft, where he was to make some minor repairs on one of the motors stationed at that place, he was met by the explosion at the above point. Had he walked over the surface, which would practically be the same distance, and then gone down the hoisting shaft, he would have escaped the explosion. His mutilated body showed that he met death instantly.

The body of Mr. Williams was found by the pump room on the east side of the mine, or, within 40 or 50 feet to the hoisting shaft. The stable was on the west side of the mine, within about 200 feet of the bottom, and had 19 mules in it, all of which were killed. Williams was last seen alive in the entrance of the stable, and replied to an inquiry from the west side shot firer, that he was about ready to go home. Why his body was found on the east side of the hoisting shaft is a matter of conjecture. He may have been carried by the force of the explosion to the east side, or, he may have been making an effort to reach escape shaft No. 1, which was only about 300 feet away from him, but was overcome with after damps. The nature of his injuries was such as to make the latter possible.

Exploration of the west side of the mine to locate the initial point of the explosion was not possible at that time, because the explosion had set a portion of the stable on fire, and made it necessary to seal the west side of the mine in order to smother the fire. Careful investigation revealed but very little evidence that flame had traversed the mine elsewhere. Several inflammable materials, such as the fuzzy ends of dry hemp ropes, etc., which were hanging near the bottom of the hoisting shaft directly in the path of the explosion were not touched by the flame, and the only proof of the effects of fire that I found, outside of the stable, was a very small deposit of coked dust on some of the double timbers in the east empty track on the bottom of the hoisting shaft.

On April 11th, the stoppings on the west side of the mine were removed, and the fire was found to be out. Accompanied by Inspector Holland, of the First District, and some of the mine officials, exploration of some parts of this side was made, and the first working place, and where the last shots were fired the evening of the explosion, was reached and inspected. As was already furnished it was evident that the explosion originated at this point, for evidence of force, traveling in opposite direction from this place was plainly discernible. This particular working place, designated as room "A" (see plate 2 attached to this report) was turned in the pillar at right angle, off the north side of the main west

entry at a point about midway between second and third "C" entries. The neck of room "A" (see plate 4, attached to this report) was driven 9 feet 5 inches wide for about 3 feet, then was widened out to about 22 feet. The length of the place from its mouth to the face was about 25 feet. The vein was clean and about six feet thick, with good slate roof. In this small closed place, six shots were fired the evening of the explosion. Referring to plate No. 4, holes numbered 1, 2, 3, 5, 6 and 8 were fired the evening of the explosion, and holes numbered 4 and 7 were fired the evening before. Hole No. 6 blew out the tamping the evening before (17th), and was drilled deeper, recharged, and fired the evening of the 18th, and did practically the same thing. If it was possible for these six shots to do all the work intended for them, they would have removed all of the entire face of the room.

These shots were examined, and approved by the west side shot examiner, and were tamped in all probability with coal drillings.

The average width of the main entry in the vicinity of room "A" was about 7 feet between the timbers. No unsafe condition was observed, and the entry between the rails was still moist, to a small degree, from the effects of sprinkling prior to the explosion.

My last inspection of mine No. 12, was on November 7, 1913. That day the mine was not hoisting coal. Several men, however, were below doing various work. During the month of November, 1913, an average of 30 men were employed on the west side of the mine—10 on the 5th and 6th D, and 20 on the main and back west entries. Not all of the west side of the mine was inspected that day, but enough of it was seen to satisfy me that the men were working under safe, and satisfactory conditions. This was also true of the parts inspected on the east side of the mine.

For the last several years I have inspected mine No. 12 on an average or more than three times a year. The ventilation in some parts of the mine, here and there, was found occasionally not satisfactory, but on the whole the mine was well ventilated, and was always found to be in good, safe condition. The employees of this mine evidently thought it safe also, for I have no record nor recollection of ever receiving a single complaint from any of them on its condition, nor was I ever requested by any of them to inspect the mine. Of no other shipping mine in the district, that is in operation today, can I say as much, and naturally No. 12 would be the last mine I would ever suspect a disaster likely to take place.

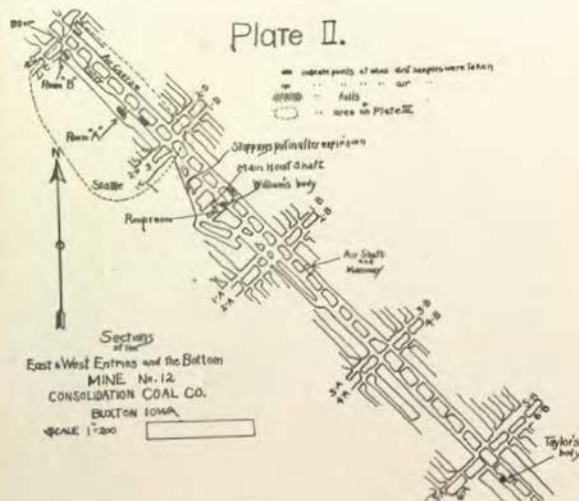
An explosion of this kind is always a subject of much discussion among the mining men of our state. Various theories are advanced as to its causes, etc. Possibly some of these theories are correct in part at least, but be that as it may, this I have observed, that men invariably will enthusiastically discuss and agitate more upon those things pertaining to mine explosions that are yet not definitely known, or, are still in controversy, than they do in emphasizing upon one another the importance of rightly exercising the knowledge they already possess of those things regarding mine explosions that all mining men do know to be positively true, and over which there are no dispute. In saying this I do not mean to infer that we in Iowa should cease to search for the truth, and the whole

truth—that more knowledge upon this important question is not desirable nor profitable for us, but the fact I wish to point out is, that the proper use of what knowledge we have, as to what causes mine explosions, etc., would do more to prevent their occurrence in our state, than would the knowing of those things that are yet unknown, or, are not definitely settled. If we knew it all, and understood all its mysteries, it would profit us nothing unless we use this knowledge properly. It would be erroneous to attribute the cause of this explosion to anyone's lack of sufficient knowledge of the things or conditions that tend to make mine explosions probable in our state. This one, like the majority of Iowa mine explosions, did not occur because there was present some mysterious danger that no one could discern, or, in order to prevent it to take place it required more knowledge than any person has yet gained. To my mind the cause of this explosion was a plain case of a total disregard of knowledge—of knowingly doing those things that are universally, and positively known to be conducive to bring mine explosions to pass. What shot examiner, or miner, in Iowa, that does not know that the use of black powder in (1) holes drilled into the solid; (2) in holes that have blown out the tamping and recharged; (3) in holes depending upon one another; (4) in holes too close to old holes, cracks or fissures; and (5) in the firing of too many holes in small space, are not always pregnant with great danger? Yet in spite of this knowledge, and also of the well known fact that all the mine explosions in our state that have caused the loss of life, have resulted from one, or a combination of these kind of shots, we find these five classes of dangerous holes, named above, present in room "A" where this explosion originated. To approve six shots to be fired together in such close place as this was, even if they were fair shots, was to court disaster, but when at least four of these shots should have been condemned outright, as unsafe to be fired anywhere in the mine, it made the avoidance of an explosion impossible. It is unbelievable that the shot examiner did not see and know these things. For him to state, as he did on the inquest stand, that he thought the shots in room "A" were safe, was but natural. No other statement could be expected of him after what took place. Nevertheless I shall credit him with knowing in his heart that this was not so, and shall ascribe his action in firing the above shots to a state, or condition that he had brought upon himself, by habitually allowing privileges to the miners that he should at no time grant, until his examination of their holes had become very much of a farce, and little less than criminal. By his loose way of performing his duties his courage to reject unsafe shots had been impaired, and he had become the willing slave of the unscrupulous miner, and fired almost any shot placed before him. The law gave him an unlimited authority in the performances of his duties as shot examiner, and the state expected him to use it without fear or favor, and for his failure to do so he must be held the most responsible for this disaster.

I should not close this report, however, without recording my severest condemnation against the action of the men working in room "A" in asking any man to approve, and to fire such holes as they had the evening

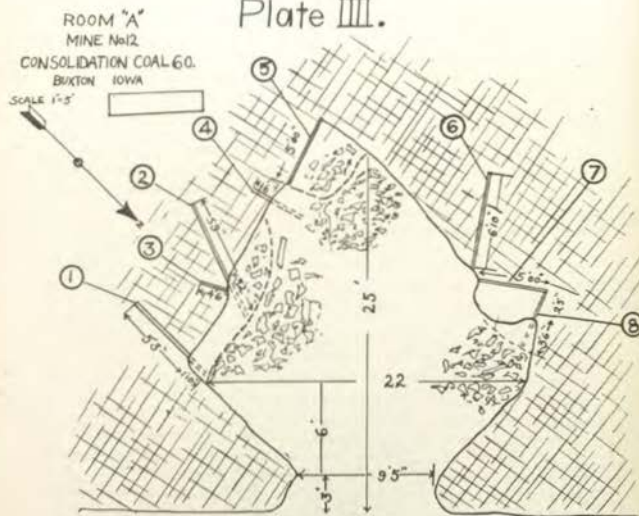
of the 18th. No honorable miner would ever ask a shot firer to light shots that he would not be willing to fire himself.

Also not to close it without censuring the placing of three men to work in room "A", until at least it was wide enough, or was through the pillar. I have been told that these three men offered, or volunteered to work in this place. Granting this to be correct, their offer should have been rejected. To allow, or, assign too many men to work in one place, is not as a rule conducive to safety, for it leads them into the temptation of placing many impractical shots that otherwise would not have been placed, were they not cramped for room to remove enough coal for all of them to make wages. Let every mine foreman heed this lesson from this explosion, and endeavor as much as he can to "Lead his men not into temptation but to deliver them from danger."



Supplementing the above report, I wish to say that I am very grateful that shot firers are employed in the mines of our state. A mine explosion like this ought to educe from every fair minded person the acknowledgement that the voluntary act of the miners of Iowa, in employing shot firers to do the firing of shots, after they and other employees have retired from the mine, has un-

Plate III.



questionably prevented a great loss of life to take place in the mine explosions of our state. That our shot examiners' law, simply as it is at present on the statute books, does not give the full measure of protection to human life that our conception of safety today demands. That it is the hiring of shot firers by the miners that adds to, and that makes the shot examiners' law complete, and of real protective value.

However widely the operators and miners of our state may have differed regarding the need of shot examiners and shot firers, when the law of shot examiners was enacted thirteen years ago, I believe I am correct in saying that time, and the rapid progress of mining have removed nearly all their differences. Every operator today that has due regard for human life must admit that the employing of shot firers—until at least a more practical and safer method is found—to do the firing of shots after all other employees are out of the mine, is a necessary precaution, and a wise thing to do. Not an operator in our state

to my knowledge is so unconcerned about the safety of his men that would be content to operate his mine today without shot firers. It is perfectly safe to predict that so long as "shooting off the solid" is practiced in our mines, that the old time system of every miner to fire his own shots is forever gone. The need, therefore, of employing shot firers in our mines is no longer in dispute. That part of the question is settled in the affirmative in the mind of every considerate mining man.

Thirteen years of experience with shot examiners has taught us also that the same persons that do the examining of shots should do the firing of them also. There is no controversy nor doubt about the wisdom of this matter any longer for it is acknowledged and practiced today in all the mines of our state.

I believe also I am correct in stating that the last thirteen years, during which time the shot examiners' law has been in operation in the mines of our state, have brought about an unanimity of opinion that both the shot examiner and shot firer should be employed by one authority, and in their performances of their duties be subservient altogether to this same one. Every fair observing man will concede at once that the present arrangement of operators and miners employing the same persons to examine, and to fire shots, and each party paying them one-half of their wages, and thereby each holding equal jurisdiction over them, is decidedly detrimental to efficient service and good discipline. Also, that it is not conducive to the best interests of either of the employers, nor to the best possible safety of the shot firers themselves. Every Iowa mine official knows real well that the dual authority, and interest, under which the shot examiners and shot firers of the mines of our state are working, have a positive tendency to weaken their moral courage, and to impair them to render conscientious and fearless service. He also knows how difficult it is for him to secure thorough inspection from, and to maintain good discipline over shot examiners and shot firers, because of the conflict of interest, and jurisdiction. All the mining men of Iowa also know that the present arrangement has been only a compromise or a makeshift from the beginning, and it should be plain to us all by this time, that try as hard as we may to make it the success it should be, we are evidently attempting the impossible, for no man, or a set of men, "can serve two masters at the same time without neglecting one or the other," and nowhere was the truth of the above state-

ment more clearly proven than in the case of the shot examiners and shot firers of Iowa mines.

I believe I am stating the truth also when I say that the general public today has come to view the work of shot firers as one of great importance, and one indispensable for the preservation of human lives. It will no longer admit that the employment of shot firers in our mines is solely an affair of the operators and miners; nor, will it today concede to leave the matter forever optional with them. It has come to claim a vital interest in shot firers, and to assert the right to make their employment in the mines of our state obligatory, and to demand a voice in their selection and in their regulation. It now regards it as its duty to settle this important question by demanding, and holding to strict account the proper parties, that they allow only the fewest possible number of men to be exposed to the dangers of mine explosions, or to any other great danger. Every humanitarian will readily concede the reasonableness, and the justice of the demand. It only requires that human lives be preserved as much as possible, and not be compelled unnecessarily to face known dangers. It simply asks that the universal gospel of the day, "Safety First," be practiced in the mines of our state as well as being preached.

I am well aware that I am discussing a question that has been a bitter bone of contention between the operators and miners of Iowa for the last thirteen or fourteen years. I shall not, however, allow their controversy to prevent me to express my sincere conviction, and I am doing it not with a feeling that I am meddling with the private affairs of the operators and miners, but with a sense of duty to the state which I have the honor to serve as one of its inspectors of mines. As its servant I am obliged to obey its mandates by "adding such suggestions as to needed future legislation as in my opinion may be important." I esteem the question of regulating, and of making the employment of shot firers in our mines obligatory of great importance, and one that should be no longer evaded. The operators and miners of Iowa owe it to themselves, and they owe it to the state, to so adjust their wage agreement, so that no unjust burden may be placed on one or the other, in the passage of a law that would make it obligatory upon all operators of coal mines to employ shot firers as well as shot examiners, to fire all shots after all other employees are out of the mine, and that those employed as

shot examiners and shot firers be one and the same parties, and subject only to state regulation in the performances of their duties. Therefore, I respectfully recommend to our General Assembly, the enactment of a law to the above end.

UNIFORMITY OF MINE STATISTICS.

The necessity for uniformity in compiling coal mine statistics throughout our mining states is apparent to every person who wishes to readily acquire correct data. Natural conditions and local customs may make the adoption of uniform legislation upon many things impractical, but I know of no good reason why the statistics of all coal mines throughout the country cannot be compiled in uniform manner. The first thing necessary to bring this desirable object to pass, is the adoption of a uniform fiscal year, or a calendar year. I favor the calendar year. It is the most natural division of time, will cause least confusion and error, and is the one most commonly used in the business world. In order to adopt the calendar year, it will be necessary to change the laws in some states. Such is the case in our state. At present our fiscal year ends June 30th. In the early history of mining the need of uniformity was not as obvious as it is today. Until recent years the coal operators of Iowa were required to make but few simple reports to one or two state departments. Now they are required to make out many minute reports to several state and national departments or bureaus. Some of these require reports for the calendar year and others for the fiscal year. This lack of uniformity causes much additional clerical work, and considerable confusion. This confusion is not due to inaccuracy in reports, but is due to their being compiled for different periods.

The systematic compiling of coal mine accidents, etc., by the U. S. Bureau of Mines in calendar periods is a commendable work, and the bureau is entitled to the co-operation of all, in order that the reports they publish may be as complete and as accurate as possible. It is unreasonable to expect the U. S. Bureau of Mines to compile their reports, in such way, so as to conform with all the various forms used in the different states. The sensible thing to do, is for all the states to compile all their statistics in conformity with those of the federal government. This would

make comparison between one state and another an easy task, and such uniformity and ready made comparison would in my opinion stimulate mine owners, mine and state officials to greater efforts in preventing accidents in their respective states, for it would arouse a feeling of state pride and engender a spirit of rivalry between states to excel in the preservation of human life and health. Therefore, I respectfully recommend the adoption of the calendar year for all mine statistics of the state in lieu of the fiscal year.

MONROE COUNTY.

The part of Monroe county in the Second Inspection District still leads other counties of the district in the production of coal.

The above part referred to, has in it thirteen mines in operation, and their total production for the biennial period ending June 30th, 1914, was 1,079,266 tons in the first year, and 1,004,485 tons in the second year, or a total of 2,083,751 tons, and they employed on an average of 1,976 men. Compared with the biennial period ending June 30th, 1912, it shows an increase in production of 360,242 tons, and 238 in the number of men employed.

The average number of days operated by the shipping mines in the part of the county belonging to the second inspection district for the year ending June 30th, 1913, was 220, and 184 days for the year ending June 30th, 1914. The local mines were in operation during the same period 120 and 127 days respectively.

During the first year of this biennial period, seven fatal and thirty-four non-fatal accidents occurred in and around the mines of the above part of the county, and three fatal, and nine non-fatal in the second year.

In the first year of this period 154,189 tons, and in the second 334,828 tons were produced for every life lost. One life was lost the first year for every 309 men employed, and one life lost for every 597 men employed in the second year. Two mines were abandoned during this biennial period and no new mines were opened.

MARION COUNTY.

The predictions that have been made by this department from time to time, that some day, coal mining in this county would be carried on, on a very extensive scale, are now being fulfilled.

In former years this county ranked fifth in the production of coal in the district, but at this time it ranks second, and will likely rank first within the next few years.

It has nineteen mines in operation, and their total production for this biennial period was 213,070 tons for the first year, and 307,668 tons for the second year, or a total of 520,738 tons, and they employed on an average 587 men. Compared with the biennial period ending June 30th, 1912, it shows an increase of 163,821 tons, and seventy in the number of men employed.

The average number of days the shipping mines of the county were in operation the first year of this period were 231, and 187 days in the second year. The local mines operated 156 days the first year, and 147 days the second year during the same period.

No fatal accidents were reported for this county for the first year of this biennial period, and but three non-fatal accidents. During the second year, three fatal accidents, and twelve non-fatal accidents were reported.

In the first year of this period 213,070 tons were produced, and 520 men were employed without loss of life. In the second year, one life was lost for every 102,556 tons produced, or one for every 218 men employed.

MAHASKA COUNTY.

No material change has taken place in the mining industry of this county since the last biennial report was issued by this department.

The total production of coal in the county for this biennial period was 534,517 tons for the first year, and 304,760 tons for the second year, or a total of 839,277 tons. The county has nineteen mines in operation, and they employ on an average 800 men. Comparing this biennial period with the one ending June 30th, 1912, it shows a decrease in production of 725,519 tons, and of 666 less men employed.

The decrease in the production of this county in the last biennial period is more than the total decrease of the entire district for the same period. Thirteen mines were abandoned, and no new mines of importance were opened during this biennial period ending June 30th, 1914.

The shipping mines of the county operated in this biennial period 213 days in the first year, and 206 days in the second year. The local mines operated 187 and 132 days respectively, during the same period.

In the first year of the biennial period no fatal accidents were reported, and but nine non-fatal accidents. In the second year one fatal accident and eight non-fatal accidents were reported.

JASPER COUNTY.

No new mines have been opened in this county since the last biennial report was issued by this department.

The Colfax Consolidated Coal Company, Colfax, are the principal operators in the county. To their mine No. 8, at Seever's, belongs the distinction of employing the most number of men of any single mine in the district. It has also the distinction of having the least number of accidents charged against it of any other mine of its class in the district. No fatal accident has occurred in or around this mine since June 18th, 1910. No non-fatal accident is recorded against it for the first year of this biennial period, and but two non-fatal accidents for the second year.

I do not believe that this splendid record is a mere happening. It is unquestionably one of the good results from employing, on the whole, a class of experienced mining men as employees, and from the commendable efforts of the officers in charge to maintain strict discipline in and around the mine.

Number 8 and 9 mines, which belong to the same company, will in all probability be worked through to one another before this report will be printed, and when this is done, it will serve as an additional escapeway for both mines. In addition to this, and to the original escape shaft that is on the east side of the mine, a new escape shaft was put down this spring, on the east side, close to the working face. These improvements have made mine No. 8, in the matter of escape ways, a safe one.

The county has ten mines in operation. The shipping mines operated 229 days in the first year of this biennial period and 178 days in the second year. The local mines operated 187 and 194 days respectively during the same period.

The total coal production of the county for the first year of this biennial period was 294,754 tons and 236,182 for the second year, or a total of 530,936 tons.

WAPELLO COUNTY.

The total coal production of this county for the biennial period ending June 30th, 1914, was 190,448 tons for the first year, and 157,774 tons for the second year, or a total of 348,222 tons.

Compared with the biennial period ending June 30th, 1912, it shows a decrease in production of 253,795 tons, and 142 less number of men employed. The decrease of production was caused principally by the abandonment of mine No. 5 at Rutledge of the Phillips Coal Company, and mine No. 2 of the Anchor Coal Company at Laddsdale.

In all probability the next biennial report of this department for this county will show a large increase in the production over the present report. Within this last biennial period, two promising new mines have been opened in the county. The Alpine Coal Company's mine, two and one-half miles east of Ottumwa, on the C., R. I. Ry., and the Bidwell Coal Company's mine at Bidwell, six miles southwest of Ottumwa, on the C., M. & St. P. Ry.

The Alpine mine is a slope, and a tail-rope system is used to bring the coal out to the tippie. The tippie is built with cross-over dumps, and shaker screens. This is the first and the only mine in the county to have shaker screens. The vein of coal ranges from three and one-half to about four and one-half feet in thickness, and while of excellent quality, it has contained, so far, considerable impurities in the territory that has been already excavated. The extensive borings made by the company, however, indicate that the largest portion of their territory contains a much cleaner, and lucrative vein of coal, and the mine undoubtedly will be a good producer for some years to come.

The Bidwell mine is a shaft, and the coal is found at a depth of about 150 feet. The equipment is substantial, and capable of

handling a large output. The vein of coal is from five to six feet thick. It is of excellent quality and exceptionally free from impurities, with good slate roof.

Undoubtedly this mine is opened out in one of the best coal fields that has ever been mined in Wapello county, and no better, if its equal, can be found today anywhere in the district.

VAN BUREN, JEFFERSON, DAVIS, KEOKUK
AND WARREN.

Nothing new can be said of the local mines in Van Buren, Jefferson, Davis, Keokuk and Warren counties. The names of the operators, the number of mines in operation and the number of miners employed are found elsewhere in this report.

FATAL ACCIDENTS IN DISTRICT NO. 2

Date	Name	Age	Occupation	Cause of Death
1912				
July 8.	George Barnick...	45	Miner	Fall of slate at face
August 16.	Cyrus Hurst...	39	Miner	Ignition of powder keg
September 13.	Leo Robb...	23	Miner	Fall of boulder at face
September 18.	Wm. Burke...	50	Miner	Fall of slate at face
September 28.	Clifford Bates...	24	Miner	Fall of slate at face
November 8.	Gordon Patterson	19	Trip rider	Run over by motor
1913				
February 7.	James Carson...	36	Miner	Fall of slate at face
March 8.	Fred Looney...	37	Miner	Fall of slate at face
March 30.	John Lorence...	35	Timber man	Caught between mine car & timber
October 10.	Victor Chapin...	30	Miner	Fall of slate at face
1914				
January 8.	Ed. Penelman...	23	Miner	Flying coal from shot
January 26.	Arthur Middleton	23	Miner	Fall of roof (pillar work)
February 9.	Joe Beaver...	50	Miner	Fall of slate at face
February 9.	Tom Calvert...	44	Miner	Ignition of powder keg
March 4.	John L. Middleton	31	Miner	Fall of slate at face
March 18.	John H. Taylor...	36	Pump and repair man	Dust explosion
March 18.	John W. Williams	29	Stable man	Dust explosion
March 21.	Alfred Wallis...	30	Miner	Fall of slate at face
April 18.	J. W. Harris...	45	Shot firer	Flying coal from shot
May 2.	Add Poe...	33	Miner	Fall of slate at face

FOR TWO YEARS ENDING JUNE 30, 1914.

Employed by	County	Married or Single	No. of Children	Time of Accident	Nationality
Regal Coal Co. No. 2	Monroe	Wife	---	2:15 p. m.	Austrian
Consolidation Coal Co. No. 17	Monroe	Single	---	1:50 p. m.	Negro
Ratcliff Coal Co.	Van Buren	Wife	---	10:30 a. m.	American
Phillips Coal Co. No. 5	Wapello	Wife	1	2:15 p. m.	Irish
Consolidation Coal Co. No. 16	Monroe	Single	---	11:15 a. m.	Negro
Consolidation Coal Co. No. 12	Monroe	Single	---	8:40 a. m.	Negro
Consolidation Coal Co. No. 16	---	Wife	2	9:00 a. m.	Negro
Crescent Coal Co. No. 7	Monroe	Single	---	9:00 a. m.	English
Crescent Coal Co. No. 6	Monroe	Wife	2	9:00 p. m.	Austrian
Anderson Coal Co.	Marion	Wife	1	8:30 a. m.	French
Oak Dale Coal Co.	Warren	Single	---	11:30 a. m.	American
Morey Clay Products Co.	Wapello	Wife	---	9:00 a. m.	English
English Creek Coal Co. No. 2	Marion	Wife	8	9:15 a. m.	English
Anderson Coal Co.	Marion	Wife	8	3:00 p. m.	American
Morey Clay Products Co.	Wapello	Wife	2	10:00 a. m.	English
Consolidation Coal Co. No. 12	Monroe	Wife	6	5:10 p. m.	American
Consolidation Coal Co. No. 12	Monroe	Wife	2	5:10 p. m.	Negro
Colfax Consolidated Coal Co. No. 9	Jasper	Wife	2	8:10 a. m.	American
Rex Fuel Co.	Madaska	Wife	5	5:00 p. m.	American
Consolidation Coal Co. No. 16	Monroe	Wife	4	9:45 a. m.	Negro

REPORTS OF NON-FATAL ACCIDENTS IN DISTRICT

NO. 2, FROM JULY 1, 1913, to JUNE 30, 1914.

Date	Name	Occupation	Cause of Accident
July 1913			
July 1.	Geo. Hibbert	Miner	Fall of false top
July 2.	W. J. Reese	Driver	Run over by mine car
July 8.	David Rutledge	Day man	Fall of slate
July 25.	Miss Belandier	Miner	Fall of slate
July 31.	E. Mickens	Driver	Run over by mine car
August 8.	Wm. Gillette	Miner	Carbide lamp exploded
August 14.	G. W. Pendleton	Miner	Fall of slate
August 29.	John Graves	Miner	Run over by mine car
September 3.	Theo. Mathewson	Driver	Caught between car and rib
September 3.	Clarence Wallace	Driver	Caught between cars
September 7.	J. W. Reasby	Miner	Fall of slate
September 10.	G. B. Williams	Driver	Caught between cars
September 15.	Alex Dalabye	Timber help.	Fall of slate
September 23.	Joe Fartherill	Boat driver.	Caught between cars
October 1.	Wm. Washington	Miner	Fall of slate
October 12.	Ernest Selby	Trapper	Hand caught in bull wheel
October 12.	Robt. Blackey	Driver	Side chain broke and struck him
October 18.	Robt. Woodford	Driver	Fell from tail chain
October 23.	Geo. Rhodes	Trailer	Caught by moving cars
November 10.	Wm. Clouse	Coupler	Hand caught between cars
November 13.	Henry Davison	Driver	Hand caught bet. car & door frame
November 15.	S. W. Swope	Miner	Fall of slate
November 18.	Walter Dingman	Miner	Fall of slate
November 28.	Edward Harris	Day man	Ignition of gasoline
December 5.	John Noeur	Track layer.	Fall of slate
December 9.	Matt Dover	Miner	Fall of slate
December 9.	Jos. Berts	Miner	Fall of slate
December 18.	Steve Anderson	Motor man.	Timber fell on him
December 16.	A. L. Van Gilder	Carpenter	Fell down dirt dump
December 17.	Wm. Sontag	Miner	Fall of slate
December 20.	John Simmons	Timber man	Run over by mine car
December 28.	Adam Armstrong	Miner	Fall of coal
January 1913			
January 4.	A. L. Devoe	Top man	Fell down shaft
January 14.	George Lord	Day man	Fall of slate
January 17.	Proper Colonne	Miner	Prop fell on him
January 30.	Louis Thuever	Miner	Fall of coal and rock
January 29.	O. Godfrey	Miner	Fall of slate
February 7.	Wm. Hicks	Driver	Run over by car
February 17.	John Loeb	Miner	Run over by mine car
March 19.	Andrew Horne	Miner	Run over by mine car
March 19.	Thos. Jackson	Timber man	Fall of slate

Character of Injury	Employed by	County	Time of Accident
Nose broken, head cut and ankle bruised	Anchor Coal Co.	Wapello	11:40 a.m.
Small bone in ankle fractured	Crescent Coal Co. No. 6	Monroe	2:30 p.m.
Back bruised	Atwood Coal Co. No. 2	Mahaska	2:30 p.m.
Collar bone broken	Crescent Coal Co. No. 6	Monroe	3:00 p.m.
Back and side injured	Consolidation Coal Co. No. 15	Monroe	1:30 p.m.
Eye injured	Consolidation Coal Co. No. 19	Monroe	8:00 a.m.
Leg injured	Consolidation Coal Co. No. 15	Monroe	7:30 a.m.
Finger cut off	Consolidation Coal Co. No. 17	Monroe	11:50 a.m.
Hip injured	Crescent Coal Co. No. 6	Monroe	9:15 a.m.
Slight fracture of bone in left arm	Colfax Consolidated Coal Co. No. 7	Jasper	12:30 p.m.
Back bruised and rib fractured	Consolidation Coal Co. No. 17	Monroe	11:15 a.m.
Right leg fractured	Anchor Coal Co.	Wapello	8:15 a.m.
Hip thrown out of place	Consolidation Coal Co. No. 15	Monroe	1:00 p.m.
Hand broken	Consolidation Coal Co. No. 18	Monroe	8:15 a.m.
Right ankle broken	Consolidation Coal Co. No. 12	Monroe	1:30 p.m.
Hand mashed	Central Coal Co. No. 3	Monroe	1:00 p.m.
Lower lip and right eye cut	Consolidation Coal Co. No. 15	Monroe	10:00 a.m.
Leg broken	Consolidation Coal Co. No. 16	Monroe	9:00 a.m.
Foot mashed	Consolidation Coal Co. No. 15	Monroe	12:30 p.m.
Hand mashed	Central Coal Co. No. 3	Monroe	1:00 p.m.
Thumb taken off	Atwood Coal Co. No. 2	Mahaska	11:00 a.m.
Collar bone broken	Manual Arandus Coal Co.	Wapello	9:00 a.m.
Back and shoulders injured	Atwood Coal Co. No. 2	Mahaska	9:00 a.m.
Legs burnt	English Creek Coal Co. No. 2	Marion	6:30 p.m.
Left hand bruised and one finger broken	Consolidation Coal Co. No. 15	Monroe	
Left hand injured and shoulder bruised	Consolidation Coal Co. No. 18	Monroe	1:00 p.m.
2 fingers on left hand taken off and 2 broken on right	Consolidation Coal Co. No. 14	Mahaska	10:00 a.m.
Arm and collar bone broken	Consolidation Coal Co. No. 12	Monroe	11:00 a.m.
Bone fractured between wrist and elbow	Consolidation Coal Co. No. 17	Monroe	8:30 a.m.
Broken leg	Crescent Coal Co. No. 7	Monroe	3:00 p.m.
Foot bruised and 1 toe broken	Consolidation Coal Co. No. 17	Monroe	3:15 p.m.
Wrist injured	Regal Coal Co. No. 2	Monroe	9:00 a.m.
Broken hip	Eagle Point Coal Co.	Marion	11:00 a.m.
One rib broken	Phillips Coal Co. No. 9	Wapello	10:00 a.m.
Arm broken	Rex Fuel Co. No. 2	Mahaska	9:00 a.m.
Back and shoulders injured	Consolidation Coal Co. No. 14	Mahaska	8:30 a.m.
Arm broken	Empire Mining Co. No. 11a	Marion	10:30 a.m.
Foot badly mashed and one bone broken	Crescent Coal Co. No. 7	Monroe	9:30 a.m.
Leg broken above ankle	Consolidation Coal Co. No. 16	Monroe	
Toe mashed	Rex Fuel Co. No. 2	Mahaska	3:00 p.m.

REPORTS OF NON-FATAL ACCIDENTS IN DISTRICT NO. 2,

Date	Name	Occupation	Cause of Accident
March 20.	Vic Jueco	Miner	Fall of slate
April 2.	Wm. Rhodes	Miner	Fall of slate
April 8.	Steve Antolek	Top man	Jacking a car and jack slipped
May 1.	P. Coffey	Miner	Run over by mine car
May 1.	Joe Nickles	Driver	Fell off tail chain
May 28.	Jack Garland	Driver	Run over by mine car
June 3.	Gus Watkins	Driver	Run over by motor
June 6.	James Scott	Miner	Fall of slate
June 14.	Mike Klobasner	Miner	Fall of slate
June 20.	Andrew Jefferson	Miner	Fall of slate
June 24.	John G. Korpan	Miner	Fall of slate
July 13.	Wm. Brown	Miner	Fall of slate
July 26.	Joseph Fry	Mach. run.	Run over by mining machine
August 12.	Mike Loranee	Day man	Fall of slate
August 27.	Mal Anderson	Driver	Collision of mine cars
August 18.	C. Overstake	Day man	Fall of rock and slate
September 6.	Tom Danks	Day man	Fall of slate
September 19.	Peter Alexander	Driver	Fall of slate
September 23.	Ed. Robinson	Driver	Kicked by mule
September 24.	Wm. Truehart	Driver	Kicked by mule
October 4.	John Rodgers	Cager	Struck by cage
October 10.	W. J. Nickson	Miner	Fall of slate
October 23.	Harry Robinson	Miner	Fall of slate
October 28.	Thos. Cowan	Miner	Fall of slate
October 29.	Arthur Stillwell	Driver	Run over by mine car
November 3.	Wm. Anderson	Driver	Fall of slate
November 4.	Rob. Watkins	Miner	Fall of slate
November 4.	Jas. Barbour	Motor man	Motor jumped off track
November 26.	J. C. White	Miner	The ignition of a keg of powder.
December 1.	Wm. Waters	Driver	Caught between car and roof
December 3.	Charlie Joosenek	Miner	Fall of slate
December 4.	W. C. Hidenet	Driver	Run over by car
December 17.	John Conley	Driver	Fall of slate
December 22.	John Domjanish	Miner	Mule ran away with car
January 12.	Chas. Notar	Miner	Fall of slate
January 23.	Wm. Greenhalgh	Mach. run.	Fell in front of machine
January 26.	Wm. Ridener	Miner	Fall of slate
January 27.	Joe Candians	Shot exam.	Dust explosion
January 16.	Noe Roe	Miner	Fall of slate
February 27.	Andrew Carlson	Miner	Steam pipe bursted
March 19.	Arzie Godfrey	Loader	Run away car
April 7.	Joe Phenis	Driver	Run away mule
April 4.	Sherman Hoggett	Cager	Falling coal in shaft
May 18.	Earl Brown	Driver	Kicked by mule
May 26.	Leo Atkins	Driver	Foot caught under car
June 19.	Chas. Anderson	Miner	Fall of slate
June 26.	Clifford Bolton	Miner	Driver
June 23.	R. E. Miller	Driver	Fall of slate
June 24.	Guy Geneva	Weigh boss.	Car dropped on foot
June 27.	Frank Sly	Miner	Fall of slate

FROM JULY 1, 1913, TO JUNE 30, 1914—CONTINUED.

Character of Injury	Employed by	County	Time of Accident
Hip bone broken	Crocket Coal Co.	Mahaska	7:30 a.m.
Leg broken	Crocket Coal Co.	Mahaska	10:00 a.m.
Shoulder and back injured	Consolidation Coal Co. No. 12	Monroe	7:30 a.m.
Leg broken	Consolidation Coal Co. No. 17	Monroe	2:30 p.m.
Leg broken	Maple Coal Co.	Monroe	At night
Hip dislocated	Consolidation Coal Co. No. 12	Monroe	7:45 a.m.
Leg cut	Consolidation Coal Co. No. 12	Monroe	10:00 p.m.
Leg broken	Consolidation Coal Co. No. 16	Monroe	8:40 a.m.
Leg broken	Colfax Consolidated Coal Co. No. 7	Jasper	12:00 a.m.
Head cut and fingers washed.	Crescent Coal Co. No. 6	Monroe	1:30 p.m.
Arm broken and face cut	Consolidation Coal Co. No. 10	Monroe	2:30 p.m.
Back injured	Hoover Coal Co.	Monroe	
Ribs fractured and body injured	Phillips Coal Co. No. 8	Wapello	
Two toes broken and hand sprained	Empire Mining Co.	Marion	2:00 p.m.
Leg fractured	Crescent Coal Co. No. 6	Monroe	9:00 a.m.
Bruised and squeezed	Phillips Coal Co. No. 2	Wapello	
Two ribs broken	Anchor Coal Co. No. 2	Wapello	8:00 p.m.
Rib broken	Colfax Consolidated Coal Co. No. 8	Jasper	11:15 a.m.
Right arm broken	Consolidation Coal Co. No. 10	Monroe	10:45 a.m.
Broken ankle	Crescent Coal Co. No. 7	Monroe	2:30 p.m.
Rib broken	Consolidation Coal Co. No. 10	Monroe	10:50 a.m.
Right foot injured	Cons. Indiana Coal Co.	Marion	3:00 p.m.
Knee crushed	English Creek Coal Co.	Marion	11:00 a.m.
Ankle sprained	Anderson Coal Co.	Mahaska	2:30 p.m.
Leg fractured	Atwood Coal Co. No. 4	Mahaska	10:30 a.m.
Leg broken	Rex Fuel Co. No. 2	Wapello	9:00 a.m.
Hand injured	Phillips Coal Co. No. 2	Marion	2:00 p.m.
Arm broken	Empire Mining Co. No. 11a	Marion	4:30 p.m.
Ankle broken	Empire Mining Co. No. 11a	Marion	
Hands and face burnt	Consolidation Coal Co. No. 12	Monroe	10:00 p.m.
Badly bruised	Empire Mining Co. No. 13	Marion	9:10 a.m.
Leg broken	Rex Fuel Co. No. 1	Mahaska	7:45 a.m.
Index finger cut off	Rex Fuel Co. No. 2	Mahaska	8:00 a.m.
Rib fractured	Newton Coal Co.	Jasper	9:30 a.m.
Big toe broke	Consolidated Ind. Coal Co.	Marion	11:00 a.m.
Back injured	Excelsior Coal Co. No. 1	Mahaska	8:30 a.m.
Left leg broken	Cons. Indiana Coal Co.	Marion	2:00 p.m.
Leg broken	Rex Fuel Co. No. 2	Mahaska	11:20 a.m.
Hands and face burned	Maple Coal Co.	Monroe	4:45 p.m.
Back injured	Phillips Coal Co. No. 2	Wapello	
Face and hands scalded	Consolidation Coal Co. No. 10	Monroe	2:15 p.m.
Arm broken	Empire Mining Co.	Marion	2:00 p.m.
Collar bone broken	Rex Fuel Co. No. 2	Mahaska	8:00 a.m.
Two fingers cut off	Consolidation Coal Co. No. 10	Monroe	7:30 a.m.
Hip dislocated	Crescent Coal Co. No. 7	Monroe	2:30 p.m.
Right ankle broken	Cons. Ind. Coal Co.	Marion	3:00 p.m.
Left leg broken	Colfax Consolidated Coal Co. No. 8	Jasper	2:00 p.m.
Thumb injured	Rex Fuel Co. No. 2	Mahaska	2:00 p.m.
One leg and two ribs broken	Bidwell Coal Co.	Wapello	2:45 p.m.
Bone broken in right foot	Empire Mining Co. No. 12	Marion	12:45 p.m.
Leg broken	Bidwell Coal Co.	Wapello	8:30 a.m.

LIST OF COMPANIES, SUPERINTEND

MONROE

Name of Company	Superintendent	Post Office Address
Consolidation Coal Co. No. 16.		
Consolidation Coal Co. No. 17.		
Crescent Coal Co. No. 6.	H. T. Davis	Eddyville R. F. D.
Crescent Coal Co. No. 7.	Wm. Ross	Whiteburgh
Hoover Fuel Co.	E. M. Dayson	Albia
Regal Coal Co. No. 4.	Daniel Regal	Oskaloosa
Maple Coal Co.	H. H. Snider	Des Moines
Excelsior Coal Co. No. 3.	George Harris	Oskaloosa
Central Coal Co. No. 3.	T. L. Evans	Lockman
Hank Evans & Co.	Hank Evans	Lockman
Coalfield Fuel Co.	W. P. Jamieson	Coalfield
Wm. Aubrey Coal Co.	Wm. Aubrey	Eddyville
Barker Coal Co.	Wm. Barker	Albia

VAN BUREN

Ratcliff Coal Co.	H. L. Ratcliff	Douglas-Leando
Douglas Bros. Coal Co.	V. P. Doud	Douglas-Leando
H. Oliver Coal Co.	H. Oliver	Selma
H. Knott Coal Co.	H. Knott	Farmington
P. M. Cahill Coal Co.	P. M. Cahill	Farmington
A. B. Gardner Coal Co.	A. B. Gardner	Selma
L. E. Mathias Coal Co.	L. E. Mathias	Birmingham

MARION

English Creek Coal Co. No. 2.	Edward Rowley	Knoxville
English Creek Coal Co. No. 3.	Edward Rowley	Knoxville
English Creek Coal Co. No. 4.	Edward Rowley	Knoxville
Anderson Coal Co. No. 1.	B. F. Evans	Knoxville R. F. D.
Consolidated Indiana Coal Co. No. 1.	W. P. Thomas	Metzger
Empire Mining Co. No. 19.	Henry Long	Everist
Empire Mining Co. No. 18.	Henry Long	Everist
Harvey Coal Co.	J. A. J. Power	Everist
Alex Knox Coal Co.	Alex Knox	Knoxville
Pella Coal Co.	Godfrey H. Bevan	Pella
Copeman & Dillon Coal Co.	Jas. Copeman	Tella
Reynolds Coal Co.	O. B. Reynolds	Knoxville R. F. D. 6.
Carey Vaughan Coal Co.	Carey Vaughan	Knoxville R. F. D.
Fortier & Clements Coal Co.	Fred Clements	Knoxville
J. F. McCracken Coal Co.	J. F. McCracken	Knoxville
Ed Brown Coal Co.	Ed Brown	Knoxville
Charles Fortner Coal Co.	Chas. Fortner	Flagler
Oiley Coal Co.	J. L. Hicksbaugh	Oiley
Yukon Coal Co.	J. B. Vreelair	Oiley

WARREN

Oakdale Coal Co.	T. T. Davis	Carlisle
C. F. Priest Coal Co.	C. F. Priest	Hartford
Timber Vein Coal Co.	A. B. Olson	Indianola R. F. D.
D. L. Uterson Coal Co.	D. L. Uterson	Sommerset

ENTS, ETC., IN SECOND DISTRICT.

COUNTY

Place of Working	How Ventilated	Power Used	Shipping or Local	Railroad Connections
Shaft ... Room and pillar.	Fan	Steam and electricity	Shipping	C. & N. W. Ry.
Shaft ... Room and pillar.	Fan	Steam and electricity	Shipping	C. & N. W. Ry.
Shaft ... Room and pillar.	Fan	Steam	Shipping	C. & N. W. Ry.
Shaft ... Room and pillar.	Fan	Steam	Shipping	C. & N. W. Ry.
Shaft ... Room and pillar.	Fan	Steam	Shipping	C. & N. W. Ry.
Shaft ... Room and pillar.	Fan	Steam	Shipping	C. & N. W. Ry.
Shaft ... Room and pillar.	Fan	Steam	Shipping	C. & N. W. Ry.
Slope ... Room and pillar.	Furnace	Steam	Shipping	M. & St. L.
Slope ... Room and pillar.	Furnace	Steam	Shipping	M. & St. L.
Slope ... Room and pillar.	Furnace	Steam	Shipping	M. & St. L.
Slope ... Room and pillar.	Furnace	Horse	Local	
Slope ... Room and pillar.	Furnace	Steam	Local	

COUNTY

Shaft ... Room and pillar.	Furnace	Gasoline	Local	
Shaft ... Room and pillar.	Fan	Gasoline	Local	
Shaft ... Room and pillar.	Furnace	Horse	Local	
Shaft ... Room and pillar.	Furnace	Horse	Local	
Shaft ... Room and pillar.	Furnace	Horse	Local	
Shaft ... Room and pillar.	Furnace	Horse	Local	

COUNTY.

Slope ... Room and pillar.	Fan	Steam	Shipping	C. & R. I. Ry.
Shaft ... Room and pillar.	Fan	Steam	Shipping	C. & R. I. Ry.
Slope ... Room and pillar.	Fan	Steam	Shipping	C. & R. I. Ry.
Shaft ... Room and pillar.	Fan	Steam	Shipping	C. & R. I. Ry.
Slope ... Room and pillar.	Fan	Electricity	Shipping	Wabash Ry.
Slope ... Room and pillar.	Fan	Electricity	Shipping	Wabash Ry.
Slope ... Room and pillar.	Fan	Gasoline	Shipping	C. B. & Q. Ry.
Slope ... Room and pillar.	Furnace	Steam	Local	
Shaft ... Room and pillar.	Fan	Gasoline	Local	
Slope ... Room and pillar.	Natural	Horse	Local	
Slope ... Room and pillar.	Fan	Horse	Local	
Shaft ... Room and pillar.	Furnace	Horse	Local	
Slope ... Room and pillar.	Furnace	Horse	Local	
Slope ... Room and pillar.	Natural	Horse	Local	
Slope ... Room and pillar.	Natural	Horse	Local	
Slope ... Room and pillar.	Furnace	Horse	Local	
Slope ... Room and pillar.	Furnace	Horse	Local	
Slope ... Room and pillar.	Furnace	Horse	Local	

COUNTY

Shaft ... Room and pillar.	Furnace	Horse	Local	
Shaft ... Room and pillar.	Furnace	Horse	Local	
Shaft ... Room and pillar.	Fan	Steam	Local	

LIST OF COMPANIES, SUPERINTEND

JASPER

Name of Company	Superintendent	Post Office Address
Colfax Consolidated Coal Co. No. 8	Wm. Abram	Colfax
Colfax Consolidated Coal Co. No. 9	Wm. Abram	Colfax
Union Coal Co.	J. L. Silvers	Des Moines
Newton Coal Co.	A. H. Brown	Newton
David McAllister Coal Co.	David McAllister	Newton
Isaac Ledger Coal Co.	Isaac Ledger	Prairie City
Pummar's Grove Coal Co.	F. M. Bloomquist	Colfax
Batty & Darsen Coal Co.	L. Dawson	Monroe
Anderson & Baker Coal Co.	Jas. Baker	Monroe
Last Coal Co.		Monroe

KEOKUK

Carson Bros. Coal Co.	Thos. Carson	What Cheer
Creamery Coal Co.	J. T. Holiday	What Cheer
Shirlow & Sons Coal Co.	Wm. Shirlow	What Cheer

WAPELLO

Phillips Coal Co. No. 9.	A. J. Erskin	Ottumwa
Bidwell Coal Co.	W. T. Ramsey	Bidwell
Alpine Coal Co.	L. Akers	Ottumwa
Anchor Coal Co.	W. B. Williams	Laddsdale
Trio Coal Co.	Howell Pried	Ottumwa
R. E. Cooper Coal Co.	R. E. Cooper	Ottumwa
Manual Arandus Coal Co.	Manual Arandus	Ottumwa
Job Carter Coal Co.	Job Carter	Eldon
Geo. Brown Coal Co.	Geo. Brown	Ottumwa R. F. D.
South Ottumwa Coal Co.	Geo. Chambers	Ottumwa
McIntosh Coal Co.	W. M. McIntosh, Jr.	Eldon
W. M. McIntosh Coal Co.	W. M. McIntosh, Jr.	Eldon
W. W. Laughlin Coal Co.	W. W. Laughlin	Ottumwa
Robt. Parker Coal Co.	Robt. Parker	Ottumwa
E. J. Gullick Coal Co.	E. J. Gullick	Kirkville

DAVIS

Jas. Payne Coal Co.	Jas. Payne	Eldon
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JEFFERSON

Stever Coal Co.	Geo. T. Stever	Fairfield R. F. D. 7.
Elsworth Martin Coal Co.	Elsworth Martin	Fairfield R. F. D. 7.

ENTS, ETC., IN SECOND DISTRICT—CONTINUED.

COUNTY

Place of Working	How Ventilated	Power Used	Shipping or Local	Railroad Connections
Shaft --- Room and pillar..	Fan.....	Steam and electricity	Shipping	Colfax & N. Ry.
Shaft --- Room and pillar..	Fan.....	Steam and electricity	Shipping	Colfax & N. Ry.
Shaft --- Room and pillar..	Fan.....	Steam	Local	C. & R. S. Ry.
Shaft --- Room and pillar..	Fan.....	Steam	Local	
Slope --- Room and pillar..	Furnace..	Horse	Local	
Shaft --- Room and pillar..		Steam	Local	
Shaft --- Room and pillar..	Fan.....	Horse	Local	
Shaft --- Room and pillar..		Horse	Local	
Shaft --- Room and pillar..		Horse	Local	

COUNTY

Shaft --- Room and pillar..	Fan.....	Horse	Local	
Shaft --- Room and pillar..	Furnace..	Horse	Local	
Shaft --- Room and pillar..	Ice	Steam	Local	

COUNTY

Shaft --- Room and pillar..	Fan.....	Steam	Shipping	C., M. & St. P.
Shaft --- Room and pillar..	Fan.....	Steam	Shipping	C., M. & St. P.
Slope --- Room and pillar..	Fan.....	Steam and electricity	Shipping	C. & R. I. Ry.
Slope --- Room and pillar..	Furnace..	Horse	Local	C. & R. I. Ry.
Shaft --- Room and pillar..	Furnace..	Horse	Local	
Slope --- Room and pillar..	Furnace..	Horse	Local	
Shaft --- Room and pillar..	Fan.....	Horse and gas.	Local	
Shaft --- Room and pillar..	Fan.....	Steam	Local	
Shaft --- Room and pillar..	Fan.....	Steam	Local	
Shaft --- Room and pillar..	Furnace..	Horse	Local	
Shaft --- Room and pillar..	Fan.....	Horse and gas.	Local	
Shaft --- Room and pillar..	Furnace..	Horse	Local	
Shaft --- Room and pillar..	Furnace..	Horse	Local	

COUNTY

Slope --- Room and pillar..	Furnace..	Horse	Local	
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COUNTY

Shaft --- Room and pillar..	Furnace..	Horse	Local	
Slope --- Room and pillar..	Stm. jet.	Gasoline	Local	

LIST OF COMPANIES, SUPERINTEND

MAHASKA

Name of Company	Superintendent	Post Office Address
Bex Fuel Co. No. 2.....	John Lacost.....	Bussey.....
Atwood Coal Co. No. 4.....	Alex Walker.....	What Cheer.....
Atwood Coal Co. No. 5.....	Alex Walker.....	What Cheer.....
Bolton-Hoover Coal Co. No. 2..	John Canty.....	Oskaloosa.....
Equality Coal Co.	Earl Brown.....	Bussey.....
Richards & Cruikshank Coal Co.	E. A. Richards.....	Buxton.....
W. F. Williams Coal Co.	W. F. Williams.....	New Sharon.....
Evans Bros. Coal Co.	Gwilym Evans.....	Given.....
Morris Bros. Coal Co.	G. B. Morris.....	Oskaloosa R. F. D.
Levi Wassenschof Coal Co.	Levi Wassenschof.....	Beacon.....
Deering & Owen Coal Co.	R. D. Owens.....	Given.....
Boggs Coal Co.	Jas. P. Boggs.....	Oskaloosa R. F. D. 4..
Ralph Hart Coal Co.	Ralph Hart.....	Oskaloosa R. F. D. 1..
Herling Coal Co.	Geo. Herling.....	Oskaloosa R. F. D. 4..
Ahrweiler Coal Co.	Herman Ahrweiler.....	Oskaloosa.....
Jas. Lawrence Coal Co.	Jas. Lawrence.....	Beacon.....
Coulter & Sons Coal Co.	Allen Coulter.....	Oskaloosa.....
Griffiths Coal Co.	Wm. Griffiths.....	Oskaloosa.....
Deck Coal Co.	C. G. Deck.....	Oskaloosa.....

ENTS, ETC., IN SECOND DISTRICT—CONTINUED.

COUNTY

Place of Working	How Ventilated	Power Used	Shipping or Local	Railroad Connections
Shaft --- Room and pillar..	Fan.....	Steam.....	Shipping	C. & N. W. Ry.
Slope --- Room and pillar..	Fan.....	Steam and gas.	Shipping	C. & R. I. Ry.
Slope --- Room and pillar..	Fan.....	Steam.....	Shipping	C. & R. I. Ry.
Slope --- Room and pillar..	Fan.....	Steam.....	Shipping	C. & B. & Q. Ry.
Shaft --- Room and pillar..	Fan.....	Steam.....	Shipping	C. & N. W. Ry.
Shaft --- Room and pillar..	Fan.....	Steam.....	Shipping	C. & N. W. Ry.
Slope --- Room and pillar..	Furnace..	Horse.....	Local....	
Shaft --- Room and pillar..	Furnace..	Horse.....	Local....	
Slope --- Room and pillar..	Furnace..	Horse.....	Local....	
Shaft --- Room and pillar..	Fan.....	Horse.....	Local....	
Slope --- Room and pillar..	Furnace..	Horse.....	Local....	
Shaft --- Room and pillar..	Furnace..	Horse.....	Local....	
Slope --- Room and pillar..	Natural..	Horse.....	Local....	
Slope --- Room and pillar..	Furnace..	Horse.....	Local....	
Slope --- Room and pillar..	Furnace..	Horse.....	Local....	
Slope --- Room and pillar..	Furnace..	Horse.....	Local....	
Slope --- Room and pillar..	Furnace..	Horse.....	Local....	
Shaft --- Room and pillar..	Furnace..	Horse.....	Local....	

TABLE NO. 1.

SHOWING NUMBER OF MINES, OUTPUT OF COAL, NUMBER OF MINERS AND OTHER EMPLOYEES, IN DISTRICT NO. 2, FOR THE YEAR ENDING JUNE 30th, 1914.

County	No. of mines	Tons of coal of all kinds produced	No. of miners employed	No. of other employees inside	No. of outside employees	Total No. of employees
Monroe	14	1,009,206	1,613	600	140	2,162
Mahaska	29	581,517	684	161	96	944
Jasper	11	394,794	977	143	62	1,182
Marion	17	215,070	320	91	77	520
Wapello	15	190,448	311	113	61	474
Van Buren	7	13,000	80	4	9	93
Kokuk	1	4,054	11	1	1	14
Warren	1	4,000	8	1	1	10
Jefferson	2	2,638	9	1	1	12
Davis	1	860	4	1	1	6
Total	100	2,337,708	3,259	1,022	446	4,727

TABLE NO. 2.

SHOWING NUMBER OF MINES, OUTPUT OF COAL, NUMBER OF MINERS AND OTHER EMPLOYEES, IN DISTRICT NO. 2, FOR THE YEAR ENDING JUNE 30th, 1913.

County	No. of mines	Tons of coal of all kinds produced	No. of miners employed	No. of other employees inside	No. of outside employees	Total No. of employees
Monroe	13	1,004,485	1,296	871	123	1,790
Marion	19	317,688	450	116	88	654
Mahaska	19	304,760	479	110	61	650
Jasper	10	230,182	241	164	68	673
Wapello	16	157,774	203	114	60	446
Van Buren	7	12,500	25	3	8	36
Kokuk	1	7,330	10	1	1	15
Warren	1	7,102	14	4	1	21
Jefferson	2	2,200	19	2	1	24
Davis	1	640	3	1	1	4
Total	98	2,040,292	2,921	889	412	4,196

TABLE NO. 3.

SHOWING THE OUTPUT OF THE COAL PRODUCING COUNTIES OF DISTRICT NO. 2, FOR THE PAST SEVEN YEARS.

Counties	1908	1909	1910	1911	1912	1913	1914
Monroe (part)	865,467	698,758	712,004	809,326	913,063	1,079,266	1,074,485
Mahaska	772,408	805,543	937,417	886,435	929,300	924,117	104,709
Marion	227,745	291,007	309,050	227,308	134,369	213,670	307,608
Wapello	244,214	222,587	222,781	333,861	398,156	190,448	157,774
Kokuk	11,900	12,584	17,500	11,978	11,890	4,054	2,250
Van Buren	17,318	15,000	16,022	13,154	13,259	13,000	12,500
Warren	5,650	4,474	5,300	-----	3,713	4,000	7,102
Davis	4,594	1,480	1,600	1,120	1,000	840	640
Jefferson	2,040	2,109	2,181	4,906	4,601	2,682	2,200
*Jasper	-----	-----	-----	317,006	290,084	294,754	236,182
Total	2,531,840	2,574,639	2,138,111	2,602,984	2,290,153	2,337,708	2,640,292

*See Third District for years 1908-9 and 10.

TABLE NO. 4.

SHOWING TONNAGE IN DISTRICT NO. 2, FOR PAST FOURTEEN YEARS, WITH NUMBER OF FATAL ACCIDENTS AND NUMBER OF EMPLOYEES, WITH TONS PER ACCIDENT, ETC.

Year	No. of fatal accidents	Tons of coal mined each year	No. of employees	Tons of coal mined per accident	No. of employees for each accident
1901	13	1,870,123	3,990	143,856	305
1902	21	1,947,519	3,187	49,708	103
1903	5	1,466,605	3,145	305,250	628
1904	8	1,972,023	4,830	246,506	506
1905	6	2,488,000	4,994	414,708	502
1906	12	2,338,254	4,184	178,125	229
1907	10	2,480,305	4,026	207,442	377
1908	9	2,351,840	4,079	260,205	509
1909	9	2,574,639	4,272	286,548	475
1910	12	2,138,111	4,327	180,009	353
1911	12	2,602,984	5,138	216,912	439
1912	11	2,290,153	4,826	208,190	441
1913	9	2,337,708	4,777	259,740	521
1914	11	2,640,292	4,196	185,009	381

THIRD DISTRICT

BIENNIAL REPORT OF THE
THIRD DISTRICT.

EMBRACING THE FOLLOWING COUNTIES:

POLK
WEBSTER
GREENE
SCOTT

BOONE
GUTHRIE
DALLAS

EDWARD SWEENEY, INSPECTOR,
Des Moines, Iowa.

LETTER OF TRANSMITTAL.

HON. GEORGE W. CLARKE, GOVERNOR OF IOWA:

SIR: I have the honor to submit herewith my report as Mine Inspector for the Third Inspection District of Iowa, covering the beinnial period ending June 30, 1914.

Very respectfully submitted,

EDWARD SWEENEY,

Inspector Third District.

REPORT OF THE THIRD INSPECTION DISTRICT

The statistics herewith covering coal production in the State of Iowa, for the two years ending June 31st, 1914, does not show much of a change from former years. The annual production hangs close to the seven million mark. The coal deposits being of an irregular or pockety character, necessarily regulates in a large measure, the venture of capital in the business of operating our coal mines and of tonnage production to a limited scope, so that nature has fixed certain standards for the coal mining industry in Iowa. We nevertheless live in action equal to every requirement of the business of successful mining, so far as is possible with reasonable mining laws, and intelligent regulation. We strive for the protection of life and property in fairness to all parties concerned, but in spite of all laws and the best of precautionary rules, accidents will and do occur, and our vigilance is to minimize the mining accidents that we are unable to entirely prevent.

In a general way the coal trade conditions have been much depressed during the past eighteen months. There seems to be a sort of depression in all wage labor industries, and coal mining is no exception to the general rule.

The coal miners and coal operators have had a longer time in conference negotiations and efforts in the formulation of the regular wage scale this year, than is usual in the state of Iowa, notwithstanding the fact that the International officers succeeded in an early adjustment of the international basis for the new wage scale, our state forces "locked horns" in protracted discussion which for a time did threaten to bring on a conflict or strike in the Iowa Coal Mining Industry. Fortunately, the better judgment of both parties came into full play and happily arranged for a two years' wage agreement for the period ending March 31st, 1916.

ACCIDENTS.

In the 14th Biennial report and under the heading of "Accidents" I called attention to some of the causes and notably the one of carelessness of men at times in the presence of danger; the seeming indifference of men to learn and abide by safety rules in coal mining work. With a view to successfully establishing rules with the mining laws as authority therefor, we have formulated and printed rules, copies of which have been mailed to every coal mining company in the State of Iowa, with the request that such be posted in a conspicuous place for the attention of all parties concerned. We introduce herewith copies of such rules and regulations. (See rules and regulations following first pages of summary.)

GYPSUM MINES.

The Gypsum Mines are now covered by mine inspection requirements under our recent mining legislation, and the rules herewith will apply in a measure to Iowa Gypsum Mining as well as to our coal mines.

"SAFETY FIRST" is our motto.

I have made a careful inspection of the gypsum mines in this district, and made some recommendations for improvements involving the safety and health of the workmen, and I am glad to report that in each case the gypsum mine owners were agreeable to my recommendation, and the improvements urged were speedily to my every recommendation, and the improvements urged were speedily made.

EXPLOSIVES.

Much of the coal produced in Iowa is with the use of explosives, the same is true of our gypsum mining, in which explosives are used extensively. It has come to our notice that some miners are careless in their handling and using of explosives, hence we have provided some special rules with a view to safeguard conditions in this element of danger. We find that the manufacturers of explosives have special rules and make special effort to inform the buyers and users of explosives of the danger attaching to those goods, in fact, it is sought by those manufacturers to inform the general public along the same lines for safety. We invite and we expect to secure due co-operation from miners and mine owners in having the mining rules herein referred to observed, understood and complied with.

POLK COUNTY.

The production of coal in Polk County for the first half of the biennial period ending June 30th, 1913, was 1,464,300 tons. This was an increase in production over that of the year 1912 of 117,759 tons. During the first year of the biennial period there was an average of 2,595 persons given employment in and around the mines of Polk County.

For the second half of the biennial period which ended June 30th, 1914, the mines of Polk county produced 1,630,635 tons of coal, and gave employment in and around the mines to an average of 2,740 persons. The production of this year showed an increase over that of the preceding year of 166,335 tons, while the production for the entire biennial period showed an increase of 84,103 tons over that of the preceding biennial period.

This office does not collect statistics as to the amount of money paid to miners and other employees of each mine, however, the statistics show that nearly one-third of the employees in and around the mines are given employment at other work than the mining of coal proper. The miners of Polk county are paid more than a dollar per ton for all screened or lump coal produced, and probably it would be safe to say that at least *two million dollars* are paid the employees in and about the mines of Polk county each year. As the law requires that payment by mining companies shall be made the first Saturday after the 5th and 20th of each month, this would mean that more than seventy-five thousand dollars find their way into the pockets of the employees of the mines of this county each pay day or that more than one hundred and fifty thousand dollars per month is paid for this labor. The most of the money earned by the mine employees finds its way into trade channels in the city of Des Moines, and in this way the coal industry of Polk county is a big factor to the business interests of Des Moines.

Twenty-three mines are now in active operation in Polk county. Of this number now in operation, 14 mines do a coal shipping business, while 9 mines are operated for the local business of Des Moines and vicinity only. Of the 14 shipping mines, many of them also supply coal for the local trade of Des Moines. Probably no city of any considerable size in the state is so well favored in its fuel supply as is Des Moines. The very best of bituminous lump coal is laid down in the coal cellars all over the city at a

price of \$3.75 per ton. Some coal from other states is also shipped into Des Moines, but not a great deal of foreign coal is used here the people preferring to use Iowa coal, and especially at a lower price per ton.

The mines of Polk county are well equipped, sanitary and as for safety conditions comply in all respects with the state mining laws.

With the completion of the equipment of the work now being undertaken, six of the large mines of Polk county will be fully equipped with electrical hoists. A number of the mines in the county are now using electric and gasoline haulage, while machines for mining coal have been installed in a few mines in this county, and since a machine scale was adopted in the agreement between the miners and operators in April of this year, it is quite likely that more mining machines will be installed in the mines of this county soon.

Repeated analyses of coal from the mines of Polk county have shown that the coals of this county stand high in heat units, the coals of the county comparing favorably with the best bituminous coal produced in the United States. Some of the coals of this county have tested as high as 12,600 B. t. u. to the pound while the general average will probably be better than 11,000 B. t. u. to the pound of coal.

Coal from the mines of this county burn well and store better than other bituminous coals shipped into Des Moines from other states. Many persons who have been induced to use foreign coals shipped in here for house heating purposes, have returned to the use of Iowa coal and have found that they could heat their homes not only at a much less cost with Iowa coal, but that Iowa coal does not make any more smoke and dirt than the so called "smokeless coals" shipped in here and sold at higher prices.

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

POLK COUNTY

Name of Company	Superintendent	Postoffice Address	Shaft or Slope	Plan of Working	How Ventilated	Power Used	Shipping or Local
Norwood-White Coal Co., No. 4	J. D. Phillips	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Norwood-White Coal Co., No. 5	J. D. Phillips	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Eagle Coal Co., No. 1	E. A. Sayre	Des Moines	Shaft	Room and pillar	Fan	Steam	Local
South Des Moines Coal Co.	S. E. Wagner	Des Moines	Shaft	Room and pillar	Fan	Electricity	Shipping
American Coal Co.	P. B. Smith	Des Moines	Shaft	Room and pillar	Natural	Steam	Shipping
Wright Coal Co.	J. D. Owen	Des Moines	Shaft	Room and pillar	Fan	Steam	Electricity
Saylor Coal Co.	J. D. Owen	Des Moines	Shaft	Room and pillar	Fan	Steam	Electricity
Beck Coal Co.	Thos. Beck	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Kegonsa Coal Co.	George Heags	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Stranwood Coal Co.	Fred Norwood	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Madison Coal Co.	W. F. Moore	Des Moines	Shaft	Room and pillar	Fan	Steam	Local
Des Moines Coal Co.	Joel Norwood	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Maple Hill Coal Co.	John Pettit	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Enterprise Coal Co., No. 1	Wm. R. Gibson	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Enterprise Coal Co., No. 2	C. W. Carpenter	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Bloomfield Coal Co.	Geo. Yan	Des Moines	Shaft	Room and pillar	Fan	Electricity	Shipping

DALLAS COUNTY.

Prior to 1907 the coal tonnage produced by Dallas county never exceeded 40,000 tons in any one year. While a number of mines were in operation prior to this time, they were for the most part small mines operated only during the fall and winter months.

The old mine at Van Meter and the old mine at Dawson were the only shipping mines in the county prior to 1907. In that year extensive prospecting was done and a shaft was sunk by the Scandia Coal Company near Madrid. Former prospecting had been done at too shallow a depth. Coal was struck in the Scandia shaft at a depth of 170 feet. With the opening of the Scandia mine in Dallas county other companies began prospecting for coal with the result that the High Bridge Coal Company and the Phillips Coal Company have opened mines in the vicinity of Scandia. Later the Scandia Coal Company opened the second mine and recently the High Bridge Company have opened another mine, so at present these four mines are producing the bulk of the output of this county. The mine of the Dawson Coal Company is not running at present, but may be operated again soon.

Nearly all of Dallas county is underlaid by the lower coal bed measures (Des Moines formation) and extensive coal prospecting may result in other mines being opened in this county.

Prior to 1907 small mines operated near Madrid, Linden and Van Meter. These were of shallow depth and probably operated in an entirely different seam from that at Scandia. It is hoped that prospecting will be continued in the county and the coal measures fully developed.

For the biennial period ending with June 30, 1914, the coal production of Dallas county amounted to 986,722 tons. This was a gain of nearly 300,000 tons over the preceding biennial period. Had not the High Bridge mine been shut down on account of labor troubles during two of the best months of the year, there would have been a greater gain in production.

Fatal and non-fatal accidents occurring in the mines of this county are listed elsewhere.

BOONE COUNTY.

Boone county is surrounded on all sides by coal counties and at one time was one of the leading counties producing coal in this state. Boone county was one of the first counties to assume prominence in the coal industry and mining has gone on steadily in the county for more than a third of a century. In the central part of the county where coal has been taken out for the greatest length of time, two principal seams have been opened up. In the southwestern part of the county around Angus several veins are known to exist.

The coal measures of Boone county extend north and south across the entire county, along the Des Moines river. The principal mining, however, is done in the vicinity of Fraser, Boonesboro and Odgen, in the north and central portions of the county. Some small mines have operated in the southern part of the county, but little mining is done there now. Formerly there was a great deal of coal mined in the vicinity of Angus, and while the vein there averages from four to six feet in thickness, there is usually a large volume of sand and water overlying a thin strata of slate, making a bad roof, and the coal cannot be mined at a profit. Some coal has been mined near Moingona but there are no active operations there at this time.

A few years ago considerable prospecting was done in the search for coal horizons at a greater depth than had formerly been attempted and a new coal field was opened up near Ogden. The coal runs from three to five feet in thickness and is found at a depth of 270 feet. The Ogden Consolidation Coal Company are now operating two mines north of Ogden. The coal is of excellent quality containing but little ash. Mining machines are being used in the mines here.

No new operations have been commenced in this county during this biennial period.

The most of the coal of this county is mined on the longwall system of mining and but few accidents have occurred in the mines of Boone County during the biennial period.

For the biennial period ending June 30th, 1914, Boone County produced 437,713 tons of coal, and in the production of this coal about 1,700 men were given employment in and around the mines of the county.

LIST OF COMPANIES, SUPERINTENDENTS, ETC., IN THIRD DISTRICT—CONTINUED.
WEBSTER COUNTY

Name of Company	Superintendent	Postoffice Address	Shaft or Slope	Plan of Working	How Ventilated	Power Used	Shipping or Local
Butler Coal Co., No. 1	Ford Butler	Coalville	Shaft	Long wall	Fan	Steam	Local
Butler Coal Co., No. 2	Ford Butler	Coalville	Shaft	Long wall	Fan	Steam	Local
Craig & Dawson Coal Co., No. 1	J. L. Craig	Kalo	Shaft	Long wall	Fan	Steam	Shipping
Craig & Dawson Coal Co., No. 2	J. L. Craig	Kalo	Shaft	Long wall	Fan	Steam	Shipping
Western Coal & Milling Co.	John Forbes	Coalville	Shaft	Long wall	Fan	Steam	Shipping

BOONE COUNTY							
Name of Company	Superintendent	Postoffice Address	Shaft or Slope	Plan of Working	How Ventilated	Power Used	Shipping or Local
Sully & Hays Coal Co., No. 1	Robert Hays	Boonshoro	Shaft	Long wall	Fan	Steam	Shipping
Sully & Hays Coal Co., No. 2	Robert Hays	Boonshoro	Shaft	Long wall	Fan	Steam	Shipping
W. D. Johnson Coal Co., No. 1	H. H. Garfield	Boonshoro	Shaft	Long wall	Fan	Steam	Shipping
W. D. Johnson Coal Co., No. 2	H. H. Garfield	Boonshoro	Shaft	Long wall	Fan	Steam	Shipping
Ogden Consolidated Coal Co., No. 1	Jacob Ritter	Ogden	Shaft	Long wall	Fan	Steam	Shipping
Ogden Consolidated Coal Co., No. 2	Jacob Ritter	Ogden	Shaft	Long wall	Fan	Steam	Shipping
Ogden Consolidated Coal Co., No. 3	Jacob Ritter	Ogden	Shaft	Long wall	Fan	Steam	Shipping
Ogden Consolidated Coal Co., No. 4	Jacob Ritter	Ogden	Shaft	Room and pillar	Fan	Steam	Shipping

WEBSTER COUNTY.

Webster County lies farthest north of the coal producing counties in Iowa. Coal was first mined in this county as early as 1860, so the mining of coal in this country has been continuous for a period of more than fifty years. The most of the coal mined has come from the vicinity of the Des Moines river south of Fort Dodge, and near the towns of Coalville, Lehigh, Kalo and Otho. Not a great deal of coal is mined in the county at the present time. Ten years ago the production of coal in the county was more than double what it is today.

Along the banks of the Des Moines river are exposed coal measures at various points and this would seem to indicate that there is yet a large acreage of undeveloped coal in the county.

The seam of coal found in this county varies from two and one-half to four feet in thickness, and in some places a greater thickness has been found. The quality is uniformly good, and the market facilities of the product now mined good, owing to the county being in the northern limit of the Iowa coal field.

Webster County has the distinction of being the only county in Iowa producing any cannel coal. This is found in the vicinity of Kalo and an analysis of coal from this section a few years ago shows it to have 39.04 per cent of Volatile matter, 39.22 per cent of Fixed Carbon, and 15.87 per cent Ash, giving it a fuel ratio just below one, or on the borderland between cannel and bituminous coals.

Webster is also the only county in the state producing commercial gypsum in paying quantities. A number of gypsum mines are now in operation in the vicinity of Fort Dodge and the business is quite extensive.

For the biennial period ending June 30th, 1914, this county produced 88,169 tons of coal. About two hundred men were employed in and around the mines of the county. But few accidents were reported from this county.

GUTHRIE COUNTY.

The coal industry of Guthrie County has not been carried on to any great extent, mining operations being conducted only during the fall and winter months and chiefly to supply the local trade.

Nothing new in coal development work has taken place since the last report issued from this office. The coal measures in this county are found at a depth of about 150 feet. The vein of coal mined is not thick but the coal is of excellent quality and a free burner. Most of the mining done is conducted on the longwall system of mining and as no powder is used but few accidents occur in the industry in this county.

The mines of Guthrie County are not large. They employ usually from 5 to 20 men during the fall and winter months, mining generally beginning the latter part of August and ending about April first. No facilities are provided for storing coal at these mines and the coal is mined only as the demand for same exists. But few of these small mines are equipped with fan ventilation and the hoisting power at these mines usually consists of horse and gin.

There are at the present time less than one dozen mines in operation in this county. The mining operations are chiefly carried on in the vicinity of Fanslers, Panora and Bayard, and also along the Middle River near Stuart. Also some in both the northeast and southwest corners of the county.

The coal production of Guthrie County for the biennial period ending June 30th, 1914, amounted to 17,226 tons of coal. About 75 men were given employment in the mines during that period.

GREENE COUNTY.

The output of coal from Greene County has not been large for some years. Up to the present time workable seams of coal have only been opened in the eastern part of the county. For a number of years a seam of coal averaging some 18 inches in thickness was mined in Grand Junction. Underneath this vein of coal was an excellent bed of fireclay, and it was chiefly on this account that the coal was mined. This clay was used for a number of years in the manufacture of brick and tile. Owing to water and other difficulties the mine was abandoned some time ago.

A number of small coal mines have been in operation for some years near Rippey. These have operated only during the fall and winter to supply coal to the local trade. The quality of coal mined here is good. Some mining has also been done near the town of Angus. Near this place at one time there were nearly a dozen mines operating, but of recent years but little has been done.

Probably less than one hundred men are now engaged in the coal industry of Greene County.

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

GUTHRIE COUNTY

Name of Company	Superintendent	Post-office Address	Shaft or Slope	Plan of Working	How Ventilated	Power Used	Shipping or Local
Clippert Coal Co.	Wm. Merchant	Baylor	Shaft	Long wall	Purman	Horse	Local
W. N. Thomas Coal Co., No. 1	W. N. Thomas	Stuart	Shaft	Long wall	Natural	Horse	Local
Scott Coal Co.	W. H. Scott	Guthrie	Shaft	Long wall	Natural	Horse	Local
Mansell Coal Co.	John Mansell	Guthrie	Shaft	Long wall	Fan	Horse	Local
W. B. Coe	W. B. Coe	R. F. D.	Shaft	Long wall	Fan	Horse	Local
Sipe & Hughes, No. 1	J. D. Sipe	Guthrie	Shaft	Long wall	Purman	Horse	Local
J. J. Clark	J. J. Clark	Yale	Shaft	Long wall	Natural	Horse	Local
Baylor Coal Co.	J. G. Baylor	Guthrie	Shaft	Long wall	Natural	Horse	Local
O. E. Coal Co.	John Marshall	R. F. D.	Shaft	Long wall	Natural	Horse	Local
Cahill Coal Co.	Joe Cahill	Panora	Shaft	Long wall	Natural	Horse	Local
Stuart		Stuart	Shaft	Long wall	Natural	Horse	Local

GREENE COUNTY

Rocky Coal Co.	Michael Futh	Rippey	Shaft	Room and pillar	Natural	Horse	Local
Rocky Coal Co.	Michael Futh	Rippey	Shaft	Room and pillar	Natural	Horse	Local
Kepstone Coal Co.	James Bennett	Rippey	Shaft	Long wall	Purman	Horse	Local
Willow Grove Coal Co.	H. A. McElaney	Angus	Shaft	Long wall	Fan	Steam	Local

SCOTT COUNTY.

Mining operations have been carried on in Scott county for nearly half a century, and yet at no time in the history of the county has the yearly production of coal been large. This is because the coal lies in swamps or pockets and the seams are not extensive enough to cause large mining operations to be carried on. The largest tonnage produced by this county in any one year since 1900 was mined in 1902 when the production reached 28,973 tons.

Scott county has no railroad mines and but few men are employed in the mines of the county. Small mining operations are carried on near Jamestown and Buffalo. Each year mines are abandoned and others opened to take their places, but there is a noticeable decrease in the production from year to year. The seam of coal worked by the Jamestown mines was in the form of a trough being about two hundred yards wide and two miles long. In the center of this trough the coal was from 4 to 6 feet thick, thinning towards the edges. The seam near Buffalo is said to be four feet thick in places in some of the pockets or swamps where coal is found.

Scott county is the only county in the central part of the state east of Jasper county in which coal is mined.

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

DALLAS COUNTY

Name of Company	Superintendent	Postoffice Address	Shaft or Slide	Plan of Working	How Ventilated	Power Used	Shipping or Local
High Bridge Coal Co., No. 1.....	John Lindbloom	Madrid	Shaft.....	Room and pillar.....	Fan.....	Steam	Shipping
High Bridge Coal Co., No. 2.....	H. Fried	Madrid	Shaft.....	Room and pillar.....	Fan.....	Steam	Shipping
Scandia Coal Co., No. 1.....	H. Zook	Madrid	Shaft.....	Room and pillar.....	Fan.....	Steam	Shipping
Scandia Coal Co., No. 2.....	H. Zook	Madrid	Shaft.....	Room and pillar.....	Fan.....	Steam	Shipping
Phillips Coal Co., No. 10.....	Wallace Cooney	Woodward	Shaft.....	Room and pillar.....	Fan.....	Steam	Shipping
Dawson Coal Co., No. 2.....	T. C. Thorpe.....	Dawson	Shaft.....	Room and pillar.....	Fan.....	Steam	Shipping

SCOTT COUNTY

Backeager Coal Co.....	Jan. Backeager	Buffalo	Shaft.....	Room and pillar.....	Grate.....	Steam	Local
Carl Henning Coal Co.....	Carl Henning	Davenport	Shaft.....	Room and pillar.....	Grate.....	Horse	Local
David Thomas Coal Co.....	David Thomas	Davenport	Shaft.....	Room and pillar.....	Grate.....	Horse	Local

FATAL

FATAL ACCIDENTS IN DISTRICT NO. 3.

Date	Name of Deceased	Employer or mine where accident occurred	Age	Occupation
1913				
September 10.	Alfred Harvey	Smiley & Heaps Coal Co.	24	Driver
October 3.	M. Cassia	Des Moines Coal Co.	Miner	
November 22.	J. J. Zook	Ogden Cons. Coal Co.	40	Miner
1913				
February 24.	Joe Brasia	Saylor Coal Co.	55	Miner
June 4.	Robt. Adamson	Scandia Coal Co.	49	Miner
September 23.	Sam Daniels	Scandia Coal Co.	33	Miner
October 16.	Fred Stirling	Keystone Coal Co.	61	Miner
October 23.	John Henry Loftus	So. Des Moines Coal Co.	35	Miner
November 1.	Jno. Bertigiani	So. Des Moines Coal Co.	21	Miner
December 15.	Angelo Magino	Gibson Coal Co.	23	Miner
December 27.	Frank Clarich	Scandia Coal Co.	20	Miner
1914				
March 6.	Walter Rose	Saylor Coal Co.	32	Miner
March 14.	Oscar Thoren	Norwood-White Coal Co.	19	Miner
April 30.	Sandro Donati	Gibson Coal Co.	34	Miner
May 15.	W. Carty	Norwood-White Coal Co.	27	Miner
June 20.	John Holmes	Bloomfield Coal Co.	30	Company Man.
June 20.	John Nichols	Phillips Coal Co.	60	Stable Boss

*Family. *Seven step-children. *Son.

ACCIDENTS.

FOR THE TWO YEARS ENDING JUNE 30th, 1914.

Married or single	Wife	No. of children	Nationality	Cause of accident	Time of accident	County
Single .....	.....	.....	American ..	Fall of roof	1:00 P. M.	Boone
Married ..	Wife. 8	.....	Italian	Fall of slate	3:30 P. M.	Polk
Married ..	Wife. 3	.....	Russian	Fall of coal	1:15 P. M.	Boone
Married ..	Wife. 1	.....	Italian	Fall of slate	11:15 A. M.	Polk
Married ..	Wife. 1	.....	English	Fall of slate	11:00 A. M.	Dallas
Married ..	Wife. 6	.....	English	Fall of slate	8:15 A. M.	Dallas
Single .....	.....	.....	American ..	Fall of slate	8:15 A. M.	Polk
Single	Wife. 6	.....	American ..	Fall under cap	8:30 A. M.	Polk
Single .....	.....	.....	Italian	Fall of slate	3:30 P. M.	Polk
Married ..	Wife. 1	.....	Italian	Fall of slate	1:30 P. M.	Polk
Single .....	.....	.....	Austrian	Fall of slate	8:30 A. M.	Dallas
Married ..	Wife. 1	.....	American ..	Fall of slate	8:30 A. M.	Polk
Single .....	.....	.....	American ..	Fall of slate	3:30 A. M.	Polk
Single .....	.....	.....	Italian	Fall down shaft	3:30 A. M.	Polk
Single .....	.....	.....	Italian	Fall of slate	10:00 A. M.	Polk
Single .....	.....	.....	American ..	Fall of slate	1:00 A. M.	Polk
Married ..	Wife. 6	.....	American ..	Struck by cage	2:25 P. M.	Dallas

REPORT OF NON-FATAL ACCIDENTS IN DISTRICT NO. 3. FROM JULY 1, 1912, TO JUNE 30, 1914—CONTINUED.

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SEVENTEENTH ANNUAL REPORT OF THE

STATE MINE INSPECTORS.

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Date	Name	Occupation	Cause of Accident	Character of Injury	Employed by	County
Aug. 15	Guido Cavaglia	Miner	Fall of slate	Leg injured	Saylor Coal Co.	Polk
Aug. 18	L. Walden	Driver	Caught by ear	Collar bone broken	Wright Coal Co.	Polk
Aug. 19	John Ford	Driver	Kicked by mule	Leg broken	Ogden Cons. Coal Co.	Boone
Aug. 19	Mason Pugh	Driver	Kicked by mule	Arm broken	Ogden Cons. Coal Co.	Boone
Aug. 20	Angelo Stefany	Driver	Caught by ear	Leg broken	Enterprise Coal Co.	Polk
Sept. 23	Matt Brodski	Miner	Bruiised about hips	Bruiised about hips	Saylor Coal Co.	Polk
Sept. 23	Everet Devan	Driver	Fall of coal	Ankle dislocated	Swanwood Coal Co.	Polk
Sept. 24	Otto Bollen	Miner	Fall of slate	Broken nose and jaw bone	Saylor Coal Co.	Polk
Sept. 25	Robt. Davis	Miner	Fall of slate	Broken ribs	Saylor Coal Co.	Dallas
Oct. 16	Joe Bradford	Miner	Fall of slate	Leg broken	Phillips Coal Co.	Polk
Oct. 23	Jack Glenn	Driver	Caught by ears	Mashed hands	Madison Coal Co.	Polk
Oct. 25	Joe Ramatti	Driver	Caught by ear	Foot badly mashed	Scandia Coal Co.	Dallas
Oct. 30	J. Bendokis	Miner	Fall of slate	Face cut, ribs broken	Des Moines Coal Co.	Polk
Nov. 17	Phil Claborn, Sr.	Brattice man	Fall of slate	Hip dislocated	Enterprise Coal Co.	Polk
Dec. 11	Archie Beck	Mach. runner	Caught by machine	Leg broken	Beck Coal Co.	Polk
Dec. 15	Wm. McAlpine	Miner	Fall of slate	Leg broken	Ogden Cons. Coal Co.	Boone
Dec. 29	Clarence Williams	Miner	Fall of slate	Hips bruiised	Economy Coal Co.	Polk
1914						
Jan. 2	Isaac Owens	Miner	Caught in trap door	Leg broken	Saylor Coal Co.	Polk
Jan. 5	A. L. Lyod	Miner	Fall of slate	Cut about face	South Des Moines Coal Co.	Polk
Jan. 6	Ed. Akers	Miner	Fall of coal	Back and legs injured	American Coal Co.	Polk
Jan. 7	E. S. Palmer	Miner	Fall of slate	Ribs broken, ankle broken	Norwood-White Coal Co.	Polk
Jan. 12	Thos. Ford	Miner	Fall of slate	Leg broken	South Des Moines Coal Co.	Polk
Jan. 26	Jno. Sorocimo	Coupler	Caught by ear	Finger torn off	Maple Block Coal Co.	Polk
Feb. 2	Harmon Davis	Driftman	Fall of slate	Two ribs broken	Scandia Coal Co.	Dallas
Feb. 11	Lacy Goodrich	Miner	Fall of roof	Injured spine	Enterprise Coal Co.	Polk
Feb. 11	Ben Bristow	Miner	Fall of slate	Leg broken	Enterprise Coal Co.	Polk
Feb. 15	Joe Richardson	Miner	Fall of slate	Pick thrust in right arm	Maple Block Coal Co.	Polk
Feb. 25	Willard Barrachman	Motorman	Thrown off motor	Left arm crushed	Enterprise Coal Co.	Polk
Feb. 26	Chas. Siström	Miner	Fall of coal	Leg broken	Boone Block Coal Co.	Boone
Mar. 7	John Balmou	Driver	Caught by ear	Bones of foot broken	Smiley & Heaps Coal Co.	Boone
Mar. 4	Harry Theobald	Miner	Caught by ear	Foot crushed	Scandia Coal Co.	Dallas
Mar. 8	O. Wallace	Miner	Fall of slate	Bruiised back and legs	Ray Coal Co.	Polk
Mar. 11	Tony Belindo	Miner	Fall of slate	Bruiised hand	Norwood-White Coal Co.	Polk
Mar. 15	Dave Lawton	Miner	Fall of coal	Collar bone broken	Ogden Cons. Coal Co.	Boone
Mar. 14	Henry Cratty	Miner	Caught by ear	Foot mashed	Economy Coal Co.	Polk
Mar. 15	Matt Anderson	Driver	Squeezed by mule	Two ribs broken	South Des Moines Coal Co.	Polk
Mar. 21	Steve Bohn	Driver	Caught by ear	Shoulder dislocated	Phillips Coal Co.	Dallas
April 2	Wm. Staples	Miner	Caught by ear	Leg broken	Eagle Coal Co.	Polk
April 13	A. O. Hays	Driver	Caught by ear	Sprained ankle and bruiised	Phillips Coal Co.	Polk
April 16	Lee Cranshaw	Miner	Caught by ear	Leg broken	Wright Coal Co.	Dallas
April 21	Edward Long	Miner	Fall of slate	Fractured hip	Swanwood Coal Co.	Polk
May 18	Elmer Lafe	Trapper	Caught by ear	Leg broken	Swanwood Coal Co.	Polk
May 19	Herman Fisher	Miner	Fall of slate	Badly bruiised	Phillips Coal Co.	Dallas
June 2	Geo. Jarvis	Miner	Fall of slate	Leg broken	Phillips Coal Co.	Dallas
June 8	Frank Bodgini	Miner	Fall of roof	One eye knocked out	Wright Coal Co.	Polk
June 12	Walden	Miner	Fall of slate	Three ribs broken	Wright Coal Co.	Polk
June 29	Gus Nobens	Timberman	Fall of slate	Two ribs broken	Ogden Cons. Coal Co.	Polk
June 18	Robt. Price	Miner	Fall of slate	Leg broken	Bonfield Coal Co.	Polk
June 12	Peter Rudebeck	Miner	Fall of slate	Leg broken	Bennett Bros. Coal Co.	Polk

TABLE NO. 1.

SHOWING NUMBER OF MINES, OUTPUT OF COAL, NUMBER OF MINERS AND OTHER EMPLOYEES IN DISTRICT NO. 3, FOR YEAR ENDING JUNE 30, 1913.

County	No. of mines	Amount of coal of all kinds produced	No. of miners employed	No. of other inside employees	No. of outside employees	Total No. of employees
Polk	55	1,664,300	1,854	555	236	2,595
Dallas	6	511,211	625	215	74	914
Boone	10	719,482	269	160	56	865
Webster	6	30,800	59	24	35	118
Guthrie	8	9,467	22	1	8	31
Greene	3	8,500	26	5	5	36
Scott	1	500	5	1	1	7
Total	98	2,964,300	2,948	990	395	4,551

TABLE NO. 2.

SHOWING NUMBER OF MINES, OUTPUT OF COAL, NUMBER OF MINERS AND OTHER EMPLOYEES IN DISTRICT NO. 3, FOR YEAR ENDING JUNE 30, 1913.

County	No. of mines	Amount of coal of all kinds produced	No. of miners employed	No. of other inside employees	No. of outside employees	Total No. of employees
Polk	55	1,629,635	1,922	559	249	2,749
Dallas	6	475,511	578	219	66	863
Boone	10	719,231	321	160	64	745
Webster	6	37,369	51	22	11	114
Guthrie	8	7,739	44	1	6	51
Greene	3	7,770	22	5	4	31
Scott	1	700	5	1	1	7
Total	98	2,977,975	2,982	996	402	4,551

TABLE NO. 3.

SHOWING THE OUTPUT OF THE COAL PRODUCING COUNTIES OF DISTRICT NO. 3, FOR THE PAST SEVEN YEARS.

Counties	1908	1909	1910	1911	1912	1913	1914
Polk	1,358,097	1,647,136	1,736,692	1,663,291	1,345,541	1,464,300	1,520,635
Boone	218,491	271,994	247,465	241,138	253,015	219,482	218,231
Jasper	467,532	535,340	534,186				
Webster	20,031	69,487	48,066	44,708	44,279	50,800	37,369
Greene	22,226	13,540	15,700	10,128	11,800	8,500	7,770
Guthrie	13,143	14,368	9,855	8,299	10,871	9,467	7,739
Dallas	138,779	305,700	240,054	266,497	282,540	511,211	455,511
Scott	2,700	2,900	2,600	2,600	2,600	500	700
Total	2,949,900	2,546,245	2,635,602	2,237,621	2,044,087	2,364,260	2,377,975

*Jasper county now in Second Inspection District.

TABLE NO. 4.

SHOWING TONNAGE IN DISTRICT NO. 3, FOR THE PAST FOURTEEN YEARS, WITH NUMBER OF FATAL ACCIDENTS AND NUMBER OF EMPLOYEES, WITH TONS MINED PER ACCIDENT, ETC.

Year	No. of fatal accidents	Tons of coal mined this year	No. of employees	Tons of coal mined per accident	No. of employees per accident
1901	7	1,507,690	3,904	229,670	558
1902	13	1,659,192	3,878	127,196	298
1903	5	1,835,496	3,691	367,091	738
1904	10	1,846,396	4,389	184,639	499
1905	11	2,010,101	5,390	182,736	486
1906	8	2,049,842	5,566	256,042	695
1907	14	2,236,097	5,340	159,721	388
1908	14	2,249,990	5,664	160,715	404
1909	11	2,546,245	6,514	231,476	562
1910	16	2,635,602	6,523	164,725	407
1911	14	2,237,621	4,798	161,258	342
1912	8	2,044,087	4,759	255,511	593
1913	5	2,364,260	4,550	472,852	912
1914	12	2,377,975	4,551	198,164	523

SUMMARY

Of the Mine Inspectors' Reports for the Two Years
Ending June 30, 1914.

THE COAL INDUSTRY OF IOWA—A SUMMARY.

Coal has been mined in Iowa since 1840, the first coal being mined several years prior to Iowa becoming a state. During the first several years that coal was produced the output was small and was mined only for domestic use. Later with the growth in population and the advent of the railroads in the state, the production increased each year and considerable coal was shipped to the north and west.

For a number of years Iowa was the second largest coal producing state west of the Mississippi River. While but 400 tons of coal was mined in 1840, the production had reached 1,231,547 tons in 1857; 3,920,000 tons in 1882, and in 1900 the output had increased to more than five million tons. Since that time the tonnage has increased until now more than seven million tons of coal are mined annually in the state.

Coal is now mined in twenty-three counties in Iowa, and with the increased production has come an increase in the number of employes in the mines until now something like 17,000 men are given employment in the coal mines of the state. Probably between 80,000 and 100,000 people, the families of employers and employes are dependent upon the coal industry of Iowa for their living. Millions of dollars of capital are invested in the mining industry of the state, and on this capital invested taxes are paid for the general maintenance of the business of the state. A conservative estimate placed upon the value of the coal mined in Iowa each year would not be far from twenty-five million dollars.

The State Geological Department is authority for the statement that the Iowa coal field contains about 19,000 square miles, possibly two-thirds of which in time may become productive. These figures do not take into consideration that portion of the most productive formation, the lower Pennsylvania (Des Moines) which is covered by the Cretaceous, and the upper Pennsylvania (Missouri) which will certainly become in part productive.

Mr. Campbell of the United States Geological Survey estimates the original coal supply of Iowa at 29,160,000,000 tons. Subtracting the 192,612,952 tons mined from 1840 to June 30, 1914, from the original supply, we still have left about 4,000 times the pro-

duction of 1914. If the present ratio of a half a ton lost for every ton marketed continues, the supply will last more than 2,500 years at the present rate of production of about 7,000,000 tons per year.

The trend of the Iowa coal field is along the Des Moines river, coal being found from Webster County in the north central part to Van Buren County in the southeast part of the state. There are, however, two exceptions to this general trend of the Iowa coal field. For a number of years mining operations have been carried on in a small way in mining a basin of coal found near Buffalo in Scott County. This small field is widely separated from the general coal field in Iowa. The area is limited and is mostly mined out at the present time. The coal is of good quality and in some places the vein is more than four feet in thickness. Also in Adams, Page and Taylor counties is found a thin vein of mining coal that is not connected in any way with the general coal field of the state. The vein here, however, is thin, running from fourteen to twenty-two inches in thickness. A number of small operations in mining are conducted during the fall and winter in these counties, but the production is not large.

In Appanoose County what is known as the Mystic seam of coal appears to be present under the entire western half of the county, and the adjoining portions of Wayne County on the west and Missouri on the south. This seam is persistent over the western and southern parts of the county. In spite of the millions of tons of coal which have been taken from the Appanoose formation, only a narrow strip on each side of portions of the lines of railways has been mined. Great quantities of coal still remain unmined in the Mystic seam.

The Mystic seam averages about two and one-half feet in thickness, but is very valuable on account of its easy accessibility, regularity, quality and extent. On this account the future will see greater operations in the coal industry in this seam than is now carried on. The coal found in this field differs somewhat from that in the general trend of the Iowa coal field, in that the Mystic seam is what is termed a block coal.

There are some three or four veins of coal found in the general coal field, along the Des Moines river and its tributary, the Racoon river, but none of these veins are continuous for any great distance, the coal rather being found in pockets, thickest in the center of the pocket and thinning towards the edge. While the

general trend of the main coal field is northwest and southeast yet in the coal pockets themselves the trend may be just the opposite, or northeast and southwest. Sometimes in one vein of coal the general direction or trend may be one way, and in the next vein lower down the trend may be in the opposite direction. This is true of the Norwood-White mines operating in Polk County Number 4 operating in the lower vein has a trend northeast and southwest, while in Number 5 which is operating directly in the seam above, the trend of the seam is just the opposite to that in Number 4.

Monroe County is the first county in the state in point of coal production. About twenty large mines are in operation in this county, and the output for the year ending June 30, 1914, amounted to 2,410,369 tons.

Polk County is the second largest coal producing county in the state. Twenty-seven mines are now in operation in this county; 1,630,635 tons of coal were mined in this county during the fiscal year ending June 30, 1914.

The quality of the coal produced in Iowa will compare favorably with that of the best bituminous coal produced in the United States.

Coal is purchased for the use of the State Institutions on bids, the analysis of the coals being considered and the awards made to the mines furnishing the greatest number of British Thermal Units for one cent. The Iowa mines are now furnishing coal for use in about two-thirds of the institutions in Iowa. Probably the amount of coal consumed at the Iowa State Institutions would approximate 150,000 tons per year. The railroads of Iowa are also large users of Iowa coal. Much Iowa coal is also used in the large cement plants and in the brick and tile plants of the state.

The coal produced in Iowa is what is known as bituminous or soft coal. We use the expression "soft coal" to distinguish bituminous from anthracite which is termed "hard coal," the most of which comes from Pennsylvania and West Virginia. Some bituminous coals are harder than others, indeed some are quite hard to break. The coal produced in Iowa is hard enough to store well, and for this reason is a splendid furnace coal. The term block coal is often used when speaking of the coal which comes from the Mystic seam because when breaking it breaks up into cubes or blocks. All this coal, however, is bituminous coal.

A small amount of what is termed "cannel coal" is produced in Webster County.

The thickness of the individual coal beds in this state are not great, the larger part of the mining of the state being in beds from four to six feet in thickness. Individual beds running as much as eleven feet or more in thickness have been found but they do not extend over any great area.

Summing up the Iowa coal industry we find that coal is produced in twenty-three counties in the state, that almost three hundred mines are in operation, and that there is produced annually more than seven million tons of coal. We also find that in the production of this coal there are on an average more than fifteen thousand men employed in and around the mines, that from eighty to one hundred thousand people are dependent on the industry, and that more than fifteen million dollars are paid to the employees of the mines of this state annually. It has been estimated that the value of the coal industry to this state would approximate more than twenty-five million dollars a year.

SUMMARY OF THE MINE INSPECTORS' REPORTS FOR THE TWO YEARS ENDING JUNE 30, 1914.

Notwithstanding the decrease in the production of coal for the year ending June 30, 1914, the total production for this biennial period ending June 30, 1914, has been the largest of any biennial period in the history of the coal industry of Iowa.

In the twenty-three coal producing counties of the state there were 7,415,757 tons of coal produced, and an average of 15,685 men employed in and around the mines in the year ending June 30, 1913, and 7,312,734 tons of coal produced and an average of 15,740 men employed in and around the mines in the year ending June 30, 1914.

Comparing this biennial period with the one ending June 30, 1912, it shows an increase in the production of 177,989 tons, and a decrease in the average number of men employed in and around the mines of 840.

There are at present 262 coal mines in operation in the coal producing counties of this state. This is an increase of ten mines over the biennial period ending June 30, 1912.

WORKING CONDITIONS.

In the making of the last working agreement between operators and miners District 13, U. M. W. of A., a very commendable feature was adopted, that of the miners continuing at work while negotiations were under way. In former years it was customary to close the mines while the agreement was being made. This was detrimental to all parties by causing losses to the miners in wages, and losses to the companies in destruction of property, caused by falls during the idle period of such proportions at times as to compel certain portions of the mines to be abandoned rather than finance the removal of said falls.

Another cause of loss to the Iowa operator was that when Illinois completed her working agreement before Iowa, foreign operators took advantage of the situation and came into Iowa soliciting orders for contracts, and in many cases Iowa lost opportunities of contracts, not because of inferiority of product, nor because of price, but by not being ready at the time the contracts were made. In order to successfully combat the foreign coals that are displacing Iowa coal in this state, two things are absolutely essential, namely: 1st. The Iowa operator must produce clean coal, and this means that it must be so clean that there will be no margin of reflection in its comparison with other coal. 2nd. It must be screened, sized and prepared the same as is done in other states to successfully compete with them. These are undisputed facts and must be so met and considered. Iowa coal has proven itself by analyses superior to much foreign coal; the advantage of such coal not being in quality, but in the preparation of it.

Another important improvement that was introduced into the agreement between the operators and miners was a scale for machine mining of coal. This undoubtedly is a step in the right direction, for two specific reasons. Coal that is mined by machinery before it is shot down will of necessity make a better grade of coal than that which is shot off the solid, because not over one-half as much explosive will be required to give the same result. Another reason is that coal that is covered by a tender roof making operations by shooting off the solid almost impossible, could be worked with a much larger degree of safety and success, and thus give constant employment to the miners instead of them being idle a large proportion of the time as at present owing to shortage of places on account of the above mentioned conditions.

The use of machines would also have a tendency to reduce the number of both fatal and non-fatal accidents, 60% of which occur at or near the working face, because the roof would not be so shattered as with solid shooting. Before condemning or antagonizing the machines a fair and impartial trial should be given and if found to give the above results they should be universally supported and adopted wherever practicable.

Following this summary will be found appended rules for the government of shot examiners and shot firers in mines of Iowa. These rules are issued in triplicate in the form of Shot Examiners Certificate, one copy to the party showing qualifications to act as Shot Examiner, one copy to the coal company employing this party as a shot examiner, and the third to be retained by the State Mine Inspector of the district in which the shot examiner is employed. These rules have also been printed in large type and posted in a conspicuous place at all the mines in the state.

Attention is also directed to a copy of letter to all coal companies in the state regarding the use of acetylene lights in the mines of this state, and issuing rules governing the use of oil lamps.

The tables following this summary give the coal producing counties of the state, the number of mines in each county, the coal output of each county, the number of persons employed in the coal mining industry of the state, number of persons injured and killed in and around the mines of the state, and other information relative to the coal industry for the two years ending with June 30, 1914.

....., Iowa.

Gentlemen:

This is to certify that....., is, to the best of my knowledge, qualified to act as Shot Examiner, or Shot Firer, and does affirm in my presence that he will faithfully comply and impartially perform the duties of Shot Examiner, or Shot Firer, as prescribed by Section 47 and 2495b of the state mining laws of Iowa, and will also strictly observe and enforce the following rules:

Rule 1. To prohibit the charging and firing of all shots that are "drilled into the solid".

Rule 2. To prohibit the charging and firing of a shot following another shot, and depending on the success of the first shot; unless the dependent shot cannot be fired until the first shot is known to have done its work properly.

(The above includes all sumperm.)

Rule 3. To prohibit the charging and firing of any shot that has blown out the tamping, or any shot that is placed too near old holes, cracks, or fissures made by previous shots.

Rule 4. To prohibit the charging and firing of more than three coal shots in opened rooms or pillars, or more than two coal shots in entries or rooms turning. Provided further, that when making break-throughs in entries, the men only be allowed one extra coal shot or a total of three coal shots in entry and break-through.

Rule 5. To not knowingly approve or fire any shot that is charged with mixed explosives of any kind.

Rule 6. To not knowingly approve or fire any shot that is not firmly, and sufficiently tamped with lawful tamping.

Rule 7. To prohibit the charging and firing of shots in those parts of the mine where sections 34 and 35 of the state mining laws of Iowa are not faithfully observed.

Rule 8. To observe the time (to be mutually agreed upon hereafter) to commence the firing of shots in the mine where I am employed as a shot firer, which in no case shall commence until every person (except the shot firers) is out of the mine.

Rule 9. To devote ample time to the examining of shots and their surroundings. To make sure that conditions in the firing zone are reasonably safe to light shots, and to light shots no faster than safe practice will permit.

Rule 10. To prohibit the charging and firing of any shot where explosives are stored or kept in the mine, either by the operator or miner, in violation of Section 2, Chapter 130, of the state mining laws of Iowa.

Therefore, he has my permission to act as Shot Examiner or Shot Firer in your Mine No....., but should he violate any of the above provisions then it shall constitute grounds for the revocation of his certificate, and the penalties provided in Section 2491 of the state mining laws of Iowa.

State Mine Inspector District No.....

I,, do solemnly affirm that I will faithfully comply and impartially perform the duties of Shot Examiner or Shot Firer in mine No..... of the..... as prescribed by Sections 47 and 2495b of the state mining laws of Iowa, and that I will also strictly observe and enforce the above rules.

Signed (In triplicate)

Date, 191....

Des Moines, Iowa, September 3, 1913.

To the Iowa Operators of Coal and Gypsum Mines.

Gentlemen: It is the opinion of the State Mine Inspectors' Department that the conditions of the ventilation of the Iowa mines, especially in regard to noxious and poisonous gases, can be more readily and more accurately detected by the use of vegetable and animal oil lamp than with electric or carbide lamp, and as it is

the duty of the mine inspectors to formulate rules and regulations for the safety of those engaged in mining, we make the following recommendations:

First, That the Superintendent and Mine Foreman or their assistants are hereby required to carry an oil lamp when working at their respective duties in the mines.

Second, That any Company man whose duty compels him to visit stoppings, closing off old workings, or abandoned parts of mines, be also required to carry an oil lamp for his own protection.

Third, That where a number of men are employed in drawing pillars that there must be at least one oil lamp in the place where the pillars are being drawn.

These orders to be effective upon receipt of this letter.

Very respectfully submitted,

W. E. HOLLAND,
R. T. RHYS,
EDWARD SWEENEY,
Iowa Mine Inspectors.

COAL PRODUCTION OF IOWA.

For Fiscal Year Ending With June 30, 1914.

FIRST DISTRICT.

County	Tons of coal produced	Average number of employees
Appanoose	1,364,377	2,706
Monroe (part)	1,535,136	2,306
Wayne	83,915	245
Lucas	12,308	27
	2,995,736	5,284

ERRATA

The coal production of Iowa for the fiscal year ending June 30, 1914, should be for the year ending June 30, 1913.

THIRD DISTRICT

Polk	1,464,300	2,555
Dallas	811,211	914
Boone	219,452	895
Webster	50,500	118
Guthrie	9,427	61
Greene	5,500	36
Scott	900	4
Total.....	2,564,390	4,593

TOTAL COAL PRODUCTION OF STATE FOR FISCAL YEAR.

First District	2,815,789	6,245
Second District	2,027,798	4,777
Third District	2,564,390	4,593
Total.....	7,415,757	15,665

the duty of the mine inspectors to formulate rules and regulations for the safety of those engaged in mining, we make the following recommendations:

First, That the Superintendent and Mine Foreman or their assistants are hereby required to carry an oil lamp when working at their respective duties in the mines.

Second, That any Company man whose duty compels him to visit stoppings, closing off old workings, or abandoned parts of mines, be also required to carry an oil lamp for his own protection.

Third, That where a number of men are employed in drawing pillars that there must be at least one oil lamp in the place where the pillars are being drawn.

These orders to be effective upon receipt of this report.

COAL PRODUCTION OF IOWA.

For Fiscal Year Ending With June 30, 1914.

FIRST DISTRICT.

County	Tons of coal produced	Average number of employees
Appanoose	1,164,877	2,796
Monroe (part)	1,335,135	17,265
Wayne	89,915	245
Lucas	13,238	37
Taylor	5,830	26
Pago	5,500	22
Adams	6,068	30
Total	2,815,789	6,845

SECOND DISTRICT.

Monroe (part)	1,079,266	2,162
Mahaska	534,517	944
Jasper	294,754	584
Marion	212,070	339
Wapello	190,448	474
Van Buren	13,006	45
Keokuk	4,624	14
Warren	4,600	12
Jefferson	3,523	16
Davis	840	6
Total	2,337,708	4,777

THIRD DISTRICT

Polk	1,064,200	2,565
Dallas	511,211	914
Boone	319,482	805
Webster	60,800	148
Guthrie	9,467	61
Greene	8,500	30
Scott	500	4
Total	2,964,260	4,993

TOTAL COAL PRODUCTION OF STATE FOR FISCAL YEAR.

First District	2,815,789	6,845
Second District	2,337,708	4,777
Third District	2,964,260	4,993
Total	7,415,757	15,695

COAL PRODUCTION OF IOWA.
FOR THE YEAR ENDING JUNE 30, 1914.

FIRST DISTRICT.

County	Tons of coal produced	Average number of employees
Appanoose	1,222,915	2,330
Monroe (part)	1,465,584	2,306
Wayne	79,002	250
Lucas	149,708	303
Taylor	8,365	33
Page	7,512	52
Adams	12,730	54
Total	2,894,167	6,993

SECOND DISTRICT.

Monroe (part)	1,004,455	1,700
Marion	307,668	654
Mahaska	304,700	633
Jasper	235,152	563
Wapello	157,774	466
Van Buren	32,500	36
Keokuk	7,230	15
Warren	7,153	21
Jefferson	1,300	30
Davis	640	4
Total	2,049,592	4,196

THIRD DISTRICT

Polk	1,630,635	2,740
Dallas	475,511	803
Boone	213,221	745
Weber	37,369	114
Guthrie	7,759	51
Greene	7,770	31
Scott	700	7
Total	2,377,975	4,361

TOTAL COAL PRODUCTION OF STATE FOR FISCAL YEAR.

First District	2,894,167	6,993
Second District	2,049,592	4,196
Third District	2,377,975	4,361
Total	7,312,734	15,740

NUMBER OF MINES IN EACH COUNTY OF IOWA, THEIR COAL OUTPUT, NUMBER OF MINES AND OTHER EMPLOYES FOR YEAR ENDING JUNE 30, 1913.

Number	County	Number of mines	Tons of coal of all grades produced	Number of employees	Number of mines employed	Number of employees	Total number employees
1	Monroe	25	2,614,492	3,634	952	241	4,368
2	Polk	25	1,464,300	1,864	595	226	2,595
3	Appanoose	59	1,154,377	2,343	336	307	2,756
4	Mahaska	29	324,317	684	161	99	944
5	Dallas	5	511,211	825	215	74	914
6	Jasper	11	294,754	277	145	62	384
7	Boone	10	219,485	269	160	56	386
8	Marion	17	213,079	323	91	77	520
9	Wapello	15	190,448	311	112	51	474
10	Wayne	5	88,915	186	41	18	245
11	Weber	6	50,800	99	34	15	148
12	Lucas	3	13,238	23	7	7	37
13	Van Buren	2	13,006	39	6	6	45
14	Guthrie	3	9,467	52	1	1	61
15	Greene	3	8,500	20	5	5	38
16	Adams	3	6,083	24	1	1	30
17	Taylor	4	5,300	35	5	5	36
18	Page	2	5,200	31	2	2	25
19	Keokuk	3	4,024	11	2	2	14
20	Warren	1	4,000	6	2	2	12
21	Jefferson	2	2,583	9	3	3	16
22	Davis	1	840	4	1	1	6
23	Scott	1	500	3	1	1	4
Total		346	7,415,757	11,301	3,008	1,386	15,685

NUMBER OF MINES IN EACH COUNTY OF IOWA, THEIR COAL OUTPUT, NUMBER OF MINES AND OTHER EMPLOYES FOR YEAR ENDING JUNE 30, 1914.

1	Monroe	26	2,410,509	3,824	964	345	4,156
2	Polk	25	1,630,635	1,962	609	249	2,740
3	Appanoose	73	1,222,915	2,967	313	315	3,530
4	Dallas	4	475,511	825	219	66	903
5	Marion	19	307,668	450	116	88	654
6	Mahaska	19	304,700	479	110	64	653
7	Jasper	10	235,152	341	164	53	563
8	Boone	9	213,221	321	160	64	745
9	Wapello	15	157,774	263	114	69	446
10	Lucas	4	140,758	271	70	22	363
11	Wayne	4	79,002	196	42	22	260
12	Weber	6	37,369	81	22	11	114
13	Adams	9	12,730	68	6	10	84
14	Van Buren	7	12,500	25	5	4	38
15	Taylor	4	8,365	35	5	5	36
16	Page	4	7,512	23	8	8	32
17	Keokuk	3	7,230	19	2	2	21
18	Warren	4	7,153	14	4	4	21
19	Guthrie	7	7,759	44	1	1	51
20	Greene	3	7,770	22	5	4	31
21	Jefferson	2	2,300	10	2	2	14
22	Scott	2	700	3	1	1	7
23	Davis	1	640	3	1	1	4
Total		238	7,312,734	11,167	3,115	1,458	15,740

NUMBER OF MINES IN EACH DISTRICT, THEIR COAL OUTPUT.
NUMBER OF MINERS AND OTHER EMPLOYEES FOR
THE YEAR ENDING JUNE 30, 1913.

District	Number of mines	Tons of coal produced	Number of miners employed	Number of other employees	Number of outside employees	Total number of employees
Number 1	87	2,812,789	4,744	1,066	545	6,355
Number 2	100	2,537,798	3,256	1,092	446	4,794
Number 3	86	2,364,260	3,248	930	395	4,573
Total	263	7,714,847	11,248	3,088	1,386	15,722

NUMBER OF MINES IN EACH DISTRICT, THEIR COAL OUTPUT.
NUMBER OF MINERS AND OTHER EMPLOYEES FOR
THE YEAR ENDING JUNE 30, 1914.

Number 1	110	2,894,167	5,069	1,263	637	6,969
Number 2	98	2,040,292	2,891	886	419	4,196
Number 3	55	2,377,975	3,133	966	402	4,501
Total	263	7,312,434	11,107	3,115	1,458	15,740

CAUSE OF FATAL ACCIDENTS IN IOWA MINES DURING YEAR
ENDING JUNE 30, 1913.

Cause of Accident	Counties						Total
	Monroe	Folk	Boone	Dallas	Wapello	Van Buren	
Fall of slate, coal, bat or roof	8	2	2	1	1	1	15
Ignition of powder keg	1						1
Fell under or hit by mine cars	6						6
Premature powder explosion	2						2
Total	17	2	2	1	1	1	24

CAUSE OF FATAL ACCIDENTS IN IOWA MINES DURING YEAR
ENDING JUNE 30, 1914.

Cause of Accident	Counties										Total
	Monroe	Folk	Marion	Dallas	Wapello	Jasper	Ma-hacke	Warren	Appa-nose	Lucas	
Fall of slate, coal, bat or rock	8	2	2	2	2	1					25
Fell under or hit by mine cars	1	1						1	1	1	4
Flying coal from shot								1			1
Ignition of powder keg											3
Dust explosion	2										2
Fell down shaft	1										1
Struck by cage					1						1
Total	12	9	2	2	2	1		1	1	1	28

CAUSE OF NON-FATAL ACCIDENTS IN IOWA MINES FOR TWO
YEARS ENDING JUNE 30, 1914, AND COUNTIES IN
WHICH ACCIDENT OCCURRED.

Cause of Accident	Counties														Total
	Monroe	Folk	Appa- nose	Wayne	Lucas	Boone	Dallas	Webster	Greene	Wapello	Malaska	Jasper	Warren		
Fall of slate, coal, bat or rock	47	48	28	8	2	9	12	1	1	10	10	4	4	186	
Fell under or hit by car or motor	43	28	8		3	4	8			2	5	1	6	108	
Kicked or hurt by mine	6	2	1		1									14	
Fall of car or prop timbers	2											1		4	
Blown out shot, premature explosion	2													2	
Cage or shaft accident	1	1				2							2	5	
Drilling out misfired shot	1	1												2	
Caught by mining machine														2	
Carbide lamp explosion	1												1	3	
Ignition of gasoline	1													1	
Ignition of keg of powder	1													1	
Dust explosion											1			1	
Miscellaneous	2	2	2											12	
Total	100	84	40	8	7	12	21	1	1	12	17	5	16	239	

FATAL AND NON-FATAL ACCIDENTS IN THE MINES OF THE STATE
DURING THE YEAR ENDING JUNE 30, 1913, WITH RELATION
TO COAL PRODUCED AND NUMBER OF
ACCIDENTS.

District	Number of Accidents		Number of tons of coal produced	Tons of coal produced for each accident		Number of employees	Number of employees for each accident	
	Fatal	Non fatal		Fatal	Non fatal		Fatal	Non fatal
Number 1	10	53	2,813,789	281,378	53,000	6,345	634	119
Number 2	9	52	2,337,706	259,745	44,955	4,777	630	91
Number 3	5	71	2,354,500	470,901	31,890	4,563	512	64
Total	24	176	7,505,995	912,024	129,845	15,685	633	89

FATAL AND NON-FATAL ACCIDENTS IN THE MINES OF THE STATE
DURING THE YEAR ENDING JUNE 30, 1914, WITH RELATION
TO COAL PRODUCED AND NUMBER OF
ACCIDENTS.

Number 1	11	69	2,804,167	255,196	41,944	6,998	635	101
Number 2	11	39	2,040,592	185,508	32,322	4,196	381	107
Number 3	13	53	2,877,915	198,164	44,897	4,551	379	86
Total	34	161	7,722,674	538,868	119,163	15,745	495	94

TABLE SHOWING FATAL MINE ACCIDENTS IN IOWA FOR THE
LAST NINETEEN YEARS, THEIR RELATION TO
COAL TONNAGE AND EMPLOYES.

Year	No. of accidents	Tons of coal produced	Tons of coal per accident	No. of employees	Fatality rate per 100 em- ployes
1895	22	3,585,400	163,000	11,451	2.0
1897	21	3,709,734	176,654	11,678	1.8
1898	36	4,397,723	122,156	10,550	3.4
1899	39	4,940,310	126,674	11,029	3.5
1900	39	5,117,285	131,212	13,041	2.9
1901	37	5,441,863	147,077	13,175	2.8
1902	35	5,514,506	157,557	13,092	2.7
1903	31	6,185,734	199,540	13,192	2.3
1904	31	6,214,379	200,464	16,315	1.9
1905	24	6,808,011	283,667	17,624	1.4
1906	27	7,017,485	259,907	16,825	1.6
1907	35	7,468,435	213,384	17,045	2.0
1908	38	7,155,434	188,301	17,312	2.2
1909	38	7,346,353	193,325	18,092	2.1
1910	39	7,322,490	187,756	18,046	2.1
1911	38	7,729,674	203,412	16,850	2.2
1912	30	6,820,828	227,363	16,215	1.8
1913	24	7,413,737	308,909	15,685	1.5
1914	34	7,722,674	227,137	15,745	2.1

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FOR THE

STATE OF IOWA

 1914

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