8042	Watters, William J...	Des Moines	Buxton.
8079	Wiesjahn, William H.	Des Moines	Chicago, Ill.
8080	Wertz, Clyde S.....	Independence	Rushville, Ind.
8121	Wimber, Fred L.....	West Union	Waterloo.
8144	Wasson, John D.....	Des Moines	Ogden.
8142	Weston, D. C.....	Colfax	Granger.
8195	White, Marvel B.....	Des Moines	Hannibal, Mo.
8217	Weirather, Fred H....	Winfield.	
8223	Walton, W. A.....	Webster City	Colo. Springs, Colo.
8224	Wolden, John Magnus	Wallingford.	
8256	Woodburn, E. C.....	Osceola.	
8278	Witt, William J.....	Des Moines.	
8288	Williams, Tom	Buxton.	
8290	Workman, H. A.....	Henderson.	
8291	Williams, Ralph	Tabor.	
8304	Weirick, Geo. S.....	Colfax.	
8355	Werner, Henry J.....	Wesley.	
8372	Wertz, Eddie M.....	Davenport.	
8373	Wick, Dallis H.....	New Hartford.	
855	Young, B. F.....	Manson.	
2698	Yockey, C. C.....	Danbury	Correctionville.
2962	Yocum, A. L.....	Newburn	Chariton.
4002	Yates, E. T.....	Audubon	Omaha, Neb.
4036	Young, E. M.....	Beaman	La Crosse, Wis.
4182	Young, Charles O.....	Maquoketa.	
4402	Young, J. M.....	Bayard	Jamaica.
4767	Young, John	Sioux City	Council Bluffs.
4832	Young, E. M.....	Shellsburg.	
4858	Yager, Charles W....	Calmar	Rockford.
5410	Young, L. H.....	Leon	Ottumwa.
6091	Yoeman, J Victor.....	Des Moines	Swink, Colo.
6234	Young, C. W.....	Manson	Albert City.
6265	Young, C. B.....	Oelwein	Des Moines.
6353	York, T. E.....	Bloomfield	Thurman.
6793	Young, Charles R.....	Des Moines	Toledo.
7026	Yeoman, I. F.....	Des Moines	Elwood, Neb.
7185	Yocom, W. W.....	Springville	Chariton.
7249	Yerian, Clyde E.....	Davenport	Fort Wayne, Ind.
7319	Young, J. B.....	Knoxville	Jessup.
7733	Young, R. R.....	Des Moines.	
4402	Young	Bayard	Jamaica.
4425	Zeigler, H. L.....	Eagle Grove	Peoria, Ill.
5464	Zinser, E. W.....	Sioux Rapids.	
5718	Zillig, J. A., Jra.....	Dubuque.	
6130	Zimmerman, Chas. F..	Gowrie	
6447	Zimmerman, J. J.....	Chapin.	Ackley.
6640	Zimmerman, W. J.....	Gowrie	Liscomb.
7067	Zimmerman, C. J.....	Van Horne	Waterloo.
7139	Zieprecht, Carl W....	Dubuque.	
7186	Zender, M. J.....	Earling.	
7263	Zwanziger, J. W.....	Frederika.	
6355	Zeiger, Frank W.....	Buffalo Center	Garner.
7364	Zastera, Frank	Cedar Rapids.	
7450	Zimmerman, Julius ..	Hampton	Kelley.
7541	Zergen, G. F.....	Cedar Rapids	Hollywood, Kan.
7672	Zimmerman, Floyd V.	Waterloo	Breckenridge, Colo.
7976	Zimmerman, W. D....	Red Oak.	
8189	Zinn, Edgar	Klemme	Chicago, Ill.
8218	Zimmerman, Wm	Marengo	Cedar Rapids.

FOURTEENTH BIENNIAL REPORT

OF THE

STATE MINE INSPECTORS

FOR THE

Two Years Ending June 30, 1908

TO THE

GOVERNOR OF THE STATE OF IOWA

PRINTED BY ORDER OF THE GENERAL ASSEMBLY

DES MOINES
EMORY H. ENGLISH, STATE PRINTER
1908

STATE MINE INSPECTORS.

District No. 1—JOHN VERNER, Chariton.
District No. 2—RHYS T. RHYS, Ottumwa.
District No. 3—EDWARD SWEENEY, Des Moines.

BOARD OF EXAMINERS.

FOR MINE INSPECTORS, MINE FOREMEN, AND HOISTING ENGINEERS

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

BIENNIAL REPORT OF THE

FIRST DISTRICT

COUNTIES COMPRISING THE FIRST DISTRICT:

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

JOHN VERNER, INSPECTOR,
Chariton, Iowa.

LETTER OF TRANSMITTAL.

HON. ALBERT B. CUMMINS, Governor of Iowa:

SIR,—I have the honor to submit to you herewith the report of the First Inspection District, covering the two years ending June 30, 1908.

Very respectfully,

JOHN VERNER,
Chariton, Iowa.

Inspector First District.

REPORT OF FIRST DISTRICT.

The first inspection district is composed at present of the counties of Appanoose, Monroe (part), Lucas, Wayne, Taylor, Page and Adams. During the last two years the mines in the district were inspected in compliance with the requirements of the law and as often as possible. During the year ending June 30, 1907, 216 mines were inspected and five scales were tested; during the year ending June 30, 1908, 220 inspections were made and seven scales were tested.

I am pleased to say that there has been and is now a manifest desire on the part of the mine operators, especially those operating the larger plants, to put and keep their mines in as good condition as possible. They realize that providing reasonable safety and fair sanitary conditions is not only right and due the men working in the mines, but that such policy is decidedly good business. But in order to get the best results from the good intentions of the operators, the earnest co-operation of the men directly in charge of the mining operations is needed. To the end that intelligent and fairly uniform co-operation by the men now licensed by the State to supervise the mines and handle the machinery may result, their duties should be defined by law. The present law requiring certificated mine foremen and hoisting engineers has proved a step in the right direction, but it is incomplete, because their duties and responsibilities are not prescribed by law. Furthermore, no matter how unworthy or unfit they may prove to be, after having received their certificates of competency from the examining board there is now no lawful way by which the certificates granted such persons may be suspended or revoked for cause. I therefore respectfully recommend that this matter receive the attention of the next legislature, believing that the defining by law of the duties and responsibilities of mine foremen and hoisting engineers will prove of material assistance in decreasing the number of fatal and serious accidents in and around the mines.

During the year ending June 30, 1907, the mines in this district produced 2,843,023 tons of coal, while during the year ending June 30, 1908, the coal production amounted to 2,653,599 tons, a decrease

as compared with the previous year of 188,824 tons. Every county in the district had a decreased output of coal. Appanoose county showed a decrease of 50,161 tons, Monroe county (part) 44,923 tons, Lucas county 52,291 tons, Wayne county 35,293 tons, Taylor county 2,090 tons, Page county 1,936 tons and Adams county 2,730 tons.

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

NUMBER OF MINES IN OPERATION IN EACH COUNTY, THEIR COAL OUTPUT, NUMBER OF MINERS AND OTHER EMPLOYES IN DISTRICT NO. 1, FOR THE YEAR ENDING JUNE 30, 1907.

County	Number of railroad mines	Number of local mines	Tons of coal of all grades produced	Number of miners	Number of other inside employes	Number of outside employes	Total number employed
Appanoose	64	29	1,157,967	2,884	616	388	3,888
Monroe (part)	10	1	1,346,297	1,398	537	188	2,053
Lucas	2	2	126,579	159	53	25	237
Wayne	2	8	159,758	347	113	61	521
Taylor	3	4	15,951	81	18	10	109
Page	....	5	15,981	76	17	10	103
Adams	....	12	20,490	142	18	18	178
Totals	81	61	2,843,023	5,017	1,372	700	7,089

NUMBER OF MINES IN OPERATION IN EACH COUNTY, THEIR COAL OUTPUT, NUMBER OF MINERS AND OTHER EMPLOYES IN DISTRICT NO. 1, FOR THE YEAR ENDING JUNE 30, 1908.

County	Number of railroad mines	Number of local mines	Tons of coal of all grades produced	Number of miners	Number of other inside employes	Number of outside employes	Total number employed
Appanoose	62	29	1,107,806	2,991	629	406	4,026
Monroe (part)	10	....	1,301,374	1,280	585	209	2,076
Lucas	1	2	74,288	113	40	20	170
Wayne	2	7	124,465	327	94	50	471
Taylor	3	3	13,861	58	14	7	79
Page	....	5	14,045	75	12	9	96
Adams	....	10	17,760	120	14	14	148
Totals	78	55	2,653,599	4,973	1,388	708	7,099

COAL PRODUCTION IN TONS IN THE COUNTIES NOW COMPRISING THE FIRST DISTRICT, FOR THE LAST FIVE YEARS.

County.	1904	1905	1906	1907	1908
Appanoose	895,759	895,480	1,056,655	1,157,967	1,107,806
Monroe (part)	1,118,548	1,129,357	1,260,544	1,346,297	1,301,374
Lucas	230,384	165,550	151,432	126,579	74,288
Wayne	95,424	104,873	121,288	159,758	124,465
Taylor	13,820	15,651	19,505	15,951	13,861
Page	17,400	17,166	17,978	15,981	14,045
Adams	15,135	19,877	21,817	20,490	17,760
Totals	2,395,470	2,347,300	2,648,519	2,843,023	2,653,599

ACCIDENTS.

During the year ending June 30, 1907, nine fatal accidents occurred in and around the mines in this district, and thirty-two serious accidents were reported to this office. Five persons were killed by falls of roof or coal, two were killed by being run over by cars, one fell down a hoisting shaft and one was crushed by a box car. Nineteen of the serious accidents were caused by falls of roof or coal, nine persons were injured by cars and four injuries were due to other causes.

The year ending June 30, 1908, showed a decided increase in the number of deaths. During that year fifteen persons were killed in and around the mines of this district. While none of the coroner's verdicts charges culpable negligence on the part of the persons in charge of the mines where these fifteen men lost their lives, it is very probable, and in some cases a fact, that a number of these deaths would not have occurred had there been more efficient discipline in the mines and had the mine foremen in charge always had a correct conception of their responsibilities. No reasonable man will expect mine foremen to do impossible things. They cannot prevent all accidents in the mines under their control, but they can and should use their powers and opportunities vigorously at all times to leave nothing undone to prevent their occurrence. In order to have uniform action toward lessening the loss of life in the mines the duties of mine foremen and hoisting engineers should be defined specifically by law.

Thirty-seven serious accidents were reported for the year ending June 30, 1908. Twenty-two of these accidents were due to falls of roof or coal, and twelve persons were injured by cars.

The following tables give the accidents in detail and their relation to the output of coal and number of men employed:

FATAL ACCIDENTS IN DISTRICT No. 1, JULY 1, 1906—JUNE 30, 1907.

Date	Name of Deceased	Occupation	Cause of Death	Employed by—	County
1906.					
August 14	J. W. Harnden	Driver	Run over by car	Hocking Coal Co.	Monroe
August 15	C. Ellis	Loader	Fall of black bat.	Centerville Block Coal Co.	Appanoose
November 12	John Kitto	Driver	Run over by car	Wapello Coal Co.	Monroe
December 29	W. Glasscock		Fall of slate	Thistle Coal Co.	Appanoose
December 31	Geo. Jones, Jr.	Roadman	Fell down shaft	Numa Block Coal Co.	Wayne
1907.					
January 21	Geo. Swab	Miner	Fall of coal	Thistle Coal Co.	Appanoose
February 1	Jos. Bloom	Miner	Fall of slate	White Ash Coal Co.	Monroe
February 13	Jos. Burdess	Miner	Fall of slate	Wapello Coal Co.	Monroe
May 18	E. Miller	Chunker	Crushed by boxcar	Hocking Coal Co.	Monroe

SERIOUS ACCIDENTS IN DISTRICT No. 1, JULY 1, 1906—JUNE 30, 1907.

Date	Name of Injured	Occupation	Character of Injury	Cause of Injury	Employed by—	County
1906.						
July 6	D. S. Jame	Timberman	Spine and scalp bruised	Fall of slate	Smoky Hollow Coal Co.	Monroe
August 3	P. Manara	Timberman	Back, chest and arm bruised	Fall of slate	Smoky Hollow Coal Co.	Monroe
				Fall of slate	Wapello Coal Co.	Monroe
August 15	J. Mathews	Miner	Back injured	Spragging car	Star Coal Co.	Monroe
August 22	G. Shibohar	Driver	Arm broken	Fall of slate	Phillips Fuel Co.	Monroe
September 1	E. T. Ades	Timberman	Leg broken	Fell from trip	Mystic Coal Co.	Appanoose
September 10	Geo. McCormick	Miner	Back injured	Fell off cage	Phillips Fuel Co.	Monroe
September 15	C. W. Leach	Laborer	Leg broken	Fall of slate	Winnifred Coal Co.	Appanoose
September 24	R. McCallum	Miner	Leg broken	Fall of coal	Centerville Block Coal Co.	Appanoose
October 8	Geo. Ellis	Cager	Foot injured	Fell off cage	Centerville Block Coal Co.	Appanoose
October 16	Wm. Ellis	Pipeman	Two ribs broken	Fall of slate	Wapello Coal Co.	Monroe
October 20	John Rivers	Miner	Leg broken	Fall of slate	Walnut Grove Coal Co.	Appanoose
November 10	F. M. Vought	Miner	Leg broken	Fall of coal		
November 15	R. Garusch	Timberman	Foot bruised and bone broken	Fall of slate	Smoky Hollow Coal Co.	Monroe
				Caught between cars	Centerville Block Coal Co.	Appanoose
November 25	C. Hasty	Driver	Arm broken	Fell off tail chain	Hocking Coal Co.	Monroe
December 3	J. Spavin	Driver	Body and head bruised	Fall of coal	Manufacturers C. & C. Co.	Appanoose
December 10	Jas. Storer	Miner	Arm broken	Car fell o nhim	Wapello Coal Co.	Monroe
December 15	I. Price	Driver	Foot badly bruised	Ignition of powder	Smoky Hollow Coal Co.	Monroe
December 19	J. Barto	Miner	Face and arms burned	Fall of slate	Smoky Hollow Coal Co.	Monroe
December 29	H. Bliterman, Sr.	Miner	Three ribs broken	Fell in jumping from car		
January 2	W. Mitchell	Trapper	Arm broken	Fell under cars	Wapello Coal Co.	Monroe
				Fell on dirt dump	Wapello Coal Co.	Monroe
January 9	Geo. Murrow	Driver	Leg broken	Caught by chute	Mendota Coal & Mining Co.	Appanoose
January 28	J. Morrow	Topman	Arm broken	Caught between car and rib	Centerville Block Coal Co.	Appanoose
January 28	O. Bettidine	Chunker	Leg broken	Fall of slate	Hocking Coal Co.	Monroe
February 1	S. Mowe	Driver	Finger cut off	Caught between cars	Hocking Coal Co.	Monroe
				Fall of slate	Hocking Coal Co.	Monroe
March 24	G. Robinson	Miner	Knee dislocated	Fall of coal	Hocking Coal Co.	Monroe
March 29	R. Dale	Coupler	Wrist broken	Fall of bony coal	Smoky Hollow Coal Co.	Monroe
April 10	G. Leggett, Sr.	Timberman	Three ribs broken	Fall of slate	Manufacturers C. & C. Co.	Appanoose
April 27	John Gore	Miner	Back and shoulders bruised	Fall of slate	Smoky Hollow Coal Co.	Monroe
May 7	A. Faro	Miner	Leg broken	Fall of coal	Mystic Block Coal Co.	Appanoose

FATAL ACCIDENTS IN DISTRICT No. 1, JULY 1, 1907—JUNE 30, 1908.

Date	Name of Deceased	Occupation	Cause of Death	Employed by—	County
1907.					
August 9	R. Gault	Topman	Struck by cage	Centerville Block Coal Co.	Appanoose
August 22	H. E. Holland	Tracklayer	Fall of slate	Wapello Coal Co.	Monroe
September 24	John Benson	Timberman	Fall of slate	Phillips Fuel Co.	Monroe
October 11	Fred Baker	Miner	Fall of coal	Peerless Coal Co.	Appanoose
December 4	G. L. Murrow	Driver	Fall of slate	Wapello Coal Co.	Monroe
December 14	H. E. Skeels	Shot examiner	Fall of slate	Wapello Coal Co.	Monroe
December 19	H. S. Badgley	Shot firer	Afterdamp	Hocking Coal Co.	Monroe
1908.					
January 14	J. Del Ponte	Miner	Fall of slate	Anchor Coal Co.	Appanoose
January 17	A. Wester	Laborer	Fell down shaft	Hocking Coal Co.	Monroe
February 8	J. A. Homner	Shot firer	Afterdamp	Hocking Coal Co.	Monroe
February 21	A. Arnold	Miner	Fall of slate	Pearson & Maley	Page
February 21	J. Brewer	Miner	Fall of slate	Pearson & Maley	Page
February 28	D. Meadows	Miner	Fall of slate	Smoky Hollow Coal Co.	Monroe
March 10	F. Medena	Miner	Fall of coal	Peerless Coal Co.	Appanoose
March 30	C. R. Deaver	Driver	Run over by car	Smoky Hollow Coal Co.	Monroe

SERIOUS ACCIDENTS IN DISTRICT No. 1, JULY 1, 1907—JUNE 30, 1908.

Date	Name of Injured	Occupation	Character of Injury	Cause of Injury	Employed by—	County
1907.						
July 9	Wm. Bowen	Miner	Head and face injured	Fall of slate	Wapello Coal Co.	Monroe
July —	G. Uttstrom	Roadman	Arm broken	Fall of slate	Dewey Coal Co.	Appanoose
July 10	E. Anderson	Driver	Leg broken	Caught under car	Wapello Coal Co.	Monroe
August 10	M. Morris	Miner	Back injured	Fall of coal	Star Coal Co.	Appanoose
August 10	J. Forsen	Miner	Face cut	Fall of slate	Wapello Coal Co.	Monroe
August 14	J. Lawrence	Tracklayer	Eye injured	Struck by spike	Wapello Coal Co.	Monroe
August 20	S. Richardson	Miner	Back injured	Fall of slate	Smoky Hollow Coal Co.	Monroe
August 24	H. Calvert	Miner	Legs broken	Fall of slate	Phillips Fuel Co.	Monroe
August 24	S. Ambury	Oiler	Leg broken	Caught by car	Numa Block Coal Co.	Wayne
August 26	Geo. Jones	Mine forem'n	Leg broken	Caught between cars	Numa Block Coal Co.	Wayne
September 13	S. Bailey	Miner	Arm broken	Fall of coal	Mendota Coal & Mining Co.	Appanoose
September 14	F. Anderson	Spragger	Finger cut off	Run over by car	Wapello Coal Co.	Monroe
September 16	D. T. Evans	Miner	Ribs broken	Fall of slate	Cleveland Coal Co.	Lucas
September 23	B. Simonetta	Miner	Leg broken	Fall of slate	Smoky Hollow Coal Co.	Monroe
October 8	F. Anderson	Spragger	Ear Cut off	Caught by car	Wapello Coal Co.	Monroe
October 9	W. Vernator	Driver	Bone right arm broken	Caught between cars	Smoky Hollow Coal Co.	Monroe
October 12	R. Powell	Miner	Leg broken	Fall of slate	Wapello Coal Co.	Monroe
October 15	J. Facenda	Miner	Small bone in leg broken	Fall of coal	Manufacturers C. & C. Co.	Appanoose
October 23	H. Horn	Driver	Arm broken	Caught between car and timber	Smoky Hollow Coal Co.	Monroe
1907.						
October 20	R. C. Mefford	Driver	Knee injured	Kicked by mule	Smoky Hollow Coal Co.	Monroe
November 13	J. Champ	Miner	Leg broken	Fall of slate	Smoky Hollow Coal Co.	Monroe
December 10	O. Rivers	Driver	Ankle badly injured	Caught by car	Wapello Coal Co.	Monroe
December 16	E. Bialto	Miner	Arm and face burned	Powder exploded	Smoky Hollow Coal Co.	Monroe
1908.						
January 29	W. Neighbour	Trapper	Foot injured	Run over by car	Wapello Coal Co.	Monroe
February 8	J. Welch	Miner	Foot injured	Fall of coal	Wapello Coal Co.	Monroe
February 10	P. Pollick	Miner	Leg broken	Fall of coal	Prairie Block Coal Co.	Appanoose
February 14	M. H. Adey	Roadman	Leg broken	Caught between cars	Hocking Coal Co.	Monroe
February 17	J. Hunt	Miner	Foot fractured	Fall of coal	Smoky Hollow Coal Co.	Monroe
February 20	R. Bailey	Miner	Leg broken	Fall of coal	Peacock Coal Co.	Appanoose
February 27	H. Carwin	Miner	Back injured	Fall of slate	Wapello Coal Co.	Monroe
February 28	J. Raselvick	Miner	Collar bone broken	Fall of coal	Prairie Block Coal Co.	Appanoose
March 16	S. Carlo	Miner	Bone in left foot broken	Caught by car	Smoky Hollow Coal Co.	Monroe
March 19	F. I. Dixon	Miner	Leg broken	Fall of slate	Cleveland Coal Co.	Lucas
March 21	Geo. Taylor	Miner	Arm broken	Fall of slate	Wapello Coal Co.	Monroe
May 12	C. Utterback	Driver	Back badly bruised	Fall of slate	Smoky Hollow Coal Co.	Monroe
June 19	D. Williams	Driver	Right arm lacerated	Caught by car	Smoky Hollow Coal Co.	Monroe
June 19	O. Duskin	Miner	Leg broken	Fall of coal	Numa Block Coal Co.	Wayne
June 20						

FATAL AND SERIOUS ACCIDENTS IN DISTRICT NO. 1, JULY 1, 1906—JUNE 30, 1907, WITH RELATION TO COAL PRODUCED AND NUMBER OF EMPLOYES.

County	Number of Accidents		Number of tons of coal produced	Tons of Coal Produced for Each Accident		Number of employes	Number of Employes for Each Accident	
	Fatal	Serious		Fatal	Serious		Fatal	Serious
Appanoose	3	11	1,157,967	385,989	105,270	3,888	1,296	353
Monroe (part)	4	20	1,346,297	336,574	67,315	2,053	513	102
Lucas			126,579			237		
Wayne	1		159,758	159,758		521	521	
Taylor			15,951			109		
Page			15,981			103		
Adams			20,490			178		
Totals	9	31	2,843,023	315,891	91,710	7,089	787	227

FATAL AND SERIOUS ACCIDENTS IN DISTRICT NO. 1, JULY 1, 1907—JUNE 30, 1908, WITH RELATION TO COAL PRODUCED AND NUMBER OF EMPLOYES.

County	Number of Accidents		Number of tons of coal produced	Tons of Coal Produced for Each Accident		Number of employes	Number of Employes for Each Accident	
	Fatal	Serious		Fatal	Serious		Fatal	Serious
Appanoose	4	7	1,107,806	276,951	158,258	4,026	1,006	575
Monroe (part)	9	25	1,301,374	144,597	52,055	2,076	231	83
Lucas		2	74,288		37,144	173		86
Wayne		3	124,465		41,488	471		157
Taylor			13,861			79		
Page	2		14,045	7,022		96	48	
Adams			17,760			148		
Totals	15	37	2,653,599	176,906	71,718	7,069	471	190

FATAL ACCIDENTS IN DISTRICT NO. 1 FOR THE LAST SIX YEARS, THEIR RELATION TO NUMBER OF EMPLOYES, AND FATALITY RATE PER 1,000 MEN EMPLOYED.

Date	Number of fatal accidents	Number of employes	Number of employes per death	Fatality rate per 1,000 men employed
July 1, 1902—June 30, 1903	11	6,359	578	1.73
July 1, 1903—June 30, 1904	13	6,796	523	1.9
July 1, 1904—June 30, 1905	7	7,250	1,036	.96
July 1, 1905—June 30, 1906	16	7,075	442	2.26
July 1, 1906—June 30, 1907	9	7,089	787	1.27
July 1, 1907—June 30, 1908	15	7,069	471	2.12

NATIONAL ASSISTANCE IN THE PREVENTION OF MINE ACCIDENTS.

In the report of 1905 I called attention to the advisability and need of national assistance in devising adequate means to lessen the number of accidents annually occurring in the mines of the United States and furnishing reliable information and advice regarding the future prevention of mine explosions. I am pleased to state that the Technologic Branch of the United States Geological Survey is about to take up this important work, as will be seen by the following article recently published in the "Black Diamond":

EXPERIMENTAL STATION.

Washington, D. C., July 23.—The United States Government, within the next few weeks, will begin a series of scientific investigations into the cause of disasters in American coal mines. By August 1st, the United States Geological Survey will have a complete experimental station in operation on the grounds of the arsenal in Pittsburgh, Pa.

Before the Hemenway amendment, making an appropriation of $150,000 for this work, became a law, survey officials were busy making tentative plans for the station. This prompt action was considered necessary because the terrible mortality record of last year is being continued into this year, although 1907 was considered an unusual one, 3,200 being killed in the coal mines as against 2,061 the year before. From unofficial estimates it appears that sixteen men have been killed or injured each work day of the year.

At the Pittsburgh experimental station, tests of the various dynamites and powders will be made with a view to accurately determine their safety in the presence of firedamp and coal dust. Explosives of all sorts will be hurled by means of a mortar into a mammoth boilerplate cylinder which has previously been filled with gas, and the effects will be carefully noted. If ignition fails after severe tests, the use of these explosives will be urged upon the mine owners.

That part of the experimental station in which the explosives are to be tested will be in the form of a cylinder, 100 feet long and 6 feet in diameter, lying on the ground. An explosive mixture of firedamp and air in one case or coal dust and air in another, will be pumped into the cylinder and the explosive to be tested will be shot into it from one end by a big steel mortar so that the flame and products of combustion will go right into the explosive.

The cylinder in which the explosions are to occur, are to be made of heavy boiler plate. Safety valves will be placed all along the top and will be left unfastened in such manner that whenever there is an explosion the valves will fly open upon their hinges. A series of port holes on the sides, covered with one-half inch glass will enable those conducting the experiments to witness the explosions from the observation house, sixty feet away. The steel mortar which will hurl the explosives into the cylinder will be fired by electricity from the observation house which is to be parallel with the cylinder itself.

While these tests are being conducted, operators and miners will be invited to be present. In order that they will be able to see clearly the explosions of gas or dust, a piece of oil paper will be placed across the face of one of the safety valves with a piece of gun-cotton suspended about six inches away. When an explosion occurs, the flames will burn the oil paper and ignite the gun-cotton.

In connection with the experimental station there will be a miniature mine with drifts, headings, rooms and ladders. This place will be filled with smoke or gas and experiments will be made with apparatus capable of sustaining life in these vapors.

The experimental work will be in direct charge of Joseph A. Holmes, expert in charge of the Technologic branch of the United States Geological Survey, assisted by H. M. Wilson, chief engineer. The station itself will be in charge of Clarence Hall, the Government's explosive expert, with Dr. Walter O. Snelling as explosive chemist.

MINE INSPECTORS' INSTITUTE OF THE UNITED STATES OF AMERICA.

At Indianapolis, Indiana, on June 9th to 12th, the organization of the Mine Inspectors' Institute of the United States of America was effected.

About fifty mine inspectors, representing the states of Pennsylvania, Ohio, West Virginia, Indiana, Illinois, Iowa, Missouri, Oklahoma and Montana and a representative of the United States government were present.

The aim of the organization is to increase the effectiveness of the inspection service in this country, to devise means for greater safety in mining and to assist toward the better conservation of the country's fuel supply by suggesting such improvements in the prevailing mining practice as will tend to reduce the present enormous waste in mining coal.

Of course only future events can show whether or not this organization will be of material benefit to the coal mining industry of this country, but if individual endeavor and the earnest and intelligent desire for co-operation of men of practical and technical training, especially qualified by years of experience in their line of work, can produce good results, the organization will prove a success and a benefit to this country.

The work of the Indianapolis meeting was largely of a preliminary nature to put the organization on an effective working basis. On the last day of the conference a number of papers were read, principally relating to mine explosions. These papers will be printed in the proceedings of the conference and their subject-matter will be discussed at the next meeting, which will be held in Scranton, Pennsylvania, commencing June 8, 1909. Through the courtesy of my colleagues I had the honor to represent Iowa at the Indianapolis meeting.

I had the privilege of reading the following paper on dust explosions:

DUST EXPLOSIONS IN NON-GASEOUS MINES.

The recent explosions in mines in West Virginia, Pennsylvania and Alabama again emphasize the pressing need of a thorough investigation of the initial causes of these disasters by the best talent in the United States available for such work.

It is probable that an investigation of mine explosions will soon be undertaken by the technologic branch of the United States Geological Survey, and there is reason for the belief that the experts conducting the investigation and carrying on the experimental work will be able to provide the proper solution for the practical elimination of mine explosions. They will be in possession of the results of the extensive investigations of commissions of experts in the European coal mining countries, they will have the advantage of further discoveries relating to explosions, since these commissions made their reports, and they will have the additional advantage of unequalled opportunities for research and successful work afforded by the widely spread coal fields of the United States with their varying conditions. They will command the valuable assistance of the mining bureaus of the different states and undoubtedly will have the benefit of suggestions and views of all, who have investigated the subject of mine explosions in this country. It is to be hoped that these experts will soon be at work.

The following article deals only with so-called dust explosions in non-gaseous mines (mines free from fire-damp) and is made specific in this direction, in order to bring out certain features, peculiar to them, and to avoid possible confusion and misunderstanding.

If the reliable records of all dust explosions that ever occurred in non-gaseous mines were available and could be examined, I believe they would disclose the fact that these explosions invariably occurred in satisfactorily ventilated mines, or that they at least originated in the satisfactorily ventilated parts of them. In my investigations I have found this to be so universally the case that it seems to justify the statement that the occurrence of a dust explosion in a non-gaseous mine may be considered positive proof that the mine, or that part of it where the explosion originated, was efficiently ventilated. In comparing the actions and effects of scores of dust explosions, I have found that the most extensive and the most destructive occurred in mines where the ventilation was exceptionally good and the air current of great volume, and yet, in the face of such proof, readily obtainable by all who desire to look into this feature, there are men who still insist that dust explosions can be eliminated by increasing the air volume going through the mines. The three Pennsylvania mine inspectors, who investigated the Monongah explosion, were entirely right in stating in their report that, "powerful fans and the circulating of large volumes of air will not prevent dust explosions." What more convincing proof, that these advocates of increased ventilation are mistaken, can be submitted than the fact, that dust explosions in non-gaseous mines almost altogether occur during the colder months of the year, when mine ventilation reaches its greatest efficiency?

This brings up the very interesting question as to why dust explosions in non-gaseous mines are almost entirely confined in their occurrence to the colder months of the year. It is an important question and

it has possibly not received the attention it deserves. The most general explanation given to account for this peculiar feature is that the mines in the winter season are very dusty and dry, due to the constant absorption of moisture by the cold air entering and traveling through them. It is assumed that the dry dust particles are easily raised by even a slight commotion in the air current and thus furnish the ready and highly inflammable material to extend the small flame from a comparatively insignificant local explosion to tremendous proportions. There may be some truth in this explanation, but I believe I shall be able to show further on that its full acceptance is unwarranted.

I do not underestimate the influence of coal dust, containing a high amount of volatile matter, in increasing the scope and magnitude of an explosion. I fully appreciate the fact that dust of that character, moist or dry, is an extremely dangerous material in the presence of heat and flame, yet I am of the opinion, paradoxical as it may appear, that coal dust should not be considered the prime factor in a dust explosion in a non-gaseous mine. Six years ago I made the statement in the report on "Mine explosions in Iowa," that "Next to the explosion of powder itself, the most influential factor in these so-called 'dust' explosions is pure air near its place of origin. It is the energizing element, and without it disastrous explosions in Iowa mines would become an impossibility. Shots may blow the tamping, and dust may be present in abundance, but both will remain comparatively harmless if the mine air is impure." Nothing has occurred since I made this statement to change my views in this respect, but the result of continued observations and investigations during the last six years warrant me in reducing the above general statement to the more specific one, that before a dust explosion of considerable extent can result, the air current in the locality affected by it must not only be fairly pure as a whole, but it must be especially pure and free from vitiation in its lowest stratum or the part travelling close to the floor of the mine workings, for as will be explained later on, from that stratum mainly must come the air supply necessary to sustain its force.

A very large number of dust explosions have occurred in non-gaseous mines in the United States in the past, yet the most diligent search has failed to show any authentic record that even one of this great number ever occurred in the summer time. The explosion record of Iowa, covering the last twenty years, shows that all the explosions in that state during that time occurred from October to March, the earliest occurring on October 22d, the latest on March 11th, and more than half of them (ten) during the months of January and February. It is well known that no fire-damp was ever found in the Iowa mines.

We know that a greater degree of moisture prevails in the mines in in the summer than at any other time of the year, yet that fact alone surely cannot account satisfactorily for the persistent absence of these explosions during the month of June, July and August, when it has been clearly established that the presence of considerable moisture in the mines in the winter has failed to prevent their occurrence. Considering all this and recognizing the fact that blown out shots, etc. (the primary cause of explosions in non-gaseous mines) are as frequent in one season as in another, what is there left but the conclusion that the status of the mine air must have a potent influence in the promotion or

prevention of these explosions? Their existence depends on combustion, and combustion depends not only on the availability and kind of the combustible material, but also to a very considerable extent on the volume and condition of the air. The mine air is in its purest state in the winter and the pronounced natural ventilation prevailing in the mines at that time of the year not only increases the air volume, but adds materially to the purity of its lowest stratum. In the summer the air volume going through the mine is generally less than in the winter, the supply of oxygen is appreciably decreased, the air is less pure and on account of the almost entire absence of natural ventilation the lowest stratum of the current, especially in the live workings, contains the greatest amount of vitiation. The first condition readily promotes combustion, the latter retards it; the one makes an explosion possible, the other prevents it.

Natural laws are fixed laws and cannot be changed to suit the occasion. If we open the door of a heated room in the winter time we find that the heated air flows from the room through the upper portion of the door, while the cold outside air enters the room through the lower portion of the opening, the velocity of the entering air being increased or decreased according to the difference of temperature in the room and outside. We know that in order to promote rapid combustion of fuel and quick generation of heat in the fire-box of a boiler the air must be drawn from below through the bars of the grate into the fire, and we further know that the purer the air so admitted and the higher its amount of oxygen, the better and more rapid the combustion, other conditions remaining the same. This is always the case, for the actions and behavior of the elements are governed by nature's unchangeable law, a law that even the most violent mine explosion cannot set aside.

Recognizing the truth of the above, we may then reasonably conclude that at the very beginning as soon as a sufficient amount of heat has been developed by a blown out shot or through some other cause, to permit this heat to exert its influence on its surroundings, there will be an inrush of air along the mine floor toward and under the heat wave and flame, this inrush carrying with it the dust in its path, injecting the dangerous fuel into the heat and flame above providing the necessary oxygen for its combustion and thus starting the explosion on its way. We may further reasonably conclude that this inrush of air and dust along the mine floor will continue in a more or less marked degree, during the entire course of the explosion.

It may be pointed out, however, that the very great pressure developed by an explosion will make any air movement from an outward direction towards it impossible. At the first glance this may appear a plausible proposition, but a closer examination of the situation will readily establish its fallacy. We know that the exceedingly high pressure preceding the heat and flame area of an explosion is met by a correspondingly high resistance. We also know that the direction of air movements is determined by difference in pressure and temperature. Even during the progress of an explosion the air, in the territory it affects, will move from the point of highest pressure towards points of lowest pressure, and from the points of lowest to points of higher temperature. The point of highest pressure in an explosion may be located just in advance of the heat

and flame, with the points of lower pressure ahead and to the rear, while the lowest degree of temperature is found nearer the floor of the mine passages. Under the circumstances, and in conformity with natural law, an inrush of air along the lower portion of the mine passages towards and into the heat area of an explosion is, therefore, inevitable.

The theory that the flame of an explosion projects itself into the dust ahead of it, and thus extends the explosion's scope, appears to be extremely faulty. It suggests a sort of stationary condition of the suspended dust, or otherwise its acceptance must be based on the assumption that the explosion's flame moves faster than the dust, or, in other words, faster than its own explosive force. It would seem that argument is not required to show the apparent impossibility of it. If it is assumed that dust and flame move with about equal velocity, and that there is no inrush of air and dust, what chance will there be for the extension of the explosion, with the fuel and the air to burn it receding with a speed commensurate to that of the advancing flame?

The existence of this inrush of air during the progress of a dust explosion rests not on theory alone. If any non-gaseous mine, just after the occurrence of a dust explosion in it, is examined with the view of discovering evidence of the existence of this inrush, it will be found that there are three features, present in a more or less marked degree, which still furnish reasonable proof that the inrush of air along the floor of the mine passage actually existed during the explosion's progress.

The first feature is the presence of an abnormally high per cent of ash in the dust particles exposed to the heat and flame of the explosion. For instance, the samples of coal and dust taken from the Winter Quarters Mine No. 4, at Scofield, Utah, after the explosion gave the following results:

Analysis of coal unaffected by the explosion:

Water	3.33 per cent
Volatile matter	42.67 per cent
Fixed carbon	49.06 per cent
Ash	4.94 per cent
Total	100.00 per cent

Analysis of soot from face of main entry:

Water	1.74 per cent
Volatile matter	18.72 per cent
Fixed carbon	45.30 per cent
Ash	34.24 per cent
Total	100.00 per cent

The materials consist of soot mixed with partially coked coal and foreign mineral matter.

Analysis of material on post:

Water	1.69 per cent
Volatile matter	17.77 per cent
Fixed carbon	47.76 per cent
Ash	32.78 per cent
Total	100.00 per cent

Material is largely soot, inclosing particles of coal, coke and mineral matter.

This shows that most of the charred and coked material comes from the mixed accumulation of coal dust and other mineral matter, generally found on the mine floor, and while the presence of the high per cent of ash does not by itself establish the existence of the inrush of air, it fairly indicates the source of the dust supply for the explosion and that is of importance when considered in connection with the other features.

The second feature consists of the sometimes quite large deposits of soot, charred and coked dust, found adhering to the sides or ends of cars, timbers, tool boxes, etc., facing away from the direction from which the explosion came. The most generally accepted explanation of this peculiar feature is based on the assumption that after the explosion has run its course in one direction, it reverses itself and returns in its original path in the opposite direction, and that the deposits of soot and coked material above mentioned, are due to this retrograde movement.

When we know that a dust explosion in a non-gaseous mine depends for its existence and extension on the presence of a plentiful supply of pure air, when we have the well established proof that such explosion, even in its outward course, will avoid the parts of the mine containing vitiated air, and when we then take into account the foul and greatly diminished air supply left in the wake of the explosion, we must conclude that a reverse dust explosion is impossible. Men have been rescued after explosions in mines in this state, who were right in their course, and a number of them were burned so severely that they died on account of their injuries shortly after their rescue, yet none of these men experienced a reverse explosion either with or without flame. Is there a more reasonable explanation for the presence of these dust deposits on the sides or ends of cars, tool boxes, etc., facing away from the explosion, than the acceptance of the existence of the inrush of air and dust along the mine floor towards, into and beyond, the explosion's heat and flame area? It is a significant fact that these dust deposits are heaviest on the parts of cars, boxes, etc., nearest the mine floor.

The third feature presents very strong evidence of the existence of this inrush of air along the mine floor. The investigations of dust explosions of the more violent type have developed unmistakable signs in parts of the mine of the presence of two forces that had been exerted in opposite directions. The twisted rails and the fragments of cars, etc., scattered in different directions not only show that these forces moved in opposite directions, but that they were moved in opposite directions at the same time. The latter condition must have existed, for there is no other explanation to account for the plain evidence of the existence of the twisting or cyclonic force to which the fragments of cars, car irons, axles, etc., had been subjected.

As this display of forces moving in opposite directions is less noticeable in the smaller explosions, it appears that the velocity and power of the inrush of air is proportionate in a measure to the speed and intensity of the explosion itself.

The unchecked frequency of dust explosions in non-gaseous mines in recent years, and right up to the present time, shows that the remedies for their prevention, so far proposed and tried in this country, have proved entirely inadequate. I believe the principal reason, to account for the unsatisfactory and disappointing results in this respect, is that our

efforts so far have been mainly in the wrong direction. We have been endeavoring to provide remedies to subdue the effects of these explosions when we should have tried to get at the root of the evil by first attempting to eradicate their primary cause.

If it is good strategy in war to find the point of greatest weakness in the enemy's lines and then attack that point, so it is good sense that in our efforts to stop explosions, we should determine first their weakest spot, and then concentrate our attack in that direction. All attempts to prevent the occurrence of dust explosions in non-gaseous mines by increasing the air volume in them have failed and will continue to fail, for a conflagration cannot be subdued by an increased admission of air. If we desire to accomplish prevention through the manipulation of the mine air, we must go to the other extreme and make it so foul that it cannot possibly sustain combustion. A year or two ago somebody proposed as a preventive measure the filling of a mine just before firing time with black damp, artificially induced, the shots to be fired by electricity and the black damp afterwards to be removed by brisk ventilation. Dust explosions could be prevented in that manner, but the remedy is useless, because its practical application is out of the question.

The efforts to prevent these explosions through the partial removal of the dry dust from the mine workings and through sprinkling have proved also unsuccessful. Sprinkling the dust, even if the work is done systematically and with care, cannot be relied upon as a preventive; actual experience has proved this fact. The dust tests made in the presence of the jury which investigated the Monogah disaster, showed that the moist condition of the dust can have little, if any, influence in checking the explosion's progress. In any event, and especially if the views expressed in this article regarding the inrush of air at the beginning of or during an explosion are accepted, it may be definitely stated that nothing short of complete inundation of the dust on the floor of the mine workings promises to give a reasonable measure of protection, but the impossibility or extreme difficulty of accomplishing this in naturally dry mines makes the remedy in such mines unavailable.

But there is a weak spot in the makeup of these explosions, and, I believe, a concentrated and determined attack on it will demonstrate that there is a practical way of prevention. That weak spot is the use of flaming explosives, especially blasting powder. Their use has been primarily responsible for all explosions that have occurred in non-gaseous mines in the past, and it should and can be discontinued in all mines where the coal is high in volatile matter and the dust therefore a dangerous element. The removal of the main cause, together with such other additional safeguards as may be provided, will certainly make the future occurrence of a dust explosion in a non-gaseous mine a very remote possibility.

APPANOOSE COUNTY.

During the year ending June 30, 1907, sixty-four mines having railroad connection and twenty-nine mines without such connection were operated in Appanoose county. Two small mines near Mystic were abandoned during the year, leaving the number of mines for the year ending June 30, 1908, sixty-two with railroad connection and twenty-nine without. The

latter are operated largely to supply the home demand for coal, although a number of them ship part of their output. All the mines are working the same coal seam, averaging about thirty inches in thickness. The coal is mined by the longwall and the room and pillar method. Of the sixty-two shipping mines, forty-three use the former method and nineteen the latter.

During the year ending June 30, 1907, the mines of Appanoose county furnished employment to 3,888 persons and the coal production amounted to 1,157,967 tons, exceeding the production of the previous year by over 100,000 tons. The record of a steady increase in tonnage in recent years was not maintained, however, during the year ending June 30, 1908, for in that year the coal production of the county amounted to 1,107,806 tons, a decrease from the output of the previous year of 50,161 tons. A large number of the mines worked only a little more than half time, and but a few exceeded two-thirds time by a narrow margin. This shows that the yearly coal production of Appanoose county could be readily and materially increased by working the mines full time and without the increase in the present number of mines or the addition of extra equipment.

As in former years in point of safety the Appanoose county mines continue to compare decidedly favorably with other mining localities in this state or outside of it. The yearly fatality rate during the last two years was less than one for each thousand men employed.

As far as mine ventilation is concerned it can be said that the great majority of the mines are in fairly satisfactory condition in this respect, and that there is a somewhat slow but steady improvement in this direction noticeable in nearly all of them.

SUMMARY OF CONDITIONS IN THE APPANOOSE COUNTY MINES.

Scandinavian Coal Company, No. 2, located at Plano. The method of working this mine has been changed from room and pillar to longwall, and the results have been satisfactory. It is unfortunate that on account of the inadequate demand for coal, this valuable property can only be operated on a very limited scale. The mine and its equipments are in satisfactory condition.

Mystic Block Coal Company No. 3. A slope mine located west of Brazil. It is not extensively operated, less than twenty men being employed. It is in fair condition.

Walnut Block Coal Company, located at Brazil. Some work has been done on the main road and the mine has been sufficiently improved so a larger working force can be employed than before.

Phoenix Coal Company. Mine located at Brazil. It is worked now on the longwall system and is in fair condition.

Centerville Block Coal Company No. 5. A slope mine at Brazil, ventilated by a furnace. Some difficulty has been experienced to ventilate it properly and provisions will be made to bring about an improvement in that direction.

Peacock Coal Company. A slope mine located at Brazil. It is in good condition.

Oriental Coal Company No. 1. A slope mine located southeast of Brazil. Furnace ventilation. The mine is in fair condition.

Perfection Block Coal Company. A slope mine south of Brazil. Better outside equipments have been provided and the mine has been somewhat improved.

Sunshine Coal Company. A shaft mine three miles west of Centerville. It is now worked by the longwall method. The equipments are in good order. A fan has been erected recently and the ventilation of the mine is satisfactory. The mine is in good condition.

Centerville Block Coal Company No. 3. Mine in fair condition as to equipments. Ventilation not satisfactory.

Anchor Coal Company No. 1. A shaft mine located south of Centerville. As it proved difficult to ventilate the north workings satisfactorily under existing conditions, the management concluded to stop them. It is probable that a shallow shaft will be sunk to facilitate the ventilation of the south workings. The mine equipments are in good order.

Scandinavian Coal Company No. 1. The ventilation of the mine has been improved. Equipment and safety appliances satisfactory.

Dewey Coal Company. A shaft mine located east of Centerville. On the 5th of February, 1908, the engine house and boiler room were destroyed by fire. Substantial buildings have been erected and a first motion hoisting engine has taken the place of the geared engine formerly in use. In order to better the ventilation and facilitate the handling of the coal output, the system of working the mine should be changed. Safety appliances satisfactory.

Consolidated Block Coal Company. A slope mine located southwest of Cincinnati. It is now ventilated by a fan and with proper care there should be no difficulty about keeping the mine in satisfactory condition.

Mendota Coal & Mining Company, Albert Mine. A shaft mine located west of Cincinnati. The method of working the mine has been changed from longwall to room and pillar. It is in satisfactory condition.

Armstrong Coal Company. A shaft mine located west of Cincinnati. The mine has now railroad connection and is in good condition. A fan will soon be erected.

Mendota Coal & Mining Company, Appanoose Mine. A shaft mine located at Cincinnati. The mine is not worked extensively and is in satisfactory condition.

Domestic Coal Company. A shaft mine located north of Cincinnati. It has no railroad connection, but considerable coal is shipped. The mine is in satisfactory condition.

Thistle Coal Company No. 1. A shaft mine east of Cincinnati. It was not worked last year, but may be started up again in the near future.

Thistle Coal Company No. 2. A shaft mine east of Cincinnati. Some work has been done to improve its ventilation.

Thistle Coal Company No. 3. A shaft mine east of Cincinnati. It is in satisfactory condition.

Exline Coal Company No. 1. A shaft mine located west of Exline. In fair condition.

Exline Coal Company No. 2. A shaft mine to the east of No. 1, and connected with the latter. The workable territory of the mine is at present limited on account of an extensive fault to the south and east. At the last inspection the ventilation was unsatisfactory and provisions were made for its improvement.

Iowa Block Coal Company. A shaft mine located at Exline. It is in good condition.

White Oak Coal Company. A shaft mine without railroad connection, located north of Exline. It is in fair condition.

C. B. and K. C. Coal Company has acquired the Royal mine, east of Exline. The mine and equipments have been greatly improved and work in that direction will be continued.

Centerville Block Coal Company No. 2. A shaft mine located at Numa. Additional territory has been acquired by the management adjoining its holdings on the west. It has been difficult to develop the workings on the west, but satisfactory progress has been made. The ventilation of the mine has been appreciably improved. Work to reach an old shaft to the north of the mine is still going on.

Numa Block Coal Company No. 1. A shaft mine at Numa. It produced more coal last year than any other mine in Appanoose county, and is in satisfactory condition.

Prairie Block Coal Company. A shaft mine four miles south of Centerville. In fair condition.

Anchor Coal Company No. 3. A shaft mine located at Shawville. The hoisting apparatus has been improved and the mine is in fair condition.

Anchor Coal Company No. 2. A shaft mine located north of No. 3. The ventilation of the east workings was unsatisfactory, but the difficulty has been overcome. The method of working the mine should be changed in order to improve the ventilation in the future.

Carbon Block Coal Company. A shaft mine south of Centerville, formerly operated by the Manufacturers Coal and Coke Company. The ventilation in parts of the mine was unsatisfactory, but the necessary openings have been made to improve the situation. The mine is now worked on the longwall plan and is in fair condition.

Center Coal Company. A shaft mine south of Centerville. The tipple has been raised and improved, equipments are in good order, and the mine is in satisfactory condition.

Centerville Block Coal Company No. 1. A shaft mine east of Centerville. An additional air shaft has recently been completed and a fan will be erected at an early date.

Centerville Block Coal Company No. 10. A shaft mine located east of No. 1 and connected with it. New track scales have been put in and other outside improvements have been made. The mine is in fair condition. Arrangements have been made to assure the future satisfactory ventilation of the mine.

Centerville Block Coal Company No. 9. A shaft mine west of Centerville. It is in fair condition.

Rosebrook Coal Company. A new shaft mine located at Rosebrook on the Iowa Central Railroad. The second opening has been made, and other improvements will soon be under way. The mine is in satisfactory condition.

Manufacturers Coal and Coke Company No. 10. A slope mine with its opening in Missouri. But little work was done in this mine last year. The bottom of slope was ordered timbered and this work has been done. The workings in Iowa are in fair condition.

Consumers Coal Company. A shaft mine located at Jerome. It is in good condition.

Big Jo Coal Company No. 1. A shaft mine located at Harkes. The stairway in the escape shaft was ordered strengthened. The ventilation in some parts of the mine was not satisfactory, but conditions in this respect have been improved.

Big Jo Coal Company No. 2. A shaft mine located northeast of No. 1, and operated by the Big Jo Coal Company under lease. This mine needs an additional air shaft and the management has been advised to that effect.

Mystic Block Coal Company No. 22. A shaft mine located at Diamond. Considerable difficulty was experienced to get the escape road in available condition. At the last inspection it was found in fair condition. The east and west workings should be connected as soon as possible, in order to improve the ventilation of the mine.

Peerless Coal Company No. 5. A shaft mine west of Mystic. Although the mine is ventilated by the use of two furnaces, it requires considerable care to keep all its parts in satisfactory sanitary condition. It is probable that this difficulty will be overcome in the near future.

Egypt Coal Company. A drift mine located west of Mystic. It is very difficult under existing conditions to keep the mine satisfactorily ventilated. A new connection with the mine opening west will give temporary improvement. It is entirely probable that the system of ventilating this mine will have to be changed next year.

Peerless Coal Company No. 1. A drift mine located at Mystic. It is connected with Mine No. 2, operated by the same company, and is ventilated by No. 2 fan. The mine is in satisfactory condition.

Peerless Coal Company No. 2. A shaft mine located west of No. 1. Fan ventilation has taken the place of furnace ventilation, and the sanitary condition of the mine is now very satisfactory. The mine is in good condition.

Mystic Coal Company No. 1. A small slope mine west of Mystic. Only a few men are employed.

Mystic Coal Company No. 2. A shaft mine west of Mystic. It is in fair condition.

Mystic Coal Company No. 3. A slope mine west of No. 2 and connected with it. Ventilation provided by No. 2 fan. Mine in satisfactory condition.

Acken Coal Company No. 1. A slope mine west of Mystic. Workings in fair condition.

Acken Coal Company No. 2. A shaft mine west of No. 1 and connected with it. Both mines are ventilated by a fan located at No. 2. Mine in fair condition.

Mystic Block Coal Company No. 29. A shaft mine located at Mystic. It is in fair condition.

Peerless Coal Company No. 6. A drift mine at Mystic. In fair condition.

Mystic Block Coal Company No. 12. A slope mine east of Mystic. A shaft has been sunk and the slope will not be used much longer. Grading for the track leading to the shaft is about completed. The mine is in good condition.

Winnifred Coal Company. A slope mine east of Mystic. Tail rope haulage will be used to carry the coal to the tipple. Mine in fair condition.

Beggs Coal Company. A shaft mine east of Mystic. The mine is worked to a limited extent only.

Elgin and Barrett Coal Company. A slope mine east of Mystic. An additional air shaft must be sunk soon.

Inter-Ocean Coal Company. A shaft mine east of Mystic formerly operated by Orr Bros. Little work has been done at this mine during the last year. The mine will be considerably improved later on in order to work it on a more extensive scale.

Mystic Block Coal Company No. 5. A shaft mine located at Clarkdale. It is in good condition.

Fowler & Wilson Coal Company. A shaft mine at Rathbun, formerly operated by the Star Coal Company. The mine is in good condition.

Unity Block Coal Company. A slope mine located at Darbyville. It is probable that the mine will soon change ownership. If it does much needed improvements will be provided.

The local mines of Appanoose county were kept in reasonably safe condition during the last two years, and their sanitary condition was generally satisfactory.

MINES IN APPANOOSE COUNTY, THEIR LOCATION, ETC.

Corporation, Firm or Operator	Mine number	Location of Mine	Railroad Connection, If Any	Kind of Opening	System of Working	Power used	Means of Ventilation
Scandinavian Coal Company	2	Plano	K. & W.	Shaft	Room and pillar	Steam	Fan
Mystic Block Coal Company	3	West of Brazil	K. & W.	Shaft	Room and pillar	Steam	Fan
Winnifred Coal Company		Brazil	K. & W.	Slope	Long wall	Electry	Furnace
Phoenix Coal Company		Brazil	K. & W.	Drift	Long wall	Horse	Furnace
Centerville Block Coal Company	5	Brazil	K. & W.	Drift	Long wall	Steam	Furnace
Tipton Co-Operative Coal Company		Brazil	K. & W.	Slope	Long wall	Steam	Furnace
Peacock Coal Company	1	South of Brazil	K. & W.	Drift	Long wall	Horse	Furnace
Oriental Coal Company	2	South of Brazil	K. & W.	Slope	Long wall	Steam	Fan
Perfection Block Coal Company		1 mile southeast of Brazil	K. & W.	Slope	Long wall	Steam	Fan
Sunshine Coal Company		3 miles west of Centerville	K. & W.	Shaft	Long wall	Steam	Fan
Centerville Block Coal Company	3	West of Centerville	K. & W. and Iowa Cent.	Shaft	Room and pillar	Steam	Fan
Anchor Coal Company	1	Centerville	K. & W.	Shaft	Room and pillar	Steam	Fan
Scandinavian Coal Company	1	Centerville	K. & W.	Shaft	Room and pillar	Steam	Fan
Dewey Coal Company		1½ miles southeast of Centerville	C., B. & K. C.	Shaft	Room and pillar	Steam	Fan
Cincinnati Coal and Mining Company		3 miles southwest of Cincinnati	C., B. & K. C.	Shaft	Room and pillar	Steam	Furnace
Consolidated Block Coal Company		1½ miles southwest of Cincinnati	C., B. & K. C.	Shaft	Long wall	Steam	Fan
Mendota Coal and Mining Company	2	West of Cincinnati	C., B. & K. C.	Shaft	Long wall	Steam	Fan
Armstrong Coal Company	1	Cincinnati	C., B. & K. C.	Shaft	Long wall	Steam	Fan
Mendota Coal and Mining Company		West of Cincinnati	C., B. & K. C.	Shaft	Long wall	Steam	Fan
Thistle Coal Company	22	Southeast of Cincinnati	C., B. & K. C.	Shaft	Long wall	Steam	Fan
Thistle Coal Company	1	1 mile east of Cincinnati	C., B. & K. C.	Shaft	Long wall	Steam	Fan
Thistle Coal Company	23	1½ miles east of Cincinnati	C., B. & K. C.	Shaft	Room and pillar	Steam	Fan
Exline Coal Company	1	West of Exline	C., B. & K. C.	Shaft	Room and pillar	Steam	Fan
Exline Coal Company	2	West of Exline	C., B. & K. C.	Shaft	Room and pillar	Steam	Fan
Exline Coal Company		Exline	C., B. & K. C.	Shaft	Room and pillar	Steam	Fan
Jo. B. & K. C. Coal Company		Northeast of Exline	C., B. & K. C.	Slope	Room and pillar	Steam	Furnace
Centerville Block Coal Company	9	West of Centerville	Iowa Cent.	Shaft	Room and pillar	Steam	Fan
Numa Block Coal Company	2	Numa	C., R. I. & P.	Shaft	Long wall	Steam	Fan
Peacock Block Coal Company	1	4 miles south of Centerville	C., R. I. & P.	Shaft	Long wall	Steam	Fan
Anchor Coal Company	3	3 miles south of Centerville	C., R. I. & P.	Shaft	Long wall	Steam	Fan
Anchor Coal Company	29	2 miles south of Centerville	C., R. I. & P.	Shaft	Room and pillar	Steam	Fan
Center Coal Company		South of Centerville	C., R. I. & P.	Shaft	Room and pillar	Steam	Fan

MINES IN APPANOOSE COUNTY, THEIR LOCATION, ETC.—CONTINUED.

Corporation, Firm or Operator	Mine number	Location of Mine	Railroad Connection, if Any	Kind of opening	System of Working	Power used	Means of ventilation
Centerville Block Coal Company	1	East of Centerville	C., R. I. & P.	Shaft	Room and pillar	Steam	Fan
Centerville Block Coal Company	10	East of Centerville	C., R. I. & P.	Shaft	Room and pillar	Steam	Fan
Consumers Coal Company		Jerome	C., M. & St. P	Shaft	Long wall	Steam	Fan
Big Jo Coal Company	1	1¾ miles east of Jerome	C., M. & St. P	Shaft	Long wall	Steam	Fan
Big Jo Coal Company	2	3 miles southwest of Mystic	C., M. & St. P	Shaft	Long wall	Steam	Fan
Mystic Block Coal Company	29	Diamond	C., M. & St. P	Shaft	Long wall	Steam	Fan
Peerless Coal Company	5	West of Mystic	C., M. & St. P	Shaft	Long wall	Steam	Furnace
Egypt Coal Company		West of Mystic	C., M. & St. P	Shaft	Long wall	Steam	Furnace
Peerless Coal Company	1	Mystic	C., M. & St. P	Drift	Long wall	Horse	Fan
Acken Coal Company	1	West of Mystic	C., M. & St. P	Drift	Long wall	Steam	Fan
Acken Coal Company	2	West of Mystic	C., M. & St. P	Slope	Long wall	Horse	Fan
Peerless Coal Company	2	West of Mystic	C., M. & St. P	Shaft	Long wall	Steam	Fan
Mystic Coal Company	2	West of Mystic	C., M. & St. P	Shaft	Long wall	Steam	Fan
Mystic Coal Company	1	West of Mystic	C., M. & St. P	Shaft	Long wall	Mule	Furnace
Mystic Coal Company	3	West of Mystic	C., M. & St. P	Shaft	Long wall	Horse	Furnace
Mystic Block Coal Company	29	Mystic	C., M. & St. P	Slope	Long wall	Steam	Fan
Peerless Coal Company	6	Mystic	C., M. & St. P	Slope	Long wall	Steam	Furnace
Peerless Coal Company	3	Mystic	C., M. & St. P	Drift	Long wall	Horse	Furnace
Mystic Block Coal Company	12	Mystic	C., M. & St. P	Drift	Long wall	Horse	Furnace
Winnifred Coal Company		East of Mystic	C., M. & St. P	Shaft	Long wall	Steam	Furnace
Beggs Coal Company		½ miles east of Mystic	C., M. & St. P	Slope	Long wall	Horse	Furnace
Elgin & Barrett Coal Company		½ miles east of Mystic	C., M. & St. P	Slope	Long wall	Steam	Furnace
Inter-Ocean Coal Company		½ miles east of Mystic	C., M. & St. P	Shaft	Long wall	Horse	Fan
Mystic Block Coal Company	5	Clarkdale	C., M. & St. P	Slope	Long wall	Steam	Fan
Star Coal Company		Rathbun	C., M. & St. P	Shaft	Long wall	Steam	Fan
Unity Block Coal Company		Darbyville	C., M. & St. P	Slope	Long wall	Steam	Furnace
Carbon Block Coal Company	30	South of Centerville	C., R. I. & P.	Shaft	Long wall	Steam	Fan
Domestic Coal Company		Cincinnati		Shaft	Room and pillar	Horse	Furnace
White Oak Coal Company		North of Exline		Shaft	Room and pillar	Horse	Furnace
Ira A. Guinn		Coal City		Drift	Room and pillar	Horse	Furnace
Walnut Grove Coal Company		North of Numa		Drift	Long wall	Horse	Furnace
J. R. Wright		South of Centerville		Shaft	Room and pillar	Horse	Furnace
J. Sears		South of Centerville		Drift	Room and pillar	Horse	Furnace
Wm. Smith		South of Centerville		Shaft	Room and pillar	Horse	Furnace
Citizens Coal Company		Centerville		Slope	Room and pillar	Horse	Furnace
Happy Coal Company		Centerville		Shaft	Room and pillar	Horse	Furnace
White Oak Coal Company		Centerville		Shaft	Room and pillar	Horse	Furnace
Monitor Coal Company		Centerville		Shaft	Room and pillar	Horse	Furnace
Star Coal Company		North of Centerville		Slope	Room and pillar	Horse	Furnace
Trio Coal Company		Northeast of Centerville		Slope	Room and pillar	Horse	Furnace
Rock Valley Coal Company		North of Centerville		Shaft	Room and pillar	Horse	Furnace
John Schrum		North of Centerville		Shaft	Room and pillar	Horse	Furnace
John Koontz		Mystic		Shaft	Room and pillar	Horse	Furnace
Ed McConville		Centerville		Shaft	Long wall	Horse	Furnace
Centerville Block Coal Company	8	Coal City		Shaft	Room and pillar	Horse	Fan
Manufacturers Coal & Coke Company	10	Centerville	I. & St. L.	Shaft	Room and pillar	Steam	Fan

MONROE COUNTY (PART).

The coal industry in the part of Monroe county included in this district remains in prosperous condition. While the amount of coal produced during the year ending June 30, 1908, was not as great as that of the preceding year, it was considerably greater than the amount of coal produced in any year prior to that ending June 30, 1907. The principal mines worked on an average of 250 days during the year ending June 30, 1907, and 251 days during last year.

The Hilton mine operated by the Whitebreast Fuel Company was abandoned in 1907. The Albia Coal Company has opened a shaft mine south of Albia which is now in successful operation.

SUMMARY OF CONDITIONS OF THE MINES IN THE COUNTY.

Smoky Hollow Coal Company, Mine No. 6. A slope mine located about four miles southeast of Hynes. It is in satisfactory condition. As the mine has been extensively worked for a number of years the workings are now about one and one-half miles distant from the slope mouth. While the requirements of the law relating to escapes and traveling ways are fully complied with, it is very probable that an additional air and escape shaft will be sunk near the head of the workings. It is but due the management of the Smoky Hollow mines to say that it has always shown an earnest desire to put and keep its mines in reasonably safe and satisfactory sanitary condition. The results of this care are shown by the comparatively very low death rate and the great amount of coal produced for each life lost. During the last six years the average yearly death rate has been 1.3 per 1,000 persons employed, and the amount of coal produced for each life lost was 423,250 tons. This record will compare very favorably with the much quoted records of the mining countries in Europe.

Smoky Hollow Coal Company, Mine No. 7. A slope mine located west of No. 6. It is in satisfactory condition.

The Smoky Hollow Coal Company will probably prepare this year for the opening of No. 8 mine.

Wapello Coal Company, Mine No. 3. A shaft mine located west of Hiteman. It is probable that the north workings will be abandoned in the near future. The mine is in satisfactory condition.

Wapello Coal Company, Mine No. 4. A shaft mine located about three miles northwest of Hiteman. In good condition.

Mine No. 5 will probably be opened this year.

Phillips Fuel Company, Mine No. 6. Tailrope haulage has been installed. The ventilation of the mine has been improved. Considerable

care is required to keep the mine in satisfactory condition on account of a squeeze slowly spreading over a part of the mine.

Hocking Coal Company, Mine No. 2. A shaft mine located east of Hocking. The east side of the mine will soon be worked out and unless additional territory can be developed on the west side, the mine may be abandoned by next spring.

Hocking Coal Company, Mine No. 3. A shaft mine located east of No. 2. The mine is carefully managed and is in good condition.

Arrangements are under way to open Mine No. 4.

Albia Coal Company. A shaft mine located south of Albia. A new mine equipped in compliance with the law. Air and escape shaft completed. Ventilation by fan.

White Ash Coal Company. A slope mine located south of Avery. A tramway to Avery has been built and the management intends to use mechanical haulage to transport the coal to the railroad siding in Avery. The slope needs widening and re-timbering in parts. The workings are in satisfactory condition.

Star Coal Company. A shaft mine located northwest of Albia. The south workings of the mine were abandoned last winter on account of fire, and the efforts to reopen that part of the mine have so far proved futile. If the development of the west side turns out unsatisfactory the mine will probably be abandoned.

The National Union Coal Company is sinking a shaft southwest of Hiteman.

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

Corporation, Firm or Operator	Mine number	Location of Mine	Railroad Connection, if Any	Kind of opening	System of working	Power used	Means of ventilation
Wapello Coal Company	3	1 mile west of Hiteman	C., B. & Q.	Shaft	Room and pillar	Steam	Fan
Wapello Coal Company	4	3 miles northwest of Hiteman	C., B. & Q.	Shaft	Room and pillar	Steam	Fan
Smoky Hollow Coal Company	5	4 miles southeast of Hynes	C., B. & Q.	Slope	Room and pillar	Steam	Fan
Smoky Hollow Coal Company	7	4 miles southeast of Hynes	C., B. & Q.	Slope	Room and pillar	Steam	Fan
Phillips Fuel Company	8	West of Baxter	C., M. & St. P.	Shaft	Room and pillar	Steam	Fan
Hocking Coal Company	2	Southeast of Hocking	Iowa Cent.	Shaft	Room and pillar	Steam	Fan
Hocking Coal Company	3	2½ miles south of Albia	Iowa Cent.	Shaft	Room and pillar	Steam	Fan
Star Coal Company		Northwest of Albia	C., B. & Q.	Shaft	Room and pillar	Steam	Fan
White Ash Coal Company		South of Avery	C., B. & Q.	Slope	Room and pillar	Steam	Fan
Albia Coal Company		South of Albia	Iowa Cent.	Shaft	Room and pillar	Steam	Fan

LUCAS COUNTY.

The prediction made in the 1906 report that in all probability there would be a future decrease in the amount of coal produced in Lucas county has been verified. Notwithstanding the re-opening of the Big Hill mine at Lucas the coal output of the county during the year ending June 30, 1907, was only 126,579 tons. There was still a further reduction during the year ending June 30, 1908, for in that year only 74,288 tons of coal were produced. This marked decrease was due to the closing down of the Big Hill mine in 1907, and to the abandonment of the Cleveland mine on April 1, 1908. This leaves Lucas county at present without a mine doing a shipping business.

It is not probable, however, that these conditions will last long. Extensive prospecting for coal has been done in the county for a number of years and is still going on, large tracts of coal land have been acquired by mining corporations and their development will not be much longer delayed.

Besides a few small local mines, working the upper coal measure, there is now only one mine in the county working the lower coal seam. This is the Inland Mine, northeast of Chariton. It is one of the best coal properties in Iowa, and the best developed mine, not having railroad connection, ever opened in the state. It is a conservative statement that this mine can produce readily 1,000 tons of coal daily within a few months after shipping facilities are provided and the permanent equipments are placed.

The temporary break in the coal industry of Lucas county will be of short duration, and it can be confidently expected that within a few years this county will stand very near the head of the list of the coal producing counties of Iowa and that it will stay there for many years to come.

MINES IN LUCAS COUNTY, THEIR LOCATION, ETC.

Corporation, Firm or Operator	Mine number	Location of Mine	Railroad Connection, If Any	Kind of opening	System of Working	Power used	Means of ventilation
Whitebreast Fuel Company	4	Cleveland	C., B. & Q.	Shaft	Room and pillar	Steam	Fan
Inland Fuel Company		10 miles northeast of Chariton		Shaft	Room and pillar	Steam	Fan
Skidmore Bros.		Northeast of Lucas		Shaft	Long wall	Horse	Furnace

WAYNE COUNTY.

Nearly all the coal produced at present in Wayne county comes from the two mines at Seymour, operated by the Numa Block Coal Company. The Big Jim Mine, located on the Chicago, Milwaukee and St. Paul Railroad, has produced more coal per annum in recent years than any other mine in the Appanoose-Wayne coal field. Working full time the mine can produce easily 100,000 tons of coal per year. The mine is equipped with first motion engines, steam dirt dump and box car loader. It is in satisfactory condition. The Sunshine mine is located on the Chicago, Rock Island & Pacific Railroad. For some time the ventilation of the mine has been unsatisfactory, and to remove the difficulty, and at the same time to provide a more available escape, the management was requested to sink an additional air and escape shaft. This work has been undertaken. A fan will be erected at the new shaft.

The local mines are located in the vicinity of Seymour and south of Confidence. They are in fairly satisfactory condition.

MINES IN WAYNE COUNTY, THEIR LOCATION, ETC.

Corporation, Firm or Operator	Mine number	Location of Mine	Railroad Connection, If Any	Kind of opening	System of Working	Power used	Means of ventilation
Numa Block Coal Company	2	1 mile east of Seymour	C. M. & St. P.	Shaft	Long wall	Steam	Fan
Numa Block Coal Company	3	Seymour	C., R. I. & P.	Shaft	Long wall	Steam	Fan
L. Ely	—	North of Seymour		Shaft	Long wall	Horse	Furnace
Carey Bros.	—	4 miles southwest of Seymour		Shaft	Long wall	Steam	Furnace
L. K. Edwards	—	4 miles south of Confidence		Shaft	Long wall	Steam	Furnace
Jos. Hayhurst	—	3½ miles south of Confidence		Shaft	Long wall	Horse	Furnace
John Hayhurst	—	South of Confidence		Shaft	Long wall	Horse	Furnace
L. Frye	—	South of Confidence		Shaft	Long wall	Steam	Fan

TAYLOR COUNTY.

Coal mining in Taylor county is now almost entirely confined to New Market and vicinity. Six mines are at present operated there, three of them having switches off the Burlington railroad. The coal is reached by shafts, the coal seam is about sixteen inches thick and is worked longwall.

No accident of a serious nature occurred in any of these mines in the last two years.

During the year ending June 30, 1907, the mines of Taylor county produced 15,951 tons, and during the year ending June 30, 1908, the output amounted to 13,861 tons.

MINES IN TAYLOR COUNTY, THEIR LOCATION, ETC.

Corporation, Firm or Operator	Mine number	Location of Mine	Railroad Connection, if Any	Kind of opening	System of Working	Power used	Means of ventilation
Union Coal Company		East of New Market	C., B. & Q.	Shaft	Long wall	Horse	Furnace
Campbell Coal Company	1	East of New Market	C., B. & Q.	Shaft	Long wall	Horse	Furnace
Campbell Coal Company	2	East of New Market		Shaft	Long wall	Horse	Furnace
Wm. Browning		East of New Market	C., B. & Q.	Shaft	Long wall	Horse	Furnace
N. Baxter		2 miles east of New Market		Shaft	Long wall	Horse	Furnace
W. F. Luellen		2 miles east of New Market		Shaft	Long wall	Horse	Furnace

PAGE COUNTY.

During the year ending June 30, 1907, the three mines located west of Clarinda and the one located near Coin produced 15,981 tons of coal, during the year ending June 30, 1908, these mines produced 14,045 tons.

The coal seam worked in Page county is thin, averaging less than eighteen inches in thickness. Some of the shafts are of considerable depth, the deepest is located near Coin and reaches the coal at 230 feet. All the mines are fairly equipped, two using steam power for hoisting. The mines are reasonably safe and generally in satisfactory sanitary condition.

It appears that the reasonably safe conditions existing at the working face has made some miners extremely careless about protecting themselves properly against injury or death. A striking case of such carelessness occurred in the Pearson and Maley mine west of Clarinda on February 21, 1908, and resulted in the death of two miners, one of them having worked in the mines of the county for many years. A personal inspection of the place in the mine where the accident occurred, showed that these two men were killed through absolute and gross carelessness on their part.

On the 10th of March, 1908, the Coin Coal Company was notified that a second opening must be made and other safeguards provided to protect the men working in the mine. On April 1st I was advised that the sinking of the second shaft was under way.

MINES IN PAGE COUNTY, THEIR LOCATION, ETC.

Corporation, Firm or Operator	Mine number	Location of Mine	Railroad Connection, if any	Kind of opening	System of Working	Power used	Means of ventilation
Johnston & Company		2 miles west of Clarinda		Shaft	Long wall	Steam	Furnace
Pearson & Maley		West of Clarinda		Shaft	Long wall	Horse	Furnace
J. Mensall	1	2 miles southwest of Clarinda		Shaft	Long wall	Horse	Furnace
Coin Coal Company		Coin		Shaft	Long wall	Steam	Jet

ADAMS COUNTY.

During the year ending June 30, 1907, Adams county produced 10,490 tons of coal, while during the year ending June 30, 1908, 17,760 tons were produced. A little coal has been shipped from the mines near Nodaway, but as none of the mines in the county have railroad connection, almost the entire output is sold in the home market.

The coal seam averages about sixteen inches in thickness, is reached by shallow shafts and is worked longwall. The mines are of small extent and mining is done under reasonably safe conditions. The sanitary condition of the mines is generally satisfactory.

The principal mining centers are at Nodaway and Carbon. At the latter a number of new openings are under way to take the place of some that have recently been abandoned.

MINES IN ADAMS COUNTY, THEIR LOCATION, ETC.

Corporation, Firm or Operator	Mine number	Location of Mine	Railroad Connection, if Any	Kind of opening	System of Working	Power used	Means of Ventilation
M. Jones		Carbon		Shaft	Long wall	Horse	Furnace
J. F. Barth		Carbon		Shaft	Long wall	Horse	Furnace
J. F. Barth		Carbon		Shaft	Long wall	Horse	Furnace
Henry Hyde	2	West of Carbon		Shaft	Long wall	Horse	Furnace
R. N. Hathaway		West of Carbon		Shaft	Long wall	Horse	Furnace
Smith & Tindall		Carbon		Shaft	Long wall	Horse	Furnace
Smith & Dixon		Northwest of Carbon		Shaft	Long wall	Horse	Furnace
H. T. Dunham		Briscoe		Shaft	Long wall	Horse	Furnace
Doherty & Son		Northwest of Nodaway		Shaft	Long wall	Horse	Furnace
F. Well		Northwest of Nodaway		Shaft	Long wall	Horse	Furnace

LIST OF CORPORATIONS, FIRMS AND INDIVIDUALS OPERATING MINES IN THE FIRST DISTRICT, THEIR POSTOFFICE ADDRESS, NUMBER OF MINES OPERATED BY THEM IN THE DISTRICT, AND SHIPPING FACILITIES, IF ANY.

Corporation, Firm or Individual	Address	Number of mines	Shipping Facilities
Scandinavian Coal Company	Centerville	2	Keokuk & Western
Walnut Block Coal Company	Brazil	1	Keokuk & Western
Phoenix Coal Company	Brazil	1	Keokuk & Western
Centerville Block Coal Company	Centerville	7	Keokuk & Western, C., R. I. & P., and Iowa Central
Peacock Coal Company	Brazil	1	Keokuk & Western
Oriental Coal Company	Centerville	2	Keokuk & Western
Perfection Block Coal Company	Ottumwa	1	Keokuk & Western
Sunshine Coal Company	Centerville	1	Keokuk & Western
Anchor Coal Company	Centerville	3	Keokuk & Western, and C., R. I. & P. Ry.
Dewey Coal Company	Centerville	1	Keokuk & Western
Consolidated Block Coal Co.	Cincinnati	1	Chicago, Burlington and Kansas City
Mendota Coal & Mining Company	Cincinnati	2	Chicago, Burlington and Kansas City
Armstrong Coal Company	Cincinnati	1	Chicago, Burlington and Kansas City
Thistle Coal Company	Cincinnati	3	Chicago, Burlington and Kansas City
Exline Coal Company	Exline	2	Chicago, Burlington and Kansas City
Iowa Block Coal Company	Exline	1	Chicago, Burlington and Kansas City
C. B. and K. C. Coal Company	Exline	1	Chicago, Burlington and Kansas City
Numa Block Coal Company	Seymour	3	C., R. I. & P., and C., M. & St. Paul Ry.
Prairie Block Coal Company	Centerville	1	C., R. I. & P. Ry.
Center Coal Company	Centerville	1	C., R. I. & P. Ry.
Manufacturers Coal & Coke Co.	Connelsville, Mo.	1	C., B. & Q. Railroad
Carbon Block Coal Company	Centerville	1	C., R. I. & P. Ry.
Consumers Coal Company	Cedar Rapids	1	C., M. & St. Paul Ry.
Big Jo Coal Company	Harkes	1	C., M. & St. Paul Ry.
Peerless Coal Company	Mystic	6	C., M. & St. Paul Ry.
Egypt Coal Company	Mystic	1	C., M. & St. Paul Ry.
Acken Coal Company	Mystic	2	C., M. & St. Paul Ry.
Mystic Coal Company	Mystic	3	C., M. & St. Paul Ry.
Mystic Block Coal Company	Mystic	5	C., M. & St. P. and K. & W
Winnifred Coal Company	Mystic	1	C., M. & St. Paul Ry.
Beggs Coal Company	Mystic	1	C., M. & St. Paul Ry.
Elgin & Barrett Coal Company	Mystic	1	C., M. & St. Paul Ry.
Inter-Ocean Coal Company	Mystic	1	C., M. & St. Paul Ry.
Fowler & Wilson Coal Company	Rathbun	1	C., M. & St. Paul Ry.
Unity Block Coal Company	Darbyville	1	C., M. & St. Paul Ry.
Domestic Coal Company	Cincinnati	1	C. B. & Kansas City Ry.
White Oak Coal Company	Exline	1	C. B. & Kansas City Ry.
Walnut Grove Coal Company	Numa	1	C., R. I. & P. Ry.
Ira A. Guinn	Dean	1	
Citizens Coal Company	Centerville	1	
Happy Coal Company	Centerville	1	
White Oak Coal Company	Centerville	1	

Corporation, Firm or Individual	Address	Number of mines	Shipping Facilities
Monitor Coal Company	Centerville	1	
Star Coal Company	Centerville	1	
Trio Coal Company	Centerville	1	
Rock Valley Coal Company	Centerville	1	
John Schrum	Centerville	1	
John Koonts	Centerville	1	
Ed McConville	Mystic	1	
Rosebrook Coal Company	Oskaloosa	1	Iowa Central Railway
Wapello Coal Company	Hiteman	2	C., B. & Q. Railroad
Smoky Hollow Coal Company	Avery	2	C., B. & Q. Railroad
Star Coal Company	Albia	1	C., B. & Q. Railroad
White Ash Coal Company	Avery	1	C., B. & Q. Railroad
Phillips Fuel Company	Ottumwa	1	C., M. & St. Paul Ry.
Albia Coal Company	Albia	1	Iowa Central Railway
Hocking Coal Company	Hocking	2	Iowa Central Railway
Inland Fuel Company	Chariton	1	
L. Blue	Sewal	1	
Carey Bros.	Seymour	1	
John Winger	Seymour	1	
L. Frye	Promise City	1	
John Hayhurst	Promise City	1	
Union Coal Company	New Market	1	C., B. & Q. Railroad
Campbell Coal Company	New Market	2	C., B. & Q. Railroad
Wm. Browning	New Market	1	C., B. & Q. Railroad
N. Easter	New Market	1	C., B. & Q. Railroad
Johnston & Company	Clarinda	1	
John Marshall	Clarinda	1	
Pearson & Maley	Clarinda	1	
Coin Coal Company	Coin	1	
M. Jones	Carbon	1	
J. F. Ruth	Carbon	1	
J. F. Wild	Carbon	1	
C. Dixon	Carbon	1	
H. Day	Nodaway	1	
Mason & Daugherty	Nodaway	1	
R. N. Hathaway	Nodaway	1	
F. Well	Nodaway	1	
H. K. Demirjean	Briscoe	1	

SECOND DISTRICT

LETTER OF TRANSMITTAL.

HON. ALBERT B. CUMMINS, Governor of Iowa:

SIR,—I submit herewith my first report as Inspector of Mines, covering a period of eighteen months' service, and furnish such data as was available, to include, from the six months' service of my predecessor, for the biennial period ending June 30th, 1908.

R. T. RHYS,

Inspector Second District.

In Memoriam

JAMES A. CAMPBELL, State Inspector of Mines of the second inspection district of Iowa, after an illness of ten months, caused by complication of diseases, died at his home, Ottumwa, Iowa, February 1, 1907.

Mr. Campbell was born in Warren county, Illinois, July 4, 1865. His parents, Mr. and Mrs. Ira G. Campbell, moved to Albia, Iowa, in 1868. He commenced to work in the mines when very young and was intimately connected with mining in one form or another nearly all his life. In the year 1885, he moved to Ottumwa, and resided there until his death.

May 19, 1894, he was appointed by Governor Jackson, as State Mine Inspector. April, 1896, he was reappointed to the same position by Governor Drake, and in 1898 and 1900 by Governor Shaw, and by Governor Cummins, May 3, 1904, and held the position until September 30, 1906, when failing health compelled him to resign. During his ten and one-half years of service as Inspector he made a very large circle of friends and acquaintances throughout the state. He was known to all to be a plain, practical man. Generous and sympathetic and fair in his official dealings between miners and operators. He is survived by his wife and three sons, his mother, two sisters and one brother.

REPORT OF THE SECOND DISTRICT.

The second inspection district includes the following counties: Monroe (part), Mahaska, Wapello, Marion, Keokuk, Van Buren, Davis, Warren, Adair and Jefferson.

There are 114 mines in operation in the district and their production for the biennial period ending June 30, 1908, was 4,741,151 tons of coal, and to produce this amount there were employed 3,047 miners, 1,053 inside employes and 445 outside employes, making a total of 4,545 men employed in and around the mines of the district.

I assumed the duties of inspector of the second district October 1, 1906, succeeding the late Mr. James A. Campbell.

Having filled an unexpired term of a few months as inspector of this district in the year 1904, the work and the mines were not wholly strange to me. This slight acquaintance with the territory and the willing assistance I received from the operators and miners and their officials made my duties easier and more agreeable to perform than it would have been otherwise, and I hereby most sincerely thank them all for their co-operation and the good will they have extended me.

The co-operation of the miners and operators has always been a source of help and pleasure to the inspector, but more so today in this state than ever before, for we find that in their joint agreement, known as the "Des Moines agreement," there are incorporated many things that tend to the safety, health and comfort of the miner that are not found in our mining laws. (1) Their agreement calls for the miner to keep his working place and the operator the entries as free from dust as practicable, and the entries shall be sprinkled as often as necessary to keep them in damp condition. (2) It prescribes what tamping material to be used, with rules and limitations. (3) It says that in all mines when men are going to and from their work at the regular starting and quitting time the company shall employ men at the top and bottom of the shaft, whose duty it shall be to attend the signal bells. (4) It recognizes the right and allows the miners the privilege of employing shotfirers. (5) It specifies the number of

hours that constitutes a day's work. (6) It says that the operator shall keep sufficient blankets, oils, bandages, etc., and suitable conveyance or stretchers readily available at each mine to properly care for and convey injured persons to their homes in case of accident. These and other agreements that could be named are not required by our mining laws at all and their enforcement rests with the miners and operators themselves. It is not my desire to say anything derogatory to our mining laws, but from what I have quoted above it is evident that they have not kept pace with the needs and the rapid progress of mining. They need to be strengthened and added to in many things and made clearer and more definite on many points.

ACCIDENTS.

Probably not in the history of coal mining in this country has coal mine accidents, their causes and prevention received as much attention than in the last few months. This undoubtedly is due to the constant increase in the number of accidents in our mines compared with the steady decrease of accidents in the mines of foreign countries and also to the series of great disasters that have of late taken place in several of our states that has awakened the sympathies of our people and created an earnest desire that they may, if possible, be prevented.

During the biennial period ending June 30, 1908, there occurred in and around the mines of the second inspection district 21 fatal and 61 non-fatal accidents. These accidents were due to the following causes:

Accidents Due to	Fatal	Non-Fatal
Fall of slate	11	25
Windy shot or shots	2	
After damps of dust explosions	1	
Premature explosion of shots	1	3
Run over by coal flat	1	
Fall of coal and rock	1	4
Caught between cage and side of shaft	1	2
Fell down shaft	2	
Run over by pit cars	1	14
Other causes		13
Total	21	61

To report that all the above were unavoidable accidents incident to the mining of coal would be erroneous, for it is evident from the testimonies given that about 40 per cent of them could have been prevented. Unhappily in the majority of cases they were due to the carelessness of the men themselves. I am not saying this with the thought that I am stating something new, but with the hope that I may emphasize what has been said many times before by the inspectors of this district and elsewhere—that if we are to have fewer casualties in our mines every mine worker must be made to realize that he himself has much to do to bring this to pass, by making it invariably his first work and to consider it always his most important duty to examine thoroughly the roof above him and to make and keep as far as he can his working place in a safe condition, regardless of the length of time this may take him to do so, the number of cars of coal he may miss, or the inconvenience the necessary timbers may give him to mine or load his coal. He needs to be constantly reminded that he must be to a large measure his own guard, as well as his "brother's keeper" and that no mining laws, rules or supervision, however perfect they may be, can wholly release him of the necessity of exercising the utmost care for his safety while working in the mine.

To report also that because 50 per cent of the accidents given above occurred by the falling of slate at the "face" or, in that part of the mine where the state law holds the miner, as one, responsible for the safety of the place under his control, does not mean to say that the operator had always done all that he could towards preventing the same, for it is evident from the information gathered concerning these accidents that had the operator through his mine foreman or his subordinate made a more frequent and systematic supervision of the working face, and exercised their authority regarding the safety of the same, unquestionably some of the accidents reported would not have occurred.

To the credit of the operator, be it said, that in many of the mines of the district men are assigned to see to it daily that all traveling and haulage roads are in a safe condition and the result is that accidents from fall of slate on them is a rare occurrence. It is to be regretted that this commendable practice of frequent and systematic inspection of the roof is confined practically to the traveling and haulage roads alone and that the working face receives only an occasional and irregular visit from the mine foreman or his subordinate. Knowing, as every operator does, that he has often in his employe men that do not exercise the same degree of prudence and good judgment for their personal safety as others, that some are habitually careless and sometimes reckless, and I may add, that at the present time there are employed in nearly

every mine through the district men who are limited in their experience as miners and even in their knowledge to speak and to understand the English language or the language of the boss, and knowing also that the working face is and always has been one of the most prolific sources of casualities, it certainly demands of the operator, and it should be given, the same frequent and systematic inspection of the roof as he is giving through his subordinates to the traveling and haulage roads. For the mine foreman to mark, or, show the miner his room and then leave him to take care of it, paying him only an occasional visit, and that perhaps only when invited by the miner to do so to settle a question of difficult work, is not conducive to safety nor good discipline. It is true, as stated above, that the miner, according to our state law, is "to securely prop or support the roof and entries under his control," but it is equally true that the mine official has not performed his whole duty by simply furnishing the miner with the necessary timber. He is to see that the work is promptly done. (* * * Or if any miner, workman or other person * * * shall neglect or refuse to obey any order given by the superintendent in relation to the safety of the mine in that part under his charge and control, he shall be punished by fine not exceeding one hundred dollars, or imprisonment in the county jail not exceeding thirty days." Sec. 2491).

At no time was a vigorous supervision of the face more necessary than it is today and at no time were conditions in this district more favorable for it to bring good results than at the present time; for in all the mines of the district that have been in operation one year they fire shots but once a day (at quitting time) which makes it possible and practical to carry on such inspections, and not until this part of the mine receives a more mutual and regular supervision and the miner made to comply with the mandates of these inspections so as to instill in him constantly a sense of personal care, can we expect casualties at the face to decrease.

VENTILATION.

Out of the total number of calls to this office 75 per cent are complaints regarding ventilation. Probably not a mine in the district, but what is amply equipped with fan or furnace to supply all the air necessary for the number of men employed and also but has more than the required amount entering the mine but unfortunately

not in all of them is it properly distributed and carried around the face.

Gladly acknowledging that there are mines in the district that are well ventilated and concerning these I have no criticism to make, only wishing there were more of them. But there are other mines where the ventilation is only fair and few where it is bad. These two classes of mines—the fair and the bad—are a source of continual trouble to the inspector and often a sore infliction upon the miner.

Every mine inspector that has held office in this state has urged from time to time for larger and less obstructive air courses, more substantially built stoppings and doors or overcasts and for an increased circulation of air at the face. Their efforts, with the aid of the miners, have met with a degree of success, for no one will dispute but what the ventilation of the mines on the whole is better today than it was twenty-five years ago; but there yet remains much to be done to bring about a higher standard and more efficient ventilation in a large number of our mines. No further proof of the above statement is needed than a visit to some of the mines of the district where can be seen neglected main air courses that are sometimes, in some places, dangerous and hard to travel on account of falls, with no provision left to remove the same, and when a fall occurs the best that can be done to it is to scatter and level it; or when timbering is needed the timbers have to be dragged a long distance over high falls, one stick at a time. Poor stoppings also can be found in abundance, causing the amount of air reaching the actual working face to not exceed one-third and sometimes not one-fourth of that produced by the ventilator, and often it is found to be below the quantity required by law and much less than the quantity which present day conditions require. No fair-minded mine foreman will deny but it would be economy as well as efficiency to keep the main air courses at least in good condition as the mine develops and to do away with the ordinary dirt stoppings in all those mines where the nature of the top and bottom are not conducive to bring creep or weight to pack them air tight, and build instead cemented board or sand stoppings.

In addition to small congested air courses, leaky constructed stoppings and doors, I am led to believe that there is another cause that is more or less responsible for poor ventilation in this district and that is the lack of definite knowledge among mine foremen and superintendents of the quantity of air and its velocity circulating through the mine. It is true that an anemometer is not ab-

solutely necessary to ventilate a mine, but it is undoubtedly a very convenient help to its possessor to ascertain accurately the amount of air circulating and an aid for him to properly distribute the same. To my personal knowledge not more than one-half dozen mines have for the use of their mine foremen and superintendents an anemometer and I am very sure not all of these instruments are in working condition; nor do I know of any mine official that has no anemometer, trouble himself about measuring the current in any other way than simply to notice its effect on the flame of his lamp and make a guess at the number of cubic feet traveling. So the number of mine foremen and superintendents in the district to my knowledge who can tell with a degree of certainty the amount of air produced by the ventilator and circulated through the different parts of the mine are less than one-half dozen. Such lack of definite knowledge cannot help but retard progress and improvement along this line. No mine at this late day should be ventilated by guess, but should be ventilated and supervised as far as possible by actual knowledge of existing conditions. Not only the mine foreman needs this definite knowledge, but he owes it to every underground worker; for he should no more make it always his practice to guess—no matter how good a guesser he may be—the lawful amount of air required for the number of men employed than he should attempt to guess the weight of the coal they load. Therefore he should take a true measurement, by an anemometer, once or twice each month and record the same in a book for that purpose, of the amount of air entering the mine, into each split, and that passes along the working face. These records should be accessible within office hours to every underground worker that wishes to see them and to the mine inspector of the district.

SHOT EXAMINERS.

The law regarding shot examiners is universally observed and now in all the mines of the district the operators and miners have agreed to let the shot examiners do also the firing. Any good law can be abused and the law of shot examiners is no exception. The sham inspection and sometimes no inspection at all of the holes by several examiners made it necessary for me to revoke their permission.

Two shot examiners were killed in the district during the biennial period ending June 30, 1908, while acting as shot firers.

Had they taken more time to examine and inquire more fully of the miner regarding the amount of powder and the length of fuse to be used in the holes they were to fire, my opinion is that one, if not both, of the accidents would not have occurred. Although our state law does not restrict the amount of explosive to be used in a single hole, nevertheless it is one of the most important duties of the shot examiner to inquire of the miner the amount of explosive he intends to use, and the examiner should satisfy himself that the same is not excessive or dangerous for him to fire. It is a well known fact that the tendency of late years has been to do less "preparing of the shots;" to let explosive do work that formerly was done with the pick, therefore necessitating much heavier charges of explosives to be fired in a single hole than it did formerly when considerable cutting, mining and shaping of the coal was done with the pick. It is the duty of the shot examiner, more than any one else, to see that the practice referred to is not carried beyond the point of safety. For not only is the excessive use of explosives a waste of coal and a menace to the safety of the mine and the lives of the shot firers, but it is undoubtedly the primary cause for a large number of our mine accidents under the title of "falling of slate."

Too much hurry to get through with the work and too much reliance upon friends, which meant no inspection at all, but simply an inquiry from the mouth of the room as to the number of shots they had to be fired, have been some of the evil practices some examiners had fallen into. I am glad to report, however, that complaints of the above nature are now rarely made. Fair effort is made today to do the work thoroughly and to give it ample time.

FATAL ACCIDENTS OCCURRING IN THE SECOND DISTRICT FOR THE YEAR ENDING JUNE 30, 1908.

On July 19, 1906, fatal accident occurred to W. Capolupei, a miner in the employ of the Rex Fuel Company of Durfee, Mahaska county. He was at work in his room when a fall of slate occurred, killing him.

On July 21, 1906, fatal accident occurred to Herman Vogal, a miner in the employ of the Rex Fuel Company of Durfee, Mahaska county. Vogal was in the face of his room and seemed to be mining off a shot when a fall of slate occurred breaking his neck and limbs. He died before he was gotten out of the mine. Coroner's jury decided that his death was caused by an unavoidable fall of slate and that no blame attached to any one.

On November 1, 1906, fatal accident occurred to Kinzie Huston and Oscar Lowe miners in the employ of the Dempster Coal Company of Ottumwa, Wapello county. There were eight shots to be fired in the mine that afternoon. The first shot went off after the cage was started hoisting. When the third shot went off it slightly lifted the cage up and before it had adjusted itself the fourth shot went off forcing both cages, which were then near the center of the shaft, with terrific force against the head gear of the shaft. The others in the cage were thrown from the cage but Kinzie Huston fell back into the shaft and was killed. Oscar Lowe was caught between the cage and the headgear and was so badly injured that he died a few days afterwards.

On February 4, 1907, fatal accident occurred to Michael Kasper, a miner in the employ of the Lost Creek Fuel Company of Lost Creek, Mahaska county. He is supposed to have lost his balance and fell after the cage left the bottom. Was caught about ten feet of main landing and dragged along bunting for that distance to landing. He expired within five minutes after cage reached landing and before he was released.

On March 5, 1907, fatal accident occurred to Charles Williams, a miner in the employ of the Consolidation Coal Company of Buxton, Monroe county. Accident occurred at Mine 13. At the time of his death Williams was chunking coal. At that place it is customary when one car is loaded to ride it down the track about fifty yards and stop it. At the time of the accident there was one car standing on the track about fifty yards from the shaft and when the second car was loaded Mr. Williams rode the front end of the car down. The brake was on the end of the car. He tried to stop the car, but could not and it kept going faster and faster and when it struck the other car Williams fell down in between the cars and was run over. Coroner's jury decided his death was purely accidental.

On March 6, 1907, fatal accident occurred to S. B. Nail, an employe of the Atwood Coal Company of Blythe, Mahaska county. Mr. Nail was at the face of his room. His partner was wedging false roof. Mr. Nail heard the cracking or working and got uneasy and in an effort to get out got right under a piece of slate which fell and crushed him.

On April 11, 1907, fatal accident occurred to J. W. Mason, a shot examiner and shot firer in Mine No. 11 of the Consolidation Coal Company of Buxton, Monroe county. Mr. Mason had been employed as shot examiner and shot firer for some time. On this day he was found dead on East Side, 14 AX entry, Room No. 5. The supposition is that a dust explosion occurred on the AX entry No. 1. The shots had not been fired in the room where Mason was found. The explosion was probably caused by a blown out shot.

On April 24, 1907, fatal accident occurred to Marcus O'Haloran, a miner in the employ of the Bolton & Hoover Coal Company of Bolton, Mahaska county. He was at work in Room No. 1, on the 11th West, when a fall of slate occurred, killing him instantly. He was fifty years of age and had been in the employ of the company about six months.

On April 25, 1907, fatal accident occurred to Spencer Winston, a shot examiner and shot firer at Mine No. 10 of the Consolidation Coal Company of Buxton, Monroe county. He was killed while performing his duty as shot firer, supposedly on account of short fuse, in firing which did not give him time to get out of the shot's way.

On May 7, 1907, fatal accident occurred to John Tethrington, a miner in the employ of the Mammoth Vein Coal Company of Everist, Marion county. He was at work in Room 19 on Eighth East, North Entry, Mine No. 5, when a fall of coal and rock occurred. He was mining off a shot. Both legs were broken, cut on the back of head, rib on left side broken and cut on cheek. Accident occurred on May 7 and Tethrington died on May 9. He was forty-three years old and had been in the employ of the above company for about five weeks.

On July 14, 1906, fatal accident occurred to Charles Roadniper, a laborer in the employ of the Cunningham Coal Company of Oskaloosa, Mahaska county. Deceased was aiding in repairing a curb in the escape shaft when he was overcome with heat exhaustion and while in that condition fell backward, head first, into the shaft and was drowned in the water at the bottom of the escape shaft.

FATAL ACCIDENTS OCCURRING IN THE SECOND DISTRICT FOR THE YEAR ENDING JUNE 30, 1908.

On July 25, 1907, fatal accident occurred to Bates Bartolma, a timberman in the employ of the Bolton & Hoover Coal Company of Mahaska county. Fall of slate while cutting hole for timber. Slate fell on deceased. Deceased was cautioned about the condition of this piece of slate and could have timbered it easily, as plenty of timbers were close by. He got hurt about twenty minutes past 9 p. m., and died that night about one o'clock.

JOHN BIROS.

On July 26, 1907, fatal accident occurred to John Biros, a miner in the employ of the Crescent Coal Company of White City, Mahaska county. He was at work at face of Room 37, sixth south entry, and there was a bad piece of slate and timberman told him to take it down. Fall of slate which killed him occurred while he was attempting to drive a prop out to let slate down.

JOHN BROWN.

On September 19, 1907, fatal accident occurred to John Brown, a company man in the employ of the Consolidation Coal Company of Buxton, Monroe county. He was at work on the 11th C. entry parting in Mine No. 11 when fall of slate occurred. He died shortly after the accident.

JOE GLENN.

On October 3, 1907, fatal accident occurred to Joe Glenn, a miner in the employ of the Mammoth Vein Coal Company of Everist, Marion county. Accident happened in Room 13, Eighth South Entry, Mine No. 11.

Deceased went into room adjoining one in which he worked to borrow a scraper. Slate fell and crushed him. Evidence shows man working room where accident occurred had same well-timbered and considered it safe.

FRANK LOUCHE.

On October 10, 1907, fatal accident occurred to Frank Louche, a miner in the employ of the Rex Fuel Company of Durfee, Mahaska county. Accident occurred about 9:30 on above date, in Room 5, First North Entry. Cause of accident fall of slate. His head was crushed, causing instant death.

HARRISON FIELDS.

On December 17, 1907, fatal accident occurred to Harrison Fields, a dumper in the employ of the Rice Coal Company of Mahaska county. Coroner's jury decided that he came to his death while dumping and by approaching too close to shaft and with forceful momentum was carried into the open shaft, falling to his death, a distance of about thirty feet to shaft bottom.

ENOCH JOHNSON.

On January 30, 1908, fatal accident occurred to Enoch Johnson, a mule driver in the employ of the Roseland Coal Company of Ottumwa, Wapello county. It is supposed he did not sprag or brake his cars before starting down hill, upon which he was killed, and the cars got to going too fast, throwing him off and in front of the car which ran over him, crushing him and causing his death almost instantly.

WILLIAM EDWIN NEVIN.

On June 1, 1908, fatal accident occurred to William Edwin Nevin, a miner in the employ of the Roseland Coal Company of Ottumwa, Wapello county. He was at work drawing pillars and was ambitious to secure as much coal as possible, not realizing or thinking of danger, when a fall of slate occurred badly crushing him and causing his death.

CHARLES HORTON.

On June 19, 1908, fatal accident occurred to Charles Horton, a miner in Mine No. 5, Mammoth Vein Coal Company of Everist, Marion county. He was at work in CX Entry when a fall of slate, coal and black jack occurred, causing his death. Fall caused his death almost instantly.

FATAL ACCIDENTS

Fatal Accidents in District No. 2, for two years ending June 30, 1908

Date		Name of Deceased	Occupation	Cause of Death	Employed by	County
1906.						
July	19	W. Capolupel	Miner	Fall of slate	Rex Fuel Co.	Mahaska
July	21	Herman Vogal	Miner	Fall of slate	Rex Fuel Co.	Mahaska
November	1	Kinzie Huston	Miner	Thrown down shaft	Dempster Coal Co.	Wapello
November	1	Oscar Lowe	Miner	Crushed by cage	Dempster Coal Co.	Wapello
1907						
February	4	Michael Kasper	Miner	Crushed by cage	Lost Creek Fuel Co.	Mahaska
March	5	Chas. Williams	Miner	Run over by car	Consolidation Coal Co.	Monroe
March	6	S. B. Nall	Miner	Fall of slate	Atwood Coal Co.	Mahaska
April	11	J. W. Mason	Shot examiner	Dust explosion	Consolidation Coal Co.	Monroe
April	24	Marcus O'Haloran	Miner	Fall of slate	Bolton & Hoover Coal Co.	Mahaska
April	25	Spencer Winston	Shot examiner	Flying coal	Consolidation Coal Co.	Monroe
May	7	John Tethrington	Miner	Fall of coal	Mammoth Vein Coal Co.	Marion
1906.						
July	14	Chas. Roadniper	Laborer	Fell down shaft	Cunningham Coal Co.	Mahaska
1907.						
July	25	Bates Bartoloma	Timberman	Fall of slate	Bolton & Hoover Coal Co.	Mahaska
July	26	John Biros	Miner	Fall of slate	Crescent Coal Co.	Mahaska
September	19	John Brown	Timberman	Fall of slate	Consolidation Coal Co.	Monroe
October	3	Joe Glenn	Miner	Fall of slate	Mammoth Vein Coal Co.	Marion
October	10	Frank Louche	Miner	Fall of slate	Rex Fuel Co.	Mahaska
December	7	Harrison Fields	Dumper	Fell down shaft	Rice Coal Co.	Mahaska
1908.						
January	30	Enoch Johnson	Driver	Run over by car	Roseland Coal Co.	Wapello
June	1	Wm. Edwin Nevin	Miner	Fall of slate	Roseland Coal Co.	Wapello
June	19	Chas. Horton	Miner	Fall of slate	Mammoth Vein Coal Co.	Marion

NON-FATAL ACCIDENTS OCCURRING IN THE SECOND DISTRICT FOR THE YEAR ENDING JUNE 30, 1907.

July 31, 1906, Henry Corey, a miner in the employ of Phillips Fuel Company of Rutledge, Wapello county. Jawbone broken. False top falling.

August 1, 1906, Tom Minor, a miner in the employ of the Consolidation Coal Company of Buxton, Monroe county. Fall of coal. Leg broken.

August 29, 1906, Alonzo Brooks, a timberman in the employ of the Consolidation Coal Company of Buxton, Monroe county. Fall of slate breaking arm.

September 12, 1906, B. H. Johnson, a driver in the employ of the Consolidation Coal Company of Buxton, Monroe county. Was run over by car. One leg broken.

September 20, 1906, Isaac Johnson, a driver for the Consolidation Coal Company of Buxton, Monroe county. Mine No. 13. Car run over his leg, breaking it.

October 25, 1906, John Findlay of Findlay Coal Company of Douds, Van Buren county. Blown out shot. Face and hands burned.

October 25, 1906, John Albertson, a miner in the employ of Findlay Coal Company of Douds, Van Buren county. Blown out shot. Face and arms badly burned.

October 26, 1906, W. M. Cox, a driver in the employ of the Crickett Coal Company of Mahaska county. Fell off trip. Fractured clavicle.

October 28, 1906, Robert Calvert, a miner in the employ of the Consolidation Coal Company of Buxton, Monroe county. Fall of coal fracturing his skull.

November 8, 1906, Enlyn Jones, a cager in the employ of the English Creek Coal Company of Marion county. Went to put tail rope on bell sheave. Was thrown against rib, breaking one arm.

November 27, 1906, Frank Ademeet, a miner in the employ of the National Union Coal Company of Beacon, Mahaska county. Fall of slate breaking one leg.

November 28, 1906, B. S. Mason, a shot firer for Rex Fuel Company of Mahaska county. Shot blew through a room, breaking one arm.

December 28, 1906, Tom Stiner, a miner in the employ of Anchor Coal Company of Laddsdale, Iowa. Explosion of dynamite. His hands were mangled, face burned, and wounds on legs and body caused by flying pieces of tin and coal.

December 28, 1906, Frank Steiner, a miner in the employ of the Anchor Coal Company of Laddsdale. Explosion of dynamite. Flesh wounds caused by flying tin and coal.

December 28, 1906, Sylvester Pyle, a miner in the employ of the Anchor Coal Company of Laddsdale. Dynamite explosion. Injured by flying tin.

January 14, 1907, Samuel Hawk, a miner in Mine No. 7, Phillips Fuel Company of Rutledge, Wapello county. Fall of slate injuring him about head and neck.

January 30, 1907, Archard Angwin, a timberman in the employ of the Roseland Coal Company of Wapello county. Leg broken in two places. Fall of slate.

February 2, 1907, Robert Doolittle, a night pumper in the employ of the Crescent Coal Company of White City, Mahaska county. His overcoat caught in engine. He was cut and bruised and one toe dislocated.

February 4, 1907, William Percy, a miner in the employ of J. T. Hayes of Marion county. Fall of slate breaking one arm.

February 4, 1907, Cyrus Kerr, a machine man in the employ of the Eveland Coal Company of Eveland, Mahaska county. Caught by cage. Hurt about head and shoulders.

February 6, 1907, Andrew Johnson, a tracklayer in the employ of the Ottumwa Brick & Construction Company of Ottumwa, Wapello county. Fall of rock. Hip dislocated.

February 9, 1907, Bert Harstrom, a driver for the Crescent Coal Company of White City, Mahaska county. Slipped off tail chain. Car ran over his foot, breaking four toes.

February 25, 1907, Charles Page, a miner in the employ of the Consolidation Coal Company of Buxton, Monroe county. Fall of coal. Leg broken below knee in two places.

March 1, 1907, R. Wake, a tracklayer for the Rex Fuel Company of Mahaska county. Bruised and hurt internally by cage.

March 1, 1907, J. H. Olson, a timberman in the employ of the Consolidation Coal Company of Buxton, Monroe county. Fall of slate. His jaw broken and face smashed.

March 14, 1907, Allen Coulter, a miner in the employ of Coulter & Sons of Mahaska county. Fall of slate injuring him.

March 18, 1907, Mike Klobnak, a driver in the employ of the Crescent Coal Company of White City, Mahaska county. Car jumped track and his foot was caught by the head bumpers. Two bones in his foot were broken.

March 20, 1907, Lawrence Sharp, a trapper in Mine No. 10 of the Consolidation Coal Company of Buxton, Monroe county. Run over by car. One arm and one leg broken.

March 29, 1907, Ed. Williams, a shot examiner and shot firer in Mine No. 11 of the Consolidation Coal Company of Buxton, Monroe county. Premature shot; said to be short fuse in hole. Compound fracture of right arm.

April 11, 1907, William Conners, a driver in the employ of the Ottumwa Brick & Construction Company of Ottumwa, Wapello county. Run over by car. Hip dislocated.

April 18, 1907, Jake Cadle, a miner in the employ of the Consolidation Coal Company of Buxton, Monroe county. Fall of slate, breaking bones in ankle.

April 19, 1907, Jake McKerson, a driver in the employ of the Consolidation Coal Company of Buxton, Monroe county. Mine 13. Mule kicked at him, and in trying to get out of the way he fell into the car, breaking his arm.

May 29, 1907, Emmet Jones, a driver in the employ of the Phillips Fuel Company of Wapello county. Run over by car. Leg cut and bruised.

June 3, 1907, William Sinks, a miner in the employ of the Crescent Coal Company of White City, Mahaska county. Fall of slate. Leg broken in two places.

June 6, 1907, E. D. Long, a shot examiner in the employ of the Ottumwa Brick & Construction Company of Ottumwa, Wapello county. Fall of slate. One leg broken.

June 29, 1907, Ralph Rauch, a miner in the employ of the Bolton & Hoover Coal Company of Bolton, Mahaska county. Fall of slate, breaking one leg above the ankle.

NON-FATAL ACCIDENTS OCCURRING IN THE SECOND DISTRICT FOR THE YEAR ENDING JUNE 30, 1908.

July 9, 1907, Frank Solentik, miner in No. 5, Crescent Coal Company, Mahaska county. Fall of slate. Back bruised and face cut.

August 19, 1907, Wm. J. Smith, a motorman in employ of Consolidation Coal Company of Buxton. Run over by car. Foot mashed.

November 9, 1907, Harry Lile, a miner in the employ of Phillips Fuel Company of Wapello county. Run over by car. Leg broken.

January 2, 1908, William Lewis, a shot firer in the employ of the National Union Coal Company, Mine No. 2, Beacon, Mahaska county. Premature explosion. Severely injured about head and shoulders.

January 7, 1908, John White, a mine foreman in employ of the Phillips Fuel Company of Rutledge, Wapello county. Fall of slate. Breaking one leg and crushing ankle.

January 8, 1908, Andy Crambruzzie, a miner in the employ of Crickett Coal Company of Crickett, Mahaska county. Fall of slate injuring him about hips and back.

December 12, 1907, O. L. Johnson, a miner in the employ of Crescent Coal Company of White City, Mahaska county. Caught by car. One arm broken.

March 14, 1908, John Witham, a miner in the employ of the Standard Coal Company of Ottumwa, Wapello county. Fall of coal injuring one leg.

December 14, 1907, William Mitchell, a miner in the employ of J. F. Hays of Marion county. Fall of slate. Bruised about hips.

October 26, 1907, Robert Wilson, a miner in the employ of Crawford Coal company of Mahaska county. Fall of slate. Back strained.

June 6, 1908, Ollie Crutche, a miner in the employ of the Crawford Coal Company of Mahaska county. Premature explosion.

September 10, 1907, August Pomier, a driver for Rex Fuel Company of Mahaska County. Run over by car. Leg broken.

May 26, 1908, J. C. Ansberry, miner in employ of Rex Fuel Company of Mahaska county. Fall of slate. Back and hips hurt.

————, Joe West, a driver for Bolton & Hoover Coal Company of Mahaska county. Fall of slate. Ankle dislocated.

————Dan Graves, a driver for Bolton & Hoover Coal company of Mahaska county. Struck by tail-rope. Leg broken.

January 6, 1908, M. Phellen, a miner in the employ of the Western Fuel Company of Pekay, Mahaska county. Fall of rock. Ankle broken.

March 30, 1908, John Fedro, a driver in the employ of the Western Fuel Company of Pekay, Mahaska county. Caught by car. Body crushed.

December 8, 1907, Sam Crawford, a miner in the employ of William Miller of Marion county. Fall of slate badly bruising Crawford about body.

August 28, 1907, Frank Reed, shaft sinker in the employ of the Phillips Fuel Company of Wapello county. Severely cut on hand while cutting pipes.

August 23, 1907, Albert Erscine, cager in employ of Phillips Fuel Company of Wapello county. Coal fell from pit car on cage, cutting a gash on Erscine's head.

November 9, 1907, Harry Dial, driver in the employ of the Phillips Fuel Company of Wapello county. Run over by car. Leg broken.

January 7, 1908, Jack White, pit boss for Phillips Fuel Company of Wapello county. Fall of slate. Broken leg and crushed ankle.

February 20, 1908, William Foulkes, Jr., driver for Phillips Fuel Company of Wapello county. Foot caught in tail-rope. Bone in foot broken.

February 26, 1908, William Day, a miner in the employ of the Phillips Fuel Company of Wapello county. Fall of slate. Bruised back and leg.

March 3, 1908, John D. Lilly, a miner in the employ of the Phillips Fuel Company of Wapello county. Fall of slate. Bruised back and chest.

NON-FATAL ACCIDENTS.

Non-Fatal Accidents in District No. 2 For Two Years Ending June 30, 1908.

Date	Name	Occupation	Cause of Accident	Character of Injury	Mine Where Accident Occurred	County
1906.						
July 31	Henry Corey	Miner	False top falling	Jaw broken	Phillips Fuel Co.	Wapello
August 1	Tom Minor	Miner	Fall of coal	Leg broken	Consolidation Coal Co.	Monroe
August 28	Alonzo Brooks	Timberman	Fall of slate	Arm broken	Consolidation Coal Co.	Monroe
September 12	B. H. Johnson	Driver	Run over by car	Leg broken	Consolidation Coal Co.	Monroe
September 20	Isaac Johnson	Driver	Run over by car	Leg broken	Consolidation Coal Co.	Monroe
October 25	John Findlay	Miner	Blown out shot	Face and hands burned	Findlay Coal Co.	Van Buren
October 25	John Albertson	Miner	Blown out shot	Face and hands burned	Findlay Coal Co.	Van Buren
October 26	W. M. Cox	Driver	Fell off trip	Shoulder broken	Crickett Coal Co.	Mahaska
October 28	Robt. Calvert	Miner	Fall of coal	Fractured skull	Consolidation Coal Co.	Monroe
November 8	Enlyn Jones	Cager	Struck by tail rope	Arm broken	English Creek Coal Co.	Marion
November 27	Frank Ademeet	Miner	Fall of slate	Leg broken	National Union Coal Co.	Mahaska
November 28	B. S. Mason	Shot firer	Flying coal	Arm broken	Rex Fuel Co.	Mahaska
December 28	Tom Stiner	Miner	Explosion dynamite	Face burned and body bruised	Anchor Coal Co.	Wapello
December 28	Frank Stiner	Miner	Explosion dynamite	Flesh wounds	Anchor Coal Co.	Wapello
December 28	Sylvester Pyle	Miner	Explosion dynamite	Flesh wounds	Anchor Coal Co.	Wapello
1907.						
January 14	Samuel Hawk	Miner	Fall of slate	Head and neck cut	Phillips Fuel Co.	Wapello
January 30	Archard Angivin	Timberman	Fall of slate	Leg broken	Roseland Coal Co.	Wapello
February 2	Robt. Doolittle	Night man	Caught in engine	Body bruised	Crescent Coal Co.	Mahaska
February 4	Wm. Percy	Miner	Fall of slate	Arm broken	J. T. Hays Coal Co.	Marion
February 4	Cyrus Kerr	Machine man	Caught by cage	Head and shoulders hurt	Eveland Coal Co.	Mahaska
February 6	Andrew Johnson	Tracklayer	Fall of rock	Hip dislocated	Ottumwa Brick & Cons. Co.	Wapello
February 9	Bert Harstrom	Driver	Car ran over foot	Foot mashed	Crescent Coal Co.	Mahaska
1907.						
February 25	Charles Page	Miner	Fall of coal	Leg broken	Consolidation Coal Co.	Monroe
March 1	R. Wake	Tracklayer	Caught by cage	Hurt internally	Rex Fuel Co.	Mahaska
March 9	J. H. Olson	Timberman	Fall of slate	Jaw broken	Consolidation Coal Co.	Monroe
March 14	Allen Coulter	Miner	Fall of slate	Body bruises	Coulter & Sons	Mahaska
March 18	Mike Klobnak	Driver	Caught by car	Foot mashed	Crescent Coal Co.	Mahaska
March 20	Lawrence Sharp	Trapper	Run over by car	Arm and leg broken	Consolidated Coal Co.	Monroe
March 29	Ed Williams	Shot exam'r.	Premature shot	Arm broken	Consolidated Coal Co.	Monroe
April 11	Wm. Conners	Driver	Run over by car	Hip dislocated	Ottumwa Brick & Cons. Co.	Wapello
April 18	Jake Cadle	Miner	Fall of slate	Ankle broken	Consolidated Coal Co.	Monroe
April 19	Jake McKerson	Driver	Fell into car	Arm broken	Consolidated Coal Co.	Monroe
May 29	Emmet Jones	Driver	Run over by car	Leg cut and bruised	Phillips Fuel Co.	Wapello
June 3	William Sinks	Miner	Fall of slate	Leg broken	Crescent Coal Co.	Mahaska
June 6	E. D. Long	Shot exam'r.	Fall of slate	Leg broken	Ottumwa Brick & Cons. Co.	Wapello
June 29	Ralph Rauch	Miner	Fall of slate	Leg broken	Bolton & Hoover Co.	Mahaska
July 9	Frank Solentik	Miner	Fall of slate	Back bruised, face cut	Crescent Coal Co.	Mahaska
August 19	Wm. J. Smith	Motorman	Run over by car	Foot mashed	Consolidated Coal Co.	Monroe
November 9	Harry Lile	Miner	Run over by car	Leg broken	Phillips Fuel Co.	Wapello
1908.						
January 2	Wm. Lewis	Shot firer	Premature explosion	Injured about head	National Union Coal Co.	Mahaska
January 7	John White	Mine forem'n	Fall of slate	Leg broken	Phillips Fuel Co.	Wapello
January 8	Andy Crambruzzle	Miner	Fall of slate	Injured hips and back	Crickett Coal Co.	Mahaska
1907.						
December 12	O. L. Johnson	Miner	Caught by car	Arm broken	Crescent Coal Co.	Mahaska
1908.						
March 14	John Witham	Miner	Fall of coal	One leg injured	Standard Coal Co.	Wapello
1907.						
December 14	Wm. Mitchell	Miner	Fall of slate	Bruised about hips	J. F. Hays Coal Co.	Marion
August 23	Albert Erscine	Cager	Fall of coal	Hurt about head	Phillips Fuel Co.	Wapello
November 9	Harry Dial	Driver	Run over by car	Leg broken	Phillips Fuel Co.	Wapello
1908.						
January 7	Jack White	Pit boss	Fall of slate	Broken leg	Phillips Fuel Co.	Wapello
February 20	Wm. Foulkes, Jr.	Driver	Foot caught in tail rope	Bone in foot broken	Phillips Fuel Co.	Wapello
February 26	Wm. Day	Miner	Fall of slate	Bruised back and leg	Phillips Fuel Co.	Wapello
March 3	John D. Lilly	Miner	Fall of slate	Bruised body	Phillips Fuel Co.	Wapello
1907.						
October 26	Robert Wilson	Miner	Fall of slate	Back strained	Crawford Coal Co.	Mahaska
1908.						
January 6	M. Phellen	Miner	Premature explosion	Ankle broken	Crawford Coal Co.	Mahaska
March 30	John Fedro	Driver	Fall of rock	Body crushed	Western Fuel Co.	Mahaska
June 6	Ollie Crutche	Miner	Caught by car	Badly bruised	Western Fuel Co.	Mahaska
1907.						
September 10	August Pomier	Driver	Run over by car	Leg broken	Rex Fuel Co.	Mahaska
May 26	J. C. Ansberry	Miner	Fall of slate	Back and hips hurt	Rex Fuel Co.	Mahaska
May 26	Joe West	Driver	Fall of slate	Ankle dislocated	Bolton & Hoover Coal Co.	Mahaska
May 26	Dan Graves	Driver	Struck by tail rope	Leg broken	Bolton & Hoover Coal Co.	Mahaska
1907.						
December 8	Sam Crawford	Miner	Fall of slate	Body bruised	Wm. Miller Coal Co.	Marion
August 28	Frank Reed	Shaft sinker	Cut by pipes	Hand cut	Phillips Fuel Co.	Wapello

MONROE COUNTY (PART).

The part of Monroe county in District No. 2 has thirteen mines and produced in the last biennial period 1,961,160 tons of coal, giving employment to 960 miners and 547 other employees.

Since the last report was made the following new mines have been opened: Central Coal Company, Nos. 3 and 4, Hickory, and the Coalfield Coal Company has a new shaft under development. In all probability the Consolidation Coal Company will commence sinking Shaft No. 15, to the south and east of their Mine No. 11, and the Crescent Coal Company will put down a shaft to the east of Fraker, and it may be other new mines will be in course of construction before this report will be in print. The following mines were abandoned in the same period: Consolidation Coal Company, Nos. 11 and 13, Buxton, and the Central Coal Company, No. 1, Hickory.

The mines in this county connected with the Chicago & North-Western Railway are located in one of the richest coal deposits of the district. The Consolidation Coal Company has at present two mines in operation in the county and are by far the largest producers. The equipment and arrangement of their mines, both on the surface and under ground, are good and are made to handle a large tonnage. Most of the entry work and room turning is done with cutting machines. Haulage is done by the "Third Rail System," and much of the gathering from rooms and entries is done by both the third rail and trolley system. The mines on the whole are well-kept, and their system of stoppings and ventilation has much to be commended.

The mines of the company worked on an average 254 days in the year ending June 30, 1907, and 222 days during the year ending June 30, 1908.

Three fatal accidents occurred in and around the mines of this county belonging to this district during the year ending June 30, 1907, and one during the year ending June 30, 1908. In the first year 365,158 tons of coal were produced for every life lost. In the second year 865,687 were mined for every fatal accident. One life was lost for every 481 persons employed in the first year, and one life was lost for every 1,558 men employed in the second year.

MAHASKA COUNTY.

For many years Mahaska ranked first in the state in the production of coal, but of late years has fallen to fourth place. The total production of the county for the biennial period ending June 30, 1908, was 1,462,338 tons. This output came from 35 mines and gave employment to 1,031 miners and 515 other employees.

Since June 30, 1906, fifteen mines have been abandoned, the principal mines being the Whitebreast Fuel Company, Pekay; Lost Creek Coal Company, No. 3, Lost Creek; Garfield Coal Company, No. 2, Evans; Spring Creek Coal Company, Oskaloosa; Nagle Coal Company, Colon; and the National Union Coal Company, No. 1, Beacon. During the same period eleven new mines have been opened, the leading mines being Garfield Coal Company, No. 4, located about six miles west of Oskaloosa; Atwood Coal Company, four miles west of Rosehill; Bolton-Hoover Coal Company, No. 2, Bolton; National Union Coal Company, No. 2, Beacon, and the Consolidation Coal Company, No. 14, about two miles northwest of Buxton. The last mine named is in course of development. The entries are driven to the boundary line before rooms are turned, and the development of the mine will be a retreat toward the main hoisting shaft.

The shipping mines of the county worked on an average of 236 days during the year ending June 30, 1907, and 234 days during the year ending June 30, 1908.

Six fatal accidents occurred in and around the mines of the county during the year ending June 30, 1907, and four during the year ending June 30, 1908. In the first year 114,968 tons of coal were produced for every life lost, and in the second year 193,117 tons were mined for every fatal accident. One life was lost for every 251 persons employed in the first year, and one life lost for every 264 men employed in the second year.

MARION COUNTY.

Thousands of acres of land in this county have been prospected and found to be underlaid with rich deposits of coal ranging in thickness from three to nine feet and at present owned by railroad companies and other big corporations. When their holdings in other counties cease to be productive or not sufficient to supply the demand, it is reasonable to presume that they will then develop their properties in this county, and undoubtedly the day is not far off when mining in Marion county will be carried on far more extensively than at the present time.

There are at present twenty mines in operation in the county. A large number of them, however, are local mines. The largest mines are operated by the Mammoth Vein Coal Company, Everist, and the English Creek Coal Company, Flagler.

The total production of the county during the biennial period ending June 30, 1908, was 722,226 tons, which gave employment to 526 miners and 207 other employees.

The shipping mines worked on an average 230 days in the year ending June 30, 1907, and 216 days in the year ending June 30, 1908. The number of fatal accidents for the same period were one for the first year and two for the second year; 394,481 tons of coal were produced for every life lost in the year ending June 30, 1907, and 163,873 tons for every life lost the year ending June 30, 1908. One life was lost for every 775 men employed during the above period in the first year, and one for every 347 men employed in the second year.

WAPELLO COUNTY.

From what record we have, Wapello county has produced since the year 1860 about 7,330,000 tons of coal, and if there had been a record kept of the output of the small mines it would exceed this several thousand tons. In the year 1862 the county produced 13,106 tons, which at that time was nearly three times as much as any other county in the state. The output of the county steadily increased from the above date until it reached its highest production, in 1888, of 380,395 tons. In 1903 and 1905 it came very near equalling the record of 1888, with a production of 365,165 and 368,029 tons, respectively.

There are now operating in the county four shipping mines and sixteen local mines, giving employment to 418 miners and 225 other employees. Their total production for the biennial period was 517,770 tons. The average number of days worked by the shipping mines during the year ending June 30, 1907, was 265, and during the year ending June 30, 1908, was 246. The number of fatal accidents during the same period were two in the first year and two in the second year. In the first year referred to above 136,778 tons of coal were mined for every fatal accident, and 122,107 tons were mined in the second year. One life was lost for every 315 men employed in and around the mines in the first year of the biennial period, and one life lost for every 280 men employed in the second year.

VAN BUREN COUNTY.

In Van Buren county coal is found in different places in the county in basins of limestone. These pockets comprise from three to thirty acres in extent. The larger pockets of the county have been worked out. One pocket north of Douds-Leando has been exhausted, and still north of this basin other coal pockets exist and are being mined at the present time. The mines that are located north of Douds furnish coal to the Des Moines Valley branch of the Rock Island Railroad, and so operate the most of the year. Other small mines in the county are operated for local trade, and but little coal is mined except during the fall and winter. The coal measures in Van Buren county will not exceed a thickness of 130 feet. The seams of coal found vary in thickness from two to four feet and the quality of the coal is very good.

KEOKUK COUNTY.

Keokuk county lies well toward the eastern margin of the Iowa coal field, and consequently the coal measure strata covering it are quite thin. It does not seem probable that in this county the coal measure strata underlie but a small part of the county, perhaps seventy-five square miles of territory. There are perhaps fifty square miles in and around What Cheer which are underlaid by coal measures, but only a portion of this contains coal. Formerly there were some extensive mines in operation in the vicinity of What Cheer, but this field is about worked out now, and at the present time there are but few mines in operation, and these operate only to supply the local demand of What Cheer and vicinity.

WARREN COUNTY.

Coal has been mined in this county for more than forty years. More than one hundred shafts, drifts and slopes have been opened and worked during the period stated above. The coal seams are many and found at various depths. The shafts in the county run from fifteen to eighty feet deep. Some of the coal is mined by slopes and in some cases by stripping. It is evident that most of the mines operated in the county are what are termed farmers' mines, the mines being local mines and operated only during the fall and winter months, and usually not more than five or six men are required at each mine.

At one time several shipping mines were operated near Summerset and considerable coal was shipped, but of late years no mines have been operated except for local trade. Coal is found in nearly every township in the county, and the seams vary in thickness from 18 inches to 4½ feet. However, but little of the latter thickness is found. It is quite likely that in the coming years, with an increased demand, more and better coal mining machinery will be used and the industry will begin to mean something to the county.

JEFFERSON COUNTY.

The Des Moines coal measures extend over the most part of Jefferson county, and coal has been found in almost every township in the county. While this is true, no extensive seams have been found and no extensive mines are now in operation in the county, and what coal is mined is mined for the local trade only. There are now no railroad mines in the county, but formerly coal was mined and shipped quite extensively in the vicinity of Perlee. Extensive prospecting may develop considerable coal in the county, and in the years to come the industry may mean more to the county than at the present time.

DAVIS COUNTY.

Davis county, surrounded as it is by coal producing counties, has never been noted for its coal production. The entire county is doubtless underlaid by valuable coal deposits, but because of the thick beds of drift there are exposures of coal strata in but few places. The prospecting in the county has been unsuccessful in the most part, as drill holes have not penetrated through the glacial covering.

Mines at present are operated near Laddsdale, in the northeast part of the county; at Carbon, in the north part of the county, and near Floris. Along Soap Creek are a number of exposures. We understand that a prospect hole put down near Bloomfield a number of years ago penetrated three coal seams of six to eighteen inches in thickness.

It is probable that the Mystic seam, in Appanoose county, extends only over a small portion of Davis county. In the northwest corner of the county deposits of coal also probably occur, since extensive mines are operated a few miles away in Monroe county. The shaft operated near Laddsdale works nearly four feet of solid coal. It is hoped that thorough prospecting in the county will be carried on to determine beyond a doubt the extent of her coal measures.

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

MAHASKA COUNTY.

Name of Company	Superintendent	Postoffice Address	Shaft or Slope	Plan of Working	How Ventilated	Power Used	Shipping or Local
Bolton-Hoover Coal Co. No. 1	W. H. Braniger	Oskaloosa	Slope	Room and pillar	Fan	Steam	Shipping
Bolton-Hoover Coal Co. No. 2	W. H. Braniger	Oskaloosa	Slope	Room and pillar	Fan	Steam	Shipping
Nelson & Shoemaker Coal Co.	W. R. Nelson	Oskaloosa	Shaft	Room and pillar	Grate	Horse	Local
F. R. Shultz Coal Co.	F. R. Shultz	Oskaloosa	Shaft	Room and pillar	Furnace	Horse	Local
Garfield Coal Co. No. 3	J. H. Ramsay	Oskaloosa	Slope	Room and pillar	Fan	Steam	Shipping
Garfield Coal Co. No. 4	J. H. Ramsay	Oskaloosa	Shaft	Room and pillar	Fan	Steam	Shipping
Isaac Davis & Son	Isaac Davis	Oskaloosa	Slope	Room and pillar	Furnace	Horse	Local
David Lewis & Son	David Lewis	Beacon	Slope	Room and pillar	Furnace	Horse	Local
Levi Wassenchove Coal Co.	Levi Wassenchove	Oskaloosa	Shaft	Room and pillar	Furnace	Horse	Local
Barrowman & Oakley Coal Co.	R. R. Barrowman	Oskaloosa	Shaft	Room and pillar	Fan	Horse	Local
Cunningham Coal Co.	E. A. Cunningham	Oskaloosa	Shaft	Room and pillar	Furnace	Horse	Local
Crescent Coal Co.	W. S. White	Oskaloosa	Shaft	Room and pillar	Fan	Steam	Shipping
Rex Fuel Co.	Clarence Durfee	Bussey	Shaft	Room and pillar	Fan	Steam	Shipping
Allen Colters & Sons	Allen Colter	Beacon	Shaft	Room and pillar	Fan	Horse	Local
W. B. Rogers Coal Co.	W. B. Rogers	Olivet	Shaft	Room and pillar	Fan	Steam	Shipping
Charles Feaster Coal Co.	Charles Feaster	Rosehill	Shaft	Room and pillar	Furnace	Horse	Local
Deaver & Toy Brothers	William Deaver	Beacon	Shaft	Room and pillar	Furnace	Horse	Local
Atwood Coal Co.		Blythe	Shaft	Room and pillar	Fan	Steam	Shipping
Eveland Coal Co.	John Price	Eveland	Shaft	Room and pillar	Fan	Steam	Shipping
Kennebec Coal Co.	A. Love	Givin	Shaft	Room and pillar	Furnace	Horse	Local
Western Fuel Co.	G. E. Fraker	Oskaloosa	Slope	Room and pillar	Fan	Steam	Shipping
National Coal Co.	Charles Logue	Beacon	Slope	Room and pillar	Fan	Steam	Shipping
Amos Gray Coal Co.	Amos Gray	Eddyville	Shaft	Room and pillar	Grate	Horse	Local
Clement & Edwards Coal Co.	Dan Edwards	Beacon	Slope	Room and pillar	Furnace	Steam	Shipping
Drew & Dunning Coal Co.	James Dunning	Eddyville	Slope	Room and pillar	Furnace	Horse	Local
Albers & Walraven Coal Co.	T. H. Albers	Eveland	Shaft	Room and pillar	Furnace	Horse	Local
R. L. Parcell	R. L. Parcell	Beacon	Slope	Room and pillar	Furnace	Horse	Local
Jas. Studham Coal Co.	Jas. Studham	New Sharon	Shaft	Room and pillar	Furnace	Horse	Local
American Coal Co.	William Phillips	Oskaloosa	Slope	Room and pillar	Fan	Steam	Shipping
Crawford Coal Co.	John Crockshanks	Buxton	Shaft	Room and pillar	Fan	Steam	Shipping
Crickett Coal Co.	James Neagle	Crickett	Shaft	Room and pillar	Fan	Steam	Shipping
Williams Bros. Coal Co.	W. S. Williams	New Sharon	Slope	Room and pillar	Fan	Steam	Local
W. S. Williams	W. S. Williams	New Sharon	Slope	Room and pillar	Furnace	Steam	Local
Greenridge Coal Co.	J. M. Timbrell	Laconta	Shaft	Room and pillar	Fan	Steam	Shipping
Consolidation Coal Co.	B. C. Buxton	Buxton	Shaft	Room and pillar	Fan	Steam	Shipping

MONROE COUNTY.

Consolidation Coal Co. No. 10	B. C. Buxton	Buxton	Shaft	Room and pillar	Fan	Steam	Shipping
Consolidation Coal Co. No. 11	B. C. Buxton	Buxton	Shaft	Room and pillar	Fan	Steam	Shipping
Consolidation Coal Co. No. 12	B. C. Buxton	Buxton	Shaft	Room and pillar	Fan	Steam	Shipping
Consolidation Coal Co. No. 13	B. C. Buxton	Buxton	Shaft	Room and pillar	Fan	Steam	Shipping
Regal Coal Co.	G. E. Fraker	Oskaloosa	Shaft	Room and pillar	Fan	Steam	Shipping
Central Coal Co. No. 2	T. L. Evans	Hickory	Slope	Room and pillar	Furnace	Steam	Shipping
Central Coal Co. No. 3	T. L. Evans	Hickory	Slope	Room and pillar	Furnace	Steam	Shipping
Central Coal Co. No. 4	T. L. Evans	Hickory	Shaft	Room and pillar	Furnace	Steam	Shipping
Coalfield Fuel Co.	Chas. Bloomfield	Coalfield	Slope	Room and pillar	Fan	Steam	Shipping
Bethel Coal Co.	Jas. Boden	Coalfield	Slope	Room and pillar	Furnace	Horse	Shipping
Reeves Coal Co.	J. O. Reeves	Coalfield	Slope	Room and pillar	Furnace	Horse	Local
Thomas Bridges Coal Co.	Thomas Bridges	Eddyville	Slope	Room and pillar	Furnace	Horse	Local
Abram Hiltabidle Coal Co.	Abram Hiltabidle	Eddyville	Slope	Room and pillar	Furnace	Horse	Local

MARION COUNTY.

English Creek Coal Co.	J. H. Ramsay	Oskaloosa	Shaft	Room and pillar	Fan	Steam	Shipping
William Miller Coal Co.	William Miller	Knoxville	Slope	Room and pillar	Furnace	Horse	Local
J. T. Hays Coal Co.	J. T. Hays	Knoxville	Slope	Room and pillar	Furnace	Horse	Local
Samuel Ruckman	Samuel Ruckman	Knoxville	Slope	Room and pillar	Furnace	Horse	Local
Brennan & White Coal Co.	John Brennan	Hamilton	Slope	Room and pillar	Natural	Horse	Local
Mammoth Vein Coal Co. No. 5	Lawrence Love	Everist	Shaft	Room and pillar	Fan	Steam	Shipping
Mammoth Vein Coal Co. No. 9	Lawrence Love	Everist	Slope	Room and pillar	Furnace	Horse	Shipping
Mammoth Vein Coal Co. No. 11	Lawrence Love	Everist	Slope	Room and pillar	Furnace	Electric	Shipping
Mammoth Vein Coal Co. No. 10	Lawrence Love	Everist	Slope	Room and pillar	Furnace	Horse	Shipping
Union Coal Co.		Pella	Shaft	Room and pillar	Fan	Steam	Local
Lose Vein Coal Co.	Frank Campbell	Bussey	Slope	Room and pillar	Furnace	Horse	Local
Thomas Clark	Thos. Clark	Flagler	Slope	Room and pillar	Furnace	Horse	Local
Lone Star Coal Co.	Phil Bishop	Harvey	Slope	Room and pillar	Furnace	Horse	Local
Harvey Hays Coal Co.	Harvey Hays	Knoxville	Slope	Room and pillar	Furnace	Horse	Local
Buwaldo Brothers Coal Co.	J. Buwaldo	Pella	Shaft	Room and pillar	Fan	Steam	Local
J. W. Swingle Coal Co.	J. W. Swingle	Marysville	Slope	Room and pillar	Furnace	Horse	Local
Lone Star Coal Co.	J. L. Rickabaugh	Otley	Slope	Room and pillar	Furnace	Horse	Local
Youkon Coal Co.	J. B. Vreeselaar	Otley	Slope	Room and pillar	Furnace	Steam	Local
Knoxville Coal Co.	Harry Booth	Knoxville	Slope	Room and pillar	Furnace	Horse	Shipping

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

WAPELLO COUNTY.

Name of Company	Superintendent	Postoffice Address	Shaft or Slope	Kind of Working	How Ventilated	Power Used	Shipping or Local
William Dempster	William Dempster	Ottumwa	Shaft	Room and pillar	Furnace	Horse	Local
Henry McNabb & Sons	Henry McNabb	Ottumwa	Shaft	Room and pillar	Furnace	Horse	Local
Standard Coal Co	Job Hyde	Ottumwa	Shaft	Room and pillar	Fan	Steam	Local
Ottumwa Brick & Construction Co	Thomas Williams	Ottumwa	Shaft	Room and pillar	Fan	Steam	Shipping
Anchor Coal Co	W. R. Daun	Ottumwa	Shaft	Room and pillar	Fan	Steam	Shipping
Star Coal Co	Samuel Tovera	Ottumwa	Slope	Room and pillar	Fan	Steam	Local
Phillips Fuel Co. No. 5	E. J. Erskine	Rutledge	Shaft	Room and pillar	Fan	Steam	Shipping
Phillips Fuel Co. No. 7	E. J. Erskine	Rutledge	Shaft	Room and pillar	Fan	Steam	Shipping
Roseland Coal Co	Howel Price	Ottumwa	Shaft	Room and pillar	Fan	Steam	Shipping
J. J. Halton Coal Co	J. J. Halton	Ottumwa	Slope	Room and pillar	Furnace	Horse	Local
Manuel Arandus Coal Co	Manuel Arandus	Ottumwa	Slope	Room and pillar	Furnace	Horse	Local
Brown Bros. Coal Co	Charles Brown	Ottumwa	Shaft	Room and pillar	Fan	Steam	Local
J. S. Davis & Sons	J. S. Davis	Eddyville	Slope	Room and pillar	Furnace	Horse	Local
Geo. Ryerson Coal Co	Geo. Ryerson	Kirkville	Shaft	Room and pillar	Furnace	Horse	Local
Geo. Knight Coal Co	Geo. Knight	Kirkville	Shaft	Room and pillar	Furnace	Horse	Local
J. M. Sickles Coal Co	J. M. Sickles	Eldon	Shaft	Room and pillar	Furnace	Horse	Local
McIntosh & Crane Coal Co	William McIntosh	Eldon	Shaft	Room and pillar	Furnace	Horse	Local
W. A. Goodwin Coal Co	W. A. Goodwin	Eldon	Shaft	Room and pillar	Furnace	Horse	Local
John Kelly & Sons	John Kelly	Eldon	Shaft	Room and pillar	Furnace	Horse	Local
James Newell Coal Co	James Newell	Blakesburgh	Shaft	Room and pillar	Furnace	Steam	Local

VAN BUREN COUNTY.

H. Findlay & Son Coal Co	H. Findlay	D'ds-Leando	Shaft	Room and pillar	Furnace	Horse	Shipping
Ratcliff Coal Co	H. L. Ratcliff	D'ds-Leando	Shaft	Room and pillar	Furnace	Horse	Shipping
Felmelee Coal Co	A. M. Felmelee	D'ds-Leando	Shaft	Room and pillar	Furnace	Horse	Shipping
Cahill Coal Co. No. 1	P. M. Cahill	Farmington	Shaft	Room and pillar	Furnace	Horse	Local
Cahill Coal Co. No. 2	P. M. Cahill	Farmington	Shaft	Room and pillar	Furnace	Horse	Local
Hessler Coal Co	John Hessler	Farmington	Shaft	Room and pillar	Furnace	Horse	Local
H. Knott Coal Co	H. Knott	Farmington	Slope	Room and pillar	Furnace	Horse	Local
A. R. Gardener Coal Co	A. R. Gardener	Bentonsport	Slope	Room and pillar	Furnace	Horse	Local

WARREN COUNTY.

Diamond Coal Co	W. A. Jones	Lacona	Shaft	Room and pillar	Furnace	Horse	Local
Miller & Hanson Coal Co	C. H. Hanson	Carlisle	Shaft	Room and pillar	Natural	Horse	Local
A. B. Keeney Coal Co	A. B. Keeney	Carlisle	Shaft	Room and pillar	Furnace	Horse	Local
Middle River Coal Co	Henry Castings	Ford	Shaft	Room and pillar	Furnace	Horse	Local
B. D. Clark Coal Co	B. D. Clark	Norwalk	Shaft	Room and pillar	Furnace	Horse	Local
Bales Coal Co	N. D. Bales	Milo	Shaft	Room and pillar	Furnace	Horse	Local

JEFERSON COUNTY.

Bates & Spratt Coal Co	H. M. Bates	Fairfield	Shaft	Room and pillar	Furnace	Horse	Local
Fairfield Coal Co	Job Deer	Fairfield	Shaft	Room and pillar	Furnace	Horse	Local

KEOKUK COUNTY.

Armstrong Bros. Coal Co	Thos. Armstrong	What Cheer	Shaft	Room and pillar	Furnace	Horse	Local
Lee Brothers Coal Co	James Lee	What Cheer	Shaft	Room and pillar	Furnace	Steam	Local
Maxwell Coal Co	Robt. Maxwell	What Cheer	Shaft	Room and pillar	Jet	Horse	Local
Carson Bros. Coal Co	Thos. Carson	What Cheer	Shaft	Room and pillar	Furnace	Horse	Local
What Cheer Coal Co	Jas. A. Cowan	What Cheer	Shaft	Room and pillar	Grate	Horse	Local

DAVIS COUNTY.

Soap Creek Coal Co	Harry Darrah	Carbon	Slope	Room and pillar	Furnace	Horse	Shipping
George Clark Coal Co	George Clark	Floris	Slope	Room and pillar	Natural	Horse	Local
George Christy Coal Co	George Christy	Floris	Slope	Room and pillar	Grate	Horse	Local
James Fayne	James Fayne	Eldon	Slope	Room and pillar	Furnace	Horse	Local
Henry Hastings	Henry Hastings	Floris	Slope	Room and pillar	Furnace	Horse	Local

TABLE No. 1.

SHOWING NUMBER OF MINES, OUTPUT OF COAL, NUMBER OF MINERS AND OTHER EMPLOYES IN DISTRICT NO. 2, FOR YEAR ENDING JUNE 30, 1907.

Name of County	Number of mines	Amount of coal of all kinds produced	Number of miners employed	Number of other inside employes	Number of outside employes	Total number of employes
Monroe County (part)	9	1,095,473	1,033	336	85	1,444
Mahaska	35	689,870	1,001	345	179	1,525
Marion	18	394,481	555	151	69	775
Wapello	19	273,556	449	107	73	629
Keokuk	5	15,000	29	7	6	42
Van Buren	6	13,050	42	6	13	61
Warren	4	3,505	23	2	3	28
Davis	1	2,410	10	2	4	16
Jefferson	2	1,900	4	1	1	6
Total	99	2,489,305	3,146	947	433	4,526

TABLE No. 2.

SHOWING NUMBER OF MINES, OUTPUT OF COAL, NUMBER OF MINERS AND OTHER EMPLOYES IN DISTRICT NO. 2, FOR YEAR ENDING JUNE 30, 1908.

Name of County	Number of mines	Amount of coal of all kinds produced	Number of miners employed	Number of other inside employes	Number of outside employes	Total number of employes
Monroe County (part)	13	865,687	876	568	114	1,558
Mahaska	35	772,468	1,075	330	181	1,586
Marion	20	327,745	498	134	61	693
Wapello	20	244,214	388	106	65	559
Keokuk	5	11,900	24	5	6	35
Van Buren	8	17,518	39	10	17	66
Warren	6	5,950	29	3	5	37
Davis	5	4,364	22	3	8	33
Jefferson	2	2,000	8	2	2	12
Total	114	2,251,846	2,959	1,161	459	4,579

BIENNIAL REPORT OF THE

THIRD DISTRICT.

EMBRACING THE FOLLOWING COUNTIES:

POLK,
WEBSTER.
GREENE,
SCOTT,
JASPER,
BOONE,
GUTHRIE,
DALLAS,

EDWARD SWEENEY, Inspector,
Des Moines, Iowa.

LETTER OF TRANSMITTAL.

HON. ALBERT B. CUMMINS, Governor of Iowa:

SIR,—I have the honor to submit herewith the report of the Third Inspection District, covering the biennial period ending June 30, 1908.

Very respectfully submitted,

EDWARD SWEENEY, Inspector.

REPORT OF THE THIRD DISTRICT.

The coal industry of the Third District for the biennial period will not show any material increase, the facts being suggestive of the lull that has marked industrial enterprise during the past year. The causes operating to make a quiet wage market have not been committed to the writer for definition. Stocks and industrial labor, and capital all seem to have shared in the loss consequent upon the financial depression of 1907. The mining industry of the State of Iowa has enjoyed much better conditions than has existed in other of the coal producing states; the operations of our coal properties has been more steady, and there has been much less friction among the forces which give life to Iowa wage labor industry. During the agitation which for a time became quite acute, when money was scarce and hard to get, employers were unable to secure from the banks cash with which to meet their wage pay roll. There was fear; there was suspicion, and wage toilers in neighboring states were having trouble. It was then intelligence and wisdom played its part. There seems to be no limit to the good that is possible to our mining labor and capital through the joint conciliatory movement, which has existed between our coal operators and coal miners for the past ten years. Heartily with the idea, and generous in the practice of conciliation and arbitration our Iowa coal miners and operators have been to the front on every question raised in the national work. Yet when interstate competitive questions affecting the larger coal producing states of the central west threatened conflict, as a remedy, the strong minds of Iowa's mining fraternity kept their ears close to the ground and kept their hearts and hands locked in resolution for peace and fair play. They realized that jointly they must, very largely by their own efforts, make for the good or share in full measure the bad conditions that might come to the business. The motto of peace and fair play, happily with us, seems to be the one governing in the Iowa coal mining industry. We have passed through the financial stringency period with no scars of battle and while the slack

work period has continued to some extent, I am pleased to report our mining conditions much better from every point of view, than those that govern in neighboring coal producing states.

Some changes have taken place during the biennial period which are of no small significance to the Iowa coal mining industry. It is said that merit shall have its reward. While there is no doubt but that many worthy men or women have not realized in life the reward which they merited, it is, however, the safest in life that we strive to be right in doing good, and for the most good possible. The Iowa miners lost their president of the past several years by his election to the national vice presidency of the organization, but their loss has been a gain to the mining industry of the entire nation. More than that, the new field of Mr. John P. White's labors will bring his personality and resourcefulness in touch with the industrial life of the nation. Wage labor everywhere has learned that the Iowa miners have had a chief and leader equal to the best in the nation. The belief is general that Iowa's favorite son will prove himself equal to every duty and worthy of greater honors.

Mr. John P. Reese, who went from the miners ranks into the responsible position of commissioner for the Iowa Coal operators, and who has filled the position of commissioner ever since the office was created several years ago, a sort of a peace envoy, has recently resigned such position and has become mine superintendent at Buxton, for the Northwestern mining interests. It is to be hoped that Mr. Reese in his new field of labor may win new laurels to the fame and honor he has already achieved.

As successor to the miners retiring president and the operators commissioner, Mr. W. W. White of Appanoose county, and formerly Vice President, has been advanced to the state presidency for our Iowa miners, while Mr. Joseph Sharp, who for many years has been active as a leader for the miners, succeeds John P. Reese, as a commissioner for the Iowa Coal Operators' Association. Both of these men have had years of practical experience in mining affairs and will, no doubt, prove themselves worthy of the confidence reposed in them. We wish them every possible success.

A number of new mines have been developed and put in operation during the past two years, and many valuable improvements have been made all of which will be noted in the report covering the coal production by counties.

POLK COUNTY.

The production of coal mined in Polk county for the first half of the biennial period ending June 30, 1908, amounted to 1,325,876 tons. This was a net gain for the county over the preceding year of 159,652 tons. During the first year of the biennial period which ended June 30, 1907, 3,168 persons were given employment in and around the mines of the county. More than a million and a half dollars in wages were paid these employes during the year, and the most of this money found its way into the channels of trade in Polk county. In other words more than fifty thousand dollars is paid to the miners of Polk county every pay day, which the state law specifies shall be the first Saturday after the fifth and fifteenth of each month.

During the last fiscal year of the biennial period which ended June 30, 1908, the production of Polk county amounted to 1,358,097 tons. This was a net decrease from the amount mined the preceding year of 67,779 tons. The decreased tonnage may be explained by the fact that during the biennial period a number of mines in the county were abandoned. However, the companies abandoning these mines have in a number of cases already secured new leases and begun new developments, so that in the coming year we look for the production in the county to increase.

During the biennial period a number of fires occurred at the mines of the county destroying considerable property and interfering, in a measure with the coal production of the county. On the morning of March 6, 1907, a fire destroyed the boiler and engine house of the Madison Coal Company. A delay of two weeks in the operation of the mine was caused by this fire. On the morning of November 12, 1907, a fire occurred at the Maple Block mine east of Des Moines, destroying the scales, scale house and the box car loader. Operations were stopped for but a few days here on account of this fire. Sometime in October, 1907, fire broke out in the Marquisville mine of the Des Moines Coal & Mining Company, and so serious did this prove that it was deemed advisable to abandon the mine, which was done. The company just previous to this fire had extended the tailrope and were preparing for a winter's work, intending to abandon the mine April 1, 1908. But little loss of machinery and mine fixtures attended this fire.

A number of mines in Polk county were abandoned during the biennial period. The Keystone and Center mines were abandoned in the northwest part of the city. The Des Moines Coal & Mining Company abandoned its mine at Marquisville, north of Des Moines. The Elko and Capital mines were abandoned in south Des Moines, and the Diamond Jo mine at Runnells was abandoned. The Smith-Lowe Company also abandoned its mine No. 3 at Carbondale. The abandonment of these mines while having some effect on the production of coal for the year just ended, are not likely to affect the coal production of the county in the future very much, as has already been stated above a number of these companies are already preparing to open new mines in the county, and these new mines will be larger and better equipped and will thus add to the production of the county. The Keystone Company is already

sinking a shaft just to the north of Valley Junction, where they have a good field of coal, and they will have connection with the Chicago, Milwaukee & Saint Paul Railway, and become a shipping mine. The Gibson Company are developing a new mine near Clive and will also have connection with the Milwaukee road. Their old mine near Altoona is still being operated. The Valley Union Coal Company have opened a new mine to the south of Valley Junction. They have no railroad connection, but will operate to supply the local trade of Valley Junction. The Beck Coal Company have opened a new mine to the southeast of the city, and the Caleb Johns Company have a new mine to the south side. Both of these mines are doing a good business. Blount & Evans are opening a new mine near the Army Post and expect soon to be ready for business. About a year ago the Anderson Coal Company opened up a new mine near Ankeny. They have connection with the North-Western Railroad and are doing a good business. The new mine No. 2 of the Enterprise Coal Company at Enterprise is being developed nicely and bids fair to be a good producer. The Swanwood Coal Company are opening up a new mine to the east of the lease of the Des Moines Coal & Mining Company, near Marquisville. They will be ready for business soon. Other companies that will open up new mines in the county soon are the Capital and Center companies.

With the development of these new mines Polk county will no doubt show a large increase in her production the coming year, and we confidently expect the production of the county to reach close to, if not above the two million mark.

JASPER COUNTY.

Coal has been mined in Jasper county for more than fifty years. The first coal in the county was mined at the Slaughter Bank, one and one-half miles east of Colfax, in section 32 of Sherman township in 1850. Coal was also mined along Cherry Creek in Newton township at an early date. The First Biennial Report of the Iowa State Mine Inspector contains the following estimate:

> A majority of the superficial area of this county is barren of coal; the most of the coal lies in the southwest portion of the county, on North Skunk River and its tributaries, and the tributaries of the Des Moines River, but not more than the superficial area of one township is underlaid with coal of workable thickness.

Later exploitations have proved the extreme conservatism of these statements. This county producd in 1903, 323,312 tons of coal; in 1904, 302,599 tons; in 1905, 305,027 tons; in 1906, 333,307; in 1907, 385,298 tons, and in 1908, 467,552 tons.

Some coal is mined near Newton; some near Monroe and Prairie City, but the most of the coal now taken out is mined near Seevers and Colfax. The largest shipping mines in the county are located near Seevers and Colfax and are operated by the Colfax Consolidated Coal Company. The Warrick Bros.' mine also does a shipping business. All other mines in the county are local mines and for the most part are operated only during the fall and winter months. Employment is given to some seven

or eight hundred miners and other employes in and around the mines of this county.

For the biennial period ending June 30, 1908, there was reported to this office from Jasper county as occurring in and around the mines of the county, four fatal and nine non-fatal accidents.

BOONE COUNTY.

Boone county is surrounded on all sides by coal counties and has long been known among the leading producing counties of the state. Boone was one of the first counties in the state to assume prominence in the coal industry and mining has gone on steadily for upwards of 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 portion of the region, around Angus, several veins are known to exist. It is also quite probable that other beds than those at present generally known occur lower down. In fact some of the deeper borings in different parts of the county clearly indicate the presence of other coal horizons at greater depth than have yet been reached by shafts.

Formerly the largest mines in the county were operated at Angus or in that vicinity, but at present but little coal is mined there. At present mining operations are carried on in the vicinity of Boone, at Fraser, in the north part of the county and at Ogden west of Boone. Considerable mining was formerly done near Moingona, but at the present time but little coal is mined there. At Ogden a new mine was opened up about a year ago by the Ogden Coal Company. A vein of coal from three to five feet thick is encountered here at a depth of 270 feet. The coal is of good quality and extensive operations will be carried on by this company. On account of the above company finding a good vein at the depth stated, 270 feet, considerable deep prospecting is now going on and it is hoped that this will result in continued development of the coal industry of Boone county. While the tonnage for the past year will show a considerable falling off in the production, with the new mines in operation we look for the coming year to be fully as good as any year past. Boone county produced for the biennial period ending June 30, 1908, 456,573 tons of coal. Employment was given to more than eight hundred men in and around the mines of the county. But few accidents were reported to this office from this county for the biennial period.

DALLAS COUNTY.

Dallas county is underlain over nearly its entire area by the lower coal measure beds (Des Moines Formation) with their numerous veins of coal, and it is the prediction of many that the coal output of Dallas county within a very short period will place her well up in the line of coal producing counties in the Third District. This prediction would seem warranted from the showing made by this county within the last

three years. At the close of the fiscal year ending June 30, 1906, Dallas county was credited with but 9,888 tons of coal mined in the entire county. Possibly the tonnage was a little in excess of this as reports were not received from some of the small local mines. A year later the production of the county reached 31,370 tons, and for the fiscal year ending June 30, 1908, the tonnage of Dallas county reached the highest point in her history as a coal producing county, the tonnage for this last year being 108,700 tons mined. This increase of tonnage is because of the opening in the county of two good shipping mines; the Scandia mine near Scandia, and the High Bridge mine near High Bridge. Both of these mines are being developed nicely and we look for a larger output from them the coming year. It is quite likely that the experience of these mines will be the cause of other mines being opened up in county. We understand that already there has been done considerable prospecting, and this work is still going on with a view to the location of other mines in the county. Prior to the opening of the Scandia mine the prospecting had been at too shallow a depth. The vein at the Scandia mine is found at a depth of 170 feet.

But one fatal accident occurred in Dallas county for the period ending June 30, 1908.

WEBSTER COUNTY.

This county contains the most northerly coal mines in the state. Webster has long been known as one of the leading coal counties and is probably more favorably situated than any other coal county in the state for shipping its production northward to the large areas which have no fuel supply of their own.

The coal bearing strata probably have a considerable thickness in the upland away from the Des Moines river on both sides. Southward from Fort Dodge the coal measures rapidly thicken until at the southern border of the county they doubtless have a maximum thickness of not less than 150 to 200 feet. The coal bearing strata of Webster county are largely argillaceous shales with comparatively little sandstone. In these shales are intercallated numerous lenticular layers of coal which vary from three to five feet in thickness. Thus instead of one continuous seam there are a number of horizons yielding coal.

At the present time the mines of the county are clustered around a few places; near Coalville and Kalo on opposite sides of the Des Moines river seven miles below Fort Dodge, and at Lehigh about fifteen miles south of Fort Dodge. Formerly considerable coal has been mined at and near Fort Dodge and west of Fort Dodge on Lizard Creek, near Tara.

The coal of this county is of very good quality and finds a ready market. For the biennial year ending June 30, 1908, the coal production of Webster county amounted to but 177,394 tons. This is a falling off of nearly 50 per cent in the production of former years. We look, however, to see Webster county produce in the near future almost twice this tonnage. About four or five hundred men are given work in and around the mines of the county.

GREENE COUNTY.

The output of coal from Greene county has not been large for many years. Up to the present time workable seams have only been opened up in the eastern part of the county. At Grand Junction the Goodwin Brick & Tile Company have operated a mine for some years. The coal here is 18 inches in thickness, but beneath the coal is an excellent bed of fireclay having a very considerable thickness. It is used for the manufacture of brick and tile. In fact the mining of the clay forms the principal work of the mine, the coal taken out in connection with it being used largely for fuel in kilns. Eight miles south of Grand Junction at Rippey coal has been mined for years, and mining operations in this vicinity are still being carried on, but the mines are small and the production is not at all large. The mines here are operated only during the fall and winter months.

In the southeastern corner of the county coal has been extensively mined near Angus. There was at one time more than a dozen mines in operation in this part of the county.

But few mines are operated in the county now, and these are operated to supply the local demand for coal. No shipping mines in the county.

The output of coal produced in Greene county for the biennial period ending June 30, 1908, amounted to 44,531 tons. About one hundred persons are given employment through the coal mining industry of this county.

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 place, 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 strata east of Jasper county in which coal is mined.

GUTHRIE COUNTY.

Coal has been mined in Guthrie county for many years, but owing to the lack of railroad facilities no shipping mines are operated, the mines in operation supplying the local trade only. Mining operations are carried on in the vicinity of Fanslers, Panora and Bayard, also along the Middle Raccoon river, near Stuart, and in both the northeast and the southwest corners of the county.

As the mines of the county are operated solely for the local trade they are not large and the equipment not extensive. They employ, usually, from five to twenty men during the fall and winter months and usually begin operations about August and September and continue until April. No facilities are provided for storing coal and considerable business is lost in this way, the mines aiming to keep pace with the demand only from day to day.

The vein of coal mined in tne county is not thick but in the most of places is of good quality and a free burner. The coal of this county is mined on the longwall system. But few mines in the county are equipped with fan ventilation, and the hoisting power at these mines consists of horse and gin.

A majority of the mines of the county are now provided with the second opening, and for the most part the mines conform to the requirements of the state mining laws. Only about a dozen mines are now operated. As no powder is used in mining the coal in these mines but few accidents occur.

During my inspections of the mines of this county I have found them for the most part satisfactory as regards sanitary conditions, safety appliances, etc. In a few cases I found mines with but one opening working more men than allowed by law. I immediately requested the operators to comply with section 2486 of the Iowa State Mining Laws.

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
Saylor Coal Co. No. 2	J. D. Owen	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Smith-Lowe Coal Co. No. 4	E. C. Smith	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Norwood-White Coal Co.	David Reese	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Gibson Coal Co.	John Gibson	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Maple Block Coal Co.	H. M. Shuler	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Bloomfield Coal Co.	George Yarn	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Keystone Coal Co.	E. M. Gray	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Eagle Coal Co.	E. A. Sayre	Des Moines	Shaft	Room and pillar	Fan	Steam	Local
West Riverside Coal Co.	Jos. Jones	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Flint Brick & Coal Co. No. 2	Eugene Brecht	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Flint Brick & Coal Co. No. 3	Eugene Brecht	Des Moines	Shaft	Room and pillar	Fan	Steam	Local
Glenwood Coal Co.	Caleb Johns	Des Moines	Shaft	Room and pillar	Fan	Steam	Local
Beck Coal Co.	Thos. Beck	Des Moines	Shaft	Room and pillar	Fan	Steam	Local
Madison Coal Co.	Ralph Madison	Des Moines	Shaft	Room and pillar	Fan	Steam	Local
Walnut Creek Coal Co.	Ben Bosley	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Economy Coal Co.	Peter Reynolds	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Hollingsworth Coal Co.	Geo. Simpson	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Bennett Bros. Coal Co.	John Bennett	Des Moines	Shaft	Room and pillar	Fan	Steam	Local
Coaldale Fuel Co.	John Owen	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Enterprise Coal Co. No. 1	G. E. Walters	Enterprise	Shaft	Room and pillar	Fan	Steam	Shipping
Enterprise Coal Co. No. 2	G. E. Walters	Enterprise	Shaft	Room and pillar		Steam	Shipping
Valley Coal & Mining Co.	H. Bosley	Commerce	Shaft	Long wall	Fan	Steam	Local
Iowa Coal Co.	John Thomas	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Shaw Coal Co.	Frank Adelfinger	Des Moines	Shaft	Room and pillar	Fan	Steam	Local
Merchant, Johnson & Co.	Jas. Marchant	Commerce	Shaft	Room and pillar	Natural	Steam	Local
Valley Union Coal Co.	B. C. Bosley	Valley Jct.	Shaft	Room and pillar	Fan	Steam	Shipping
Swanwood Coal Co.	Josh Norwood	Des Moines	Shaft	Room and pillar	Fan	Steam	Local
Western Coal & Mining Co.	Thos. Carpenter	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Anderson Coal Co.	W. B. Evans	Des Moines	Shaft	Room and pillar	Fan	Steam	Shipping
Avon Coal Co.	F. R. Shultz	Levy	Shaft	Room and pillar	Natural	Horse	Local
Blount & Evans Coal Co. No. 1	I. Evans	Des Moines	Shaft	Room and pillar	Fan	Steam	Local
Blount & Evans Coal Co. No. 2	I. Evans	Des Moines	Shaft	Room and pillar	Fan	Steam	Local
Caleb Johns Coal Co.	Caleb Johns	Des Moines	Shaft	Room and pillar	Fan	Steam	Local

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
Crooked Creek Coal & Railroad Co.	F. E. Wilson	Webster C'y	Shaft	Long wall	Fan	Steam	Shipping
Craig & Dawson Coal Co.	Wm. Dawson	Kalo	Shaft	Long wall	Fan	Steam	Shipping
Rogers Coal Co.	E. W. Collins	Fort Dodge	Shaft	Room and pillar	Fan	Steam	Shipping
Johnson Coal Co.	A. P. Campbell	Kalo	Shaft	Long wall	Furnace	Horse	Shipping
Sam McClure Coal Co.	Sam McClure	Lehigh	Shaft	Long wall	Fan	Steam	Shipping
Butler & Rhodes Coal Co.	D. Rhodes	Coalville	Shaft	Long wall	Fan	Steam	Local
BOONE COUNTY.							
Boone Coal & Mining Co. No. 5	Robt. Kennedy	Fraser	Shaft	Long wall	Fan	Steam	Shipping
Boone Coal & Mining Co. No. 6	Robt. Kennedy	Fraser	Shaft	Long wall	Fan	Steam	Shipping
Eagle Coal Co.	W. J. Conway	Boonesboro	Shaft	Long wall	Fan	Steam	Shipping
The Heaps Coal Co.	A. Heaps	Boonesboro	Shaft	Long wall	Fan	Steam	Shipping
Rogers Coal Co.	Geo. W. Rogers	Incline	Shaft	Long wall	Fan	Steam	Shipping
Big Five Coal Co.	A. L. Carpenter	Moingona	Shaft	Long wall	Steam jet	Horse	Shipping
W. D. Johnson Coal Co.	H. H. Canfield	Boonesboro	Shaft	Long wall	Fan	Steam	Shipping
Steve York Coal Co.	Steve York	Madrid	Shaft	Long wall	Furnace	Horse	Local
Heaps & Crowe Coal Co.	George Heaps	Boonesboro	Shaft	Long wall	Fan	Steam	Shipping
John Birmingham Coal Co.	John Birmingham	Moingona	Shaft	Long wall	Exhaust of pump	Steam	Shipping
Rogers Coal Co.	P. J. Benson	Boonesboro	Shaft	Long wall	Fan	Steam	Shipping
Ogden Coal Co.	Thos. Carpenter	Ogden	Shaft	Room and pillar	Fan	Steam	Shipping
Smiley & Heaps Coal Co.	G. Heaps	Boonesboro	Shaft	Room and pillar	Fan	Steam	Shipping
Martin Pestotnik Coal Co.	Martin Pestotnik	Boone	Slope	Room and pillar	Natural	Horse	Local
JASPER COUNTY.							
McAllister Coal Co.	——— McAllister	Newton	Shaft	Room and pillar	Fan	Steam	Local
Colfax Consolidated Coal Co. No. 7	Wm. Abrams	Colfax	Shaft	Room and pillar	Fan	Steam	Shipping
Colfax Consolidated Coal Co. No. 8	Wm. Abrams	Colfax	Shaft	Room and pillar	Fan	Steam	Shipping
French Coal Co.	E. P. French	Newton	Shaft	Room and pillar	Natural	Steam	Local
Carson Bros. Coal Co.	A. Carson	Newton	Shaft	Room and pillar	Natural	Horse	Local
Lister Coal Co.	Alfred Lister	Newton	Shaft	Room and pillar	Furnace	Steam	Local
Warrick Bros. Coal Co.	John Warrick	Colfax	Shaft	Room and pillar	Fan	Horse	Shipping

Charley Calvert Coal Co.	Charley Calvert	Prairie City	Drift	Room and pillar	Furnace	Horse	Local
Snooks Bros. Coal Co.	Thos. Snooks	Newton	Shaft	Room and pillar	Natural	Horse	Local
Hanson & Meade Co.	J. A. Waddell	Prairie City	Shaft	Room and pillar	Exhaust of pump	Steam	Local
Jas. J. Gray Coal Co.	John Bruce	Monroe	Slope	Room and pillar	Furnace	Horse	Local
John Bruce Coal Co.	John Bruce	Monroe	Shaft	Room and pillar	Furnace	Horse	Local
GUTHRIE COUNTY.							
J. J. Clark	J. J. Clark	Bagley	Shaft	Long wall	Natural	Horse	Local
Batschlet & Marchant Coal Co.	John Marchant	Panora	Shaft	Long wall	Furnace	Horse	Local
J. W. King Coal Co.	J. W. King	Bagley	Shaft	Long wall	Fan	Horse	Local
Murphy & Mallon Coal Co.	W. F. Murphy	Yale	Shaft	Long wall	Furnace	Horse	Local
Scott Coal Co.	W. H. Scott	Yale	Shaft	Long wall	Natural	Horse	Local
Sipe & Hughes Coal Co.	J. D. Sipe	Yale	Shaft	Long wall	Furnace	Horse	Local
Mansell Coal Co.	John Mansell	Yale	Shaft	Long wall	Fan	Horse	Local
Reese Coal Co.	David Reese	Panora	Shaft	Long wall	Furnace	Horse	Local
W. N. Thomas Coal Co.	W. N. Thomas	Stuart	Shaft	Long wall	Furnace	Horse	Local
Clipper Coal Co.	Wm. Merchant	Bagley	Shaft	Long wall	Furnace	Horse	Local
Greenbrier Coal Co.	E. E. Cleaveland	Jamaica	Shaft	Long wall	Natural	Horse	Local
Butler & Gibson Coal Co.	Will Gibson	Yale	Shaft	Long wall	Natural	Horse	Local
Hughes & Son Coal Co.	Jesse Hughes	Yale	Shaft	Long wall	Fire in bucket	Horse	Local
L. A. Stoddard	L. A. Stoddard	Stuart	Shaft	Long wall	Natural	Horse	Local
GREENE COUNTY.							
Buckeye Coal Co.	M. Feith	Rippey	Shaft	Room and pillar	Natural	Horse	Local
Goodwin Coal Co.	Thos. Goodwin	Grand Jct.	Shaft	Long wall	Fan	Steam	Shipping
Willow Grove Coal Co.	H. A. McElheny	Angus	Shaft	Long wall	Fan	Steam	Local
Keystone Coal Co.	Wm. Bennett	Angus	Shaft	Long wall	Furnace	Horse	Local
Snake Creek Coal Co.	Geo. Richards	Rippey	Shaft	Room and pillar	Exhaust of pump	Steam	Local
DALLAS COUNTY.							
Hutchison Bros. Coal Co.	W. C. Hutchison	Dawson	Shaft	Room and pillar	Fan	Steam	Shipping
Scandia Coal Co.	F. H. Zook	Madrid	Shaft	Room and pillar	Fan	Steam	Shipping
High Bridge Coal Co.	R. Heaps	High Bridge	Shaft	Room and pillar	Fan	Steam	Shipping
SCOTT COUNTY.							
Sass Bros. Coal Co.	J. Sass	Jamestown	Shaft	Room and pillar	Furnace	Horse	Local
McCullough Bros. Coal Co.	Walter McCullough	Buffalo	Slope	Room and pillar	Grate	Horse	Local
Fidley & Anderson	Wm. Fidley	Jamestown	Shaft	Room and pillar	Furnace	Horse	Local
Buckmeyer Coal Co.	Jas. Buckmeyer	Buffalo	Shaft	Room and pillar	Grate	Steam	Local
Winfield Coal Co.	Frank Winfield	Buffalo	Shaft	Room and pillar	Grate	Horse	Local

ACCIDENTS.

The subject of mine accidents is one of profound concern, and while our coal area is free from Marsh gas and we are not likely to ever have to report a gas explosion disaster, nevertheless, we are much alarmed over the increased number of accidents occurring in our Iowa mines. The increase is shown as coming to miners while working at the face of their working places. I regret to state that this increase in accidents at the working face indicates a carelessness on the part of the miners themselves, which of late years is painfully common. Many of the non-English speaking miners, who have come to us in large numbers during the last few years, are decidedly reckless in their method of workmanship, and evidently incapable of comprehending our mining rules and the meaning of our mining laws. This situation seems to apply to the entire American bituminous coal mining industry of the mining states. Where Marsh gas is found in large deposits and is generated in mysterious large bodies, great catastrophes have occurred recently. Human lives have been taken by the hundreds, property has been destroyed to the extent of millions of dollars, widows and orphans have come upon the scene as if by magic, communities have been changed, like a flash, from healthy, happy homes to that of a charnel house scene. Death and sorrow, maddened grief, hundreds of strangers in a stranger's country carrying their young in a sort of frenzy to and fro—no words can picture the meaning or misery of such a situation, no sight is blacker than that of a mine disaster and the gloom of a mine rescuing scene. Every mine owner, every coal miner who has eyes to see, ears to hear, must learn the necessity for his co-operation in the needed work of observing rules and obeying the law. Bold and positive action is needed all along the line to stay the terrible human slaughter. The terrible fact that more men are killed and maimed in our American coal mines than are killed by war or pestilence is a sad commentary upon the order of things.

At last there seems to be an awakening. Government inquiry is being made, and plans are being suggested for relief. The national government is aroused and actively striving for a remedy, an appropriation has been made and a semi-official department of mines is now building an experimental and testing station in the Pittsburgh, Pennsylvania mining district. The location is in the heart of the most dangerous of the mines containing gas, in the United States. Western Pennsylvania, West Virginia, and eastern Ohio have registered the larger list of dead from mine explosions. Extensive mining and permanently large coal tonnage is clearly with Pennsylvania and West Virginia. The state of Illinois, resourceful in large coal deposits and with a capacity of fifty or sixty million tons of coal per annum is free, or practically so, from gas. The selection of Pittsburgh, convenient to the seat of government, and the headquarters for the department of mines, which will no doubt be created by the next session of Congress, is quite appropriate. Much good is expected from this proposed mining department and experimental station. A meeting was held recently in Washington where mining men who spoke for miners and operators urged before the committees on Mines and Mining for a national mining department. The increase, and increasing number of killed and injured in our coal mines were the strongest reasons urged by all for government action. Rules and safety methods all implying a sort of compulsory education on mining, for miners and mine owners and managers that will protect life and property is in substance what is needed.

During the early days of June 1908 there was a notable meeting of mining men, the state mine inspectors of the various coal producing states, held in the State House at Indianapolis, Indiana. The object of the meeting was to effect an organization of all the mine inspectors in the United States, such organization to co-operate with the government at Washington and to be in position to share in the advantages resulting from the work of the Experimental Station. The state of Iowa was ably represented at this meeting by Mr. John Verner of the First District of Iowa. The selection of Mr. George Harrison, Chief of the Ohio Mine Inspection Service as the first president is indeed a just tribute and recognition of one of the old school of honest and faithful mining men. Mr. J. W. Paul, who was elected secretary of this organization, is a young man of the modern school. The official staff of this new national organization of state mine inspectors consists entirely of strong and capable men. We wish God speed to the new organization, and anticipate benefits in proportion and hope there will be practical co-operation between all parties concerned.

FATAL ACCIDENTS.

Fatal Accidents in District No. 3 For Two Years Ending June 30, 1908.

Date	Name of Deceased	Occupation	Cause of Death	Employed by—	County
1906.					
September 7	Wm. Leming	Miner	Struck by tail rope	Colfax Consolidated Coal Co.	Jasper
November 12	Chas. Westburg	Miner	Fall of slate	Bennett Bros. Coal Co.	Polk
December 6	Santi Celesti	Miner	Fall of slate	Saylor Coal Co.	Polk
December 24	John Richard Johnson	Miner	Fall of slate	Colfax Consolidated Coal Co.	Jasper
December 31	John Henderson	Miner	Fall of slate	Iowa Coal Co.	Polk
1907.					
January 3	Steve Zannatti	Shot examiner	Flying coal	Saylor Coal Co.	Polk
January 21	John Brown	Miner	Falling slate	Enterprise Coal Co.	Polk
January 21	C. E. Berggren	Miner	Fall of coal	Keystone Coal Co.	Polk
January 30	A. F. McCormick	Miner	Fall of coal	Enterprise Coal Co.	Polk
February 9	P. A. Turnell	Engineer	Boiler exploded	Risher Coal Co.	Boone
February 11	Sidney Rees	Driver	Run over by car	Des Moines Coal Co.	Polk
March 1	Peter Olesen	Miner	Fall of slate	Flint Brick & Coal Co.	Polk
May 20	Joe Hedaman	Miner	Fall of slate	Enterprise Coal Co.	Polk
June 5	Sam Lundstrum	Miner	Crushed by cage	Coaldale Fuel Co.	Polk
July 31	Frank Coe	Laborer	Fall of slate	Norwood-White Coal Co.	Polk
September 9	Gilbert Shaw	Operator	Fall of coal	Gilbert Shaw Mine	Jasper
September 10	John Holmberg	Miner	Fall of slate	Bennett Bros Coal Co.	Polk
September 12	Ed J. Quinn	Mine foreman	Fall of coal	Eagle Coal Co.	Polk
October 20	John Dotty	Miner	Fall of slate	Economy Coal Co.	Polk
October 26	W. H. Lammey	Miner	Fall of slate	Center Coal Co.	Polk
December 9	Theodore Benson	Miner	Fall of slate	High Bridge Coal Co.	Dallas
1908.					
January 8	Perry White	Miner	Fall of slate	Saylor Coal Co.	Polk
February 5	O. Countrl	Miner	Crushed by cage	Hollingsworth Coal Co.	Polk
February 25	W. A. Fuller	Miner	Fall of slate	Hollingsworth Coal Co.	Polk
March 3	Patrick McGrath	Miner	Fall of slate	Enterprise Coal Co.	Polk
May 22	Mike Sporri	Timberman	Fall of slate	Colfax Consolidated Coal Co.	Jasper
June 6	Dave Morgan	Coupler	Crushed by cage	Norwood-White Coal Co.	Polk
June 19	Chas. McElwain	Sinker	Crushed by dirt tub	Gibson Coal Co.	Polk

NON-FATAL ACCIDENTS.

Non-Fatal Accidents in District No. 3 For Two Years Ending June 30, 1908.

Date	Name	Occupation	Cause of Accident	Character of Injury	Mine Where Accident Occurred	County
1906.						
July 3	August Wenzel	Miner	Fall of slate	Fractured hip	Smith-Lowe Coal Co.	Polk
July 10	Frank Robusky	Driver	Caught between cars	Leg broken	Madison Mine	Polk
July 30	C. A. Monteith	Miner	Fall of slate	Thigh bruised	Coaldale Fuel Co.	Polk
August 1	Thos. Cosgrove	Miner	Fall of slate	Ribs broken	Flint Brick & Coal Co.	Polk
August 14	M. Stanford	Miner	Fall of slate	Back injured	Coaldale Fuel Co.	Polk
August 27	Albert Depew	Miner	Caught by cage	Body bruised	Heaps & Crowe Coal Co.	Boone
September 5	Ellis E. Crane	Miner	Fall of slate	Back injured	Walnut Creek Coal Co.	Polk
September 17	J. L. Ford	Miner	Kicked by mule	Leg and ribs broken	Enterprise Coal Co.	Polk
October 3	Reese P. Jones	Driver	Lunge by mule	Arm broken	Colfax Cons. Coal Co.	Jasper
October 16	James Shortell	Miner	Fall of slate	Back hurt	Bennett Bros. Coal Co.	Polk
October 21	Pete Beckett	Timberman	Fall of slate	Ribs broken	Saylor Coal Co.	Polk
October —	John Martenson	Topman	Crushed by timber	Leg broken	Delaware Coal Co.	Polk
October 26	Louis Corey	Driver	Run over by car	Foot crushed	Saylor Coal Co.	Polk
October 29	Jas. Guthrie	Timberman	Fall of rock	Hip dislocated	Hollingsworth Coal Co.	Polk
November 1	Robt. Robinson	Miner	Fall of slate	Arm broken	Walnut Creek Coal Co.	Polk
November 7	Thos. H. Brooks	Driver	Caught by timbers	Arm broken	Des Moines Coal Co.	Polk
November 11	D. J. Abram	Boss Driver	Caught by slide	Fingers broken	Colfax Cons. Coal Co.	Jasper
November 17	Norman Thomas	Driver	Run onto by car	Leg broken	Gibson Coal Co.	Polk
December 10	Olaf Anderson	Miner	Fall of slate	Leg and ribs broken	Des Moines Coal Co.	Polk
December 19	Wm. Murray	Miner	Fall of slate	Limbs bruised	Shaw Coal Co.	Polk
December 21	Chas. Apsgren	Miner	Fall of coal	Leg broken	W. D. Johnson Coal Co.	Boone
December 21	E. W. Jones	Driver	Kicked by mule	Leg broken	Enterprise Coal Co.	Polk
1907.						
January 8	Albine Danielson	Cager	Fall of coal	Leg broken	W. D. Johnson Coal Co.	Boone
January 15	Bert Beck	Driver	Fall of slate	Injured about head	Elko Coal Co.	Polk
January 24	Fred Anderson	Timberman	Fall of rock	Leg broken	Crooked Creek C. & R. Co.	Webster
January 15	Orina Patton	Driver	Caught by car	Finger cut off	Boone Coal & Mining Co.	Boone
February 14	M. E. Graves	Driver	Run over by car	Two ribs broken	Des Moines Coal Co.	Polk
February 15	Oli Giuseppl	Miner	Fall of slate	Finger cut off	Enterprise Coal Co.	Polk
March 7	Nick Vitch	Miner	Fall of coal	Leg bruised	Colfax Cons. Coal Co.	Jasper
March 15	Dan Strain	Miner	Run over by car	Leg broken	Rogers Coal Co.	Webster
March 16	Irvin Anspaugh	Trapper	Run over by car	Leg bruised	Des Moines Coal Co.	Polk
March 16	Gus Carlson	Miner	Caught by cars	Skull fractured	Des Moines Coal Co.	Polk
March 23	Lee Hensen	Driver	Caught by cars	Finger cut off	Norwood-White Coal Co.	Polk
March 30	Robt. Blumberg	Miner	Fall of dirt	Leg broken	W. D. Johnson Coal Co.	Boone
April 2	John Lloyd	Driver	Caught by car	Body bruised	Norwood-White Coal Co.	Polk
April 4	Chas. Hodge	Driver	Caught by car	Arm broken	Colfax Cons. Coal Co.	Jasper

NON-FATAL ACCIDENTS—CONTINUED.

Date	Name	Occupation	Cause of Accident	Character of Injury	Mine Where Accident Occurred	County
1907						
April 15	Fred Jackson	Oiler	Caught by car	Finger cut off	Coaldale Fuel Co.	Polk
April 19	Jake Moler	Driver	Run over by car	Leg broken	Enterprise Coal Co.	Polk
May 3	Hugh Timmins	Driver	Caught by car	Body bruised	Boone Coal & Mining Co.	Boone
May 21	A. C. Deaver	Driver	Caught by car	Arm broken	Colfax Cons. Coal Co.	Jasper
May 24	James Lowe	Miner	Fall of slate	Hurt in hip	Bennett Bros. Coal Co.	Polk
June 20	John Giuseppi	Miner	Fall of slate	Foot crushed	Enterprise Coal Co.	Polk
July 25	Peter Smith	Miner	Fall of slate	Leg broken	Coaldale Fuel Co.	Polk
August 16	Doc Robinson	Miner	Explo'n dynamite caps	Ribs broken, face cut	Norwood-White Coal Co.	Polk
August 16	Thos. Scott	Miner	Explo'n dynamite caps	Face and breast cut	Norwood-White Coal Co.	Polk
August 16	N. Robinson	Mine forem'n	Explo'n dynamite caps	Face cut, h'nd broken	Norwood-White Coal Co.	Polk
August 19	C. Richardson	Driver	Kicked by mule	Rib broken	Norwood-White Coal Co.	Polk
August 26	Carl Erickson	Miner	Fall of slate	Arm and leg broken	Smith-Lowe Coal Co.	Polk
October 27	Ed Alquist	Day man	Fall of slate	Hand mashed	Boone Coal & Mining Co.	Boone
October 28	Alex Thompson	Driver	Caught by car	Hand mashed	Boone Coal & Mining Co.	Boone
1908.						
January 9	John Meschler	Comp'y man	Fall of slate	Shoulder bruised	Saylor Coal Co.	Polk
January 15	Samuel Motte	Miner	Fall of rock	Bruised head	Smiley & Heaps Coal Co.	Boone
January 21	W. J. Wishman	Miner	Fall of slate	Leg broken	Madison Coal Co.	Polk
March 6	Antoni Lundsteen	Miner	Fall of slate	Injured pelvis	Ogden Coal Co.	Boone
March 21	Mike Krall	Shot firer	Blown out shot	Leg broken	Smith-Lowe Coal Co.	Polk
March 31	Theodore Polloni	Day man	Fall of slate	Leg broken	Smith-Lowe Coal Co.	Polk
January 1	David Reese	Supt.	Struck by wheel	Face and head cut	Norwood-White Coal Co.	Polk
June 30	Michael Heffron	Miner	Fall of coal	Back injured	Bennett Bros. Coal Co.	Polk
1907.						
December 20	Percy Jackson	Miner	Fall of slate	Hip bruised	Enterprise Coal Co.	Polk
1908.						
February 21	M. Carrington	Miner	Fall of slate	Back and hip bruised	Enterprise Coal Co.	Polk
February 26	John Riley	Driver	Run over by car	Leg broken	Enterprise Coal Co.	Polk
1907.						
November 12	Pete Rakiel	Miner	Fall of slate	Two fingers broken	Maple Block Coal Co.	Polk
December 10	Dave Reese	Driver	Caught by car	Hand mashed	Maple Block Coal Co.	Polk
October 23	Pete Johnson	Timberman	Fall of slate	Foot crushed	Saylor Coal Co.	Polk
1908						
May 13	Jas. McGown	Driver	Run over by car	Leg broken	Saylor Coal Co.	Polk
November 9	A. Mewfridini	Visitor	Fall of slate	Leg broken	Colfax Cons. Coal Co.	Jasper
December 17	Geo. Robinson	Miner	Fall of slate	Shoulder broken	Colfax Cons. Coal Co.	Jasper
1908.						
February 27	Chris Smith	Driver	Kicked by mule	Jawbone broken	Colfax Cons. Coal Co.	Jasper
March 7	Henry Vaughn	Miner	Caught by cars	One arm broken	Colfax Cons. Coal Co.	Jasper
May 14	Andy Johnson	Weigh boss	Exhaust of steam	Leg scalded	Ogden Coal Co.	Boone
1907.						
November 20	Willis Abbet	Cager	Caught by cage	Body bruised	Economy Coal Co.	Polk
1908.						
February 17	John Groon	Miner	Fall of slate	Body bruised	Enterprise Coal Co.	Polk
February 18	C. Lydebotham	Driver	Caught by car	Hips bruised	Norwood-White Coal Co.	Polk
1907.						
September 23	L. Lamson	Top boss	Caught by car	Foot crushed	Norwood-White Coal Co.	Polk
1908.						
June 26	John McCauley	Dumper	Caught by car	Foot crushed	Norwood-White Coal Co.	Polk
February 5	R. Robinson	Miner	Fall of slate	Cut about head	Norwood-White Coal Co.	Polk
October 14	P. Costican	Miner	Fall of slate	Three ribs broken	Norwood-White Coal Co.	Polk
October 20	Bert Lane	Driver	Struck by mine door	Collar bone broken	Norwood-White Coal Co.	Polk
October 1	F. M. Riley	Blacksmith	Fell down chute	Collar bone broken	Des Moines C. & M. Co.	Polk
1908.						
January 13	Stacey Stacy	Driver	Caught by car	Right thumb taken off	West Riverside Coal Co.	Polk

TABLE No. 1.

SHOWING NUMBER OF MINES, OUTPUT OF COAL, NUMBER OF MINERS AND OTHER EMPLOYES IN DISTRICT NO. 3, FOR YEAR ENDING JUNE 30, 1907.

Name of County	Number of mines	Amount of coal of all kinds produced	Number of miners employed	Number of other inside employes	Number of outside employes	Total number of employes
Polk	31	1,435,876	2,214	686	324	3,224
Jasper	11	385,298	508	190	73	831
Boone	10	228,082	508	190	71	769
Webster	10	118,363	184	84	29	297
Dallas	2	31,370	88	34	21	143
Guthrie	8	12,303	69	3	9	81
Greene	6	22,305	66	8	7	81
Scott	1	2,500	4			4
Total	79	2,236,097	3,701	1,195	534	5,430

TABLE No. 2.

SHOWING NUMBER OF MINES, OUTPUT OF COAL, NUMBER OF MINERS, AND OTHER EMPLOYES IN DISTRICT NO. 3, FOR YEAR ENDING JUNE 30, 1908.

Name of County	Number of mines	Amount of coal of all kinds produced	Number of miners employed	Number of other inside employes	Number of outside employes	Total number of employes
Polk	33	1,358,097	2,249	699	301	3,249
Jasper	10	467,552	594	239	76	836
Boone	12	218,491	583	188	93	864
Webster	8	59,031	144	62	23	229
Dallas	3	108,700	199	50	28	277
Guthrie	10	13,143	85	9	10	104
Greene	6	22,226	59	8	8	75
Scott	3	2,750	15	12	3	30
Total	85	2,249,990	3,868	1,254	542	5,664

TABLE No. 3.

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

Name of County	1903	1904	1905	1906	1907	1908
Polk	996,573	996,172	1,094,521	1,266,224	1,435,876	1,358,097
Boone	288,055	345,472	422,802	276,505	238,082	218,491
Jasper	329,312	329,509	305,027	333,337	385,298	467,552
Webster	150,906	157,323	122,056	112,223	118,363	59,031
Greene	12,711	15,808	17,470	20,605	22,305	22,226
Guthrie	16,545	29,355	29,416	20,730	12,303	13,143
Dallas	19,990	16,586	13,509	9,888	31,370	108,700
Scott	13,280	14,983	5,310	890	2,500	2,750

TABLE No. 4.

SHOWING TONNAGE IN DISTRICT NO. 3, FOR PAST TEN YEARS, WITH NUMBER OF FATAL ACCIDENTS AND NUMBER OF EMPLOYES, WITH TONNAGE PER ACCIDENT, ETC.

Year	Number of fatal accidents	Tons of coal mined each year	Number of employes	Tons of coal mined per accident	Number of employes for each accident
1899	11	1,555,050	3,437	141,368	312
1900	8	1,508,020	3,819	188,502	477
1901	7	1,097,690	3,904	229,070	558
1902	13	1,959,153	3,878	137,166	298
1903	5	1,835,456	3,691	367,091	738
1904	10	1,846,386	4,989	184,638	499
1905	11	2,010,101	5,389	182,736	489
1906	8	2,040,342	5,566	255,042	695
1907	14	3,236,077	5,430	159,721	388
1908	14	2,249,990	5,664	160,713	397

FATAL ACCIDENTS IN THIRD DISTRICT FOR TWO YEARS ENDING JUNE 30, 1908.

William Leming.

On September 7, 1906, fatal accident occurred to William Leming, a miner in the employ of the Colfax Consolidated Coal Company of Colfax, Jasper county. Accident occurred in Mine No. 7 on Third North, six feet south of point of switchtail rope parting. Death was caused by being struck by tail rope. At the time of his death Leming was in haulage entry when tail rope broke the pulleys loose and the rope struck him causing his death.

Charles Westburg.

On November 12, 1906, fatal accident occurred to Charles Westburg, a miner employed by the Bennett Bros. Coal Company of Polk County. Westburg was at work at the face of his room when fall of slate occurred killing him. He was working alone in his room. He was 66 years old and had been in the employ of the company six months.

John Richard Johnson.

On December 24, 1906, fatal accident occurred to John Richard Johnson, an employe of the Colfax Consolidated Coal Company of Jasper county. He was mining in a room with his father at face of No. 9 off 11th West, South Side, Mine No. 7, when a fall of slate occurred severely bruising him about the head and body. The room was driven in about one hundred eight feet from face of entry. Fall occurred at face of room. Mr. Johnson died on night of December 24th from injuries received.

Steve Zannatti.

On January 3, 1907, fatal acident occurred to Steve Zannatti, shot examiner and shot firer at No. 2 Mine, Saylor Coal Company of Polk county. He was in Room No. 2, H. entry north when killed. He had gone back after lighting shot and was crushed about head and shoulders by flying coal. He was 24 years of age and had been in the employ of the company about 18 months.

John Brown.

On January 21, 1907, fatal accident occurred to John Brown, a miner in the employ of the Enterprise Coal Company of Enterprise, Polk county. He was at the face of 1st West of 5th South entry on East Side. He was killed six feet from inside of his last Bottom shot. Had just finished tamping a rib shot and turned to come out and was caught by a piece of falling slate crushing his head. He was 45 years old and had been in the employ of the company more than two years.

C. E. Berggren.

On January 21, 1907, fatal accident occurred to C. E. Berggren, a miner in the employ of the Keystone Coal Company of Des Moines, Polk county. The deceased was mining off a standing shot when coal fell on him killing him instantly. He was 60 years old and had been in the employ of the company two months.

Sidney Rees.

On February 11, 1907, fatal accident occurred to Sidney Rees, a mule driver in the employ of the Des Moines Coal Mining Company of Marquisville, Polk county. Rees was 17 years old and had been in the employ of the company for three years. He was driving a mule and was nearly to end of run when he fell off car and under car and was killed almost instantly.

A. F. McCormick.

On January 30, 1907, fatal accident occurred to A. F. McCormick, a miner in the employ of the Enterprise Coal Company of Enterprise, Polk county. McCormick was in Room No. 4, back west longwall, when piece of coal fell bruising back and injuring his knee. This man's injuries were not regarded as serious but he became delirious and was taken to the hospital on February 4th, and died Saturday night, February 9th, about 8 P. M., having never regained consciousness.

P. A. Turnell.

On February 9, 1907, fatal accident occurred to P. A. Turnell, an engineer at the Eclipse Mine in Boone county. He was engaged in filling one boiler from another when an explosion occurred blowing boiler to pieces and killing Turnell instantly. The boiler that exploded was not used often. Turnell was a licensed engineer.

Peter Olesen.

On March 1, 1907, fatal accident occurred to Peter Olesen, a miner in the employ of the Flint Brick & Coal Company of Des Moines, Polk county. He was at work in Room 13, Eight North Entry. It seems he was just making preparations to drill a hole and while in the act of filing an augur a large piece of slate fell from the roof killing him instantly.

Sam Lundstrum.

On June 5, 1907, fatal accident occurred to Sam Lundstrum, a miner in the employ of the Coaldale Fuel Company of Polk county. His body was crushed between cage and bottom timbers causing instant death. Engineer was hoisting men. As Lundstrum was getting on cage, engineer thought he got one bell to hoist. Before Lundstrum got ready for hoist cage started away and he lost his balance falling outward toward the bottom. Body projected over cage enough to catch bottom timbers as cage ascended with the result that he was crushed to death between cage and shaft bottom timbers.

JOE HEDAMAN.

On May 20, 1907, fatal accident occurred to Joe Hedaman, a miner in the employ of the Enterprise Coal Company of Enterprise, Polk county. He was at work doing company work shooting down top rock and widening the entry when a fall of rock and slate occurred killing him instantly.

SANTI CELESTI.

On December 6, 1906, fatal accident occurred to Santi Celesti, a miner in the employ of the Saylor Coal Company of Polk county. Accident occurred in Mine No. 1. Fall of slate was cause of the accident.

JOHN HENDERSON.

On December 31, 1906, fatal accident occurred to John Henderson, a miner in the employ of the Iowa Coal Company of Des Moines, Polk county. Henderson was at work in his room when fall of slate occurred killing him.

FRANH COE.

On July 31, 1907, fatal accident occurred to Frank Coe, a laborer in the employ of the Norwood-White Company of Norwoodville, Polk county. Accident happened in Room 4, off of 16th West entry and was caused by a slip in the roof; a large piece of slate falling and killing him instantly.

GILBERT SHAW.

On September 9, 1907, fatal accident occurred to Gilbert Shaw, a miner and operator of Shaw's mine near Monroe, Jasper county. Accident occurred about 7:30 A. M., on above date and was caused by falling coal. Mr. Shaw's head was severely mashed by the fall of coal, and he only lived about two hours after the accident.

JOHN HOLMBERG.

On September 10, 1907, fatal accident occurred to John Holmberg, a miner in the employ of the Bennett Bros. Coal Company of Des Moines, Polk county. The coroners jury brought in a verdict that he came to his death by an accidental fall of slate, on above date.

ED J. QUINN.

On September 12, 1907, fatal accident occurred to Ed J. Quinn, a mine foreman in the employ of the Eagle Coal Company of Des Moines, Polk county. Accident occurred fifty feet west of shaft on main entry. At the time of the accident Mr. Quinn was pulling down from the roof with a pick about ten inches of bony coal, preparatory to setting up timbers, and while doing this a boulder which projected about two feet from the side of the entry, fell out against him, knocking him out under the bony coal which fell on him breaking his back. He lived but a few hours after the accident.

JOHN DOTTY.

On October 20, 1907, fatal accident occurred to John Dotty, a company man in the employ of the Economy Coal Company of Des Moines, Polk county. Mr. Dotty was at work in Ninth North entry, when a fall of slate occurred killing him instantly.

W. H. LAMMEY.

On October 26, 1907, fatal accident occurred to W. H. Lammey, a miner in the employ of the Center Coal Mining Company of Des Moines, Polk county. Mr. Lammey was at work in his own room, within eight feet of face, when a fall of slate occurred killing him almost instantly. He was 62 years of age, and had been in the employ of the company nine days.

THEODORE BENSON.

On December 9, 1907, fatal accident occurred to Theodore Benson, a miner in the employ of High Bridge Coal Company of Dallas county. He was in first north of main east, room 3, when fall of slate occurred injuring him about the head from which injuries he died on December 13th.

PERRY WHITE.

On January 8, 1908, fatal accident occurred to Perry White, a miner in the employ of the Saylor Coal Company, Mine No. 2. He was in Room 7, off second A entry, first west, south, when fall of slate occurred causing his death.

O. COUNTRI.

On February 5, 1908, fatal accident occurred to O. Countri, an entry driver in the employ of the Hollingsworth Coal Company of Des Moines, Polk county. Countri attempted to cross cage after the signal to hoist had been given and was caught by the cage and crushed between the floor of cage and top of runway.

W. A. FULLER.

On February 25, 1908, fatal accident occurred to W. A. Fuller, a miner in the employ of the Hollingsworth Coal Company of Des Moines, Polk county. Mr. Fuller was engaged in working in his own room in the mine when fall of slate occurred causing his death. Coroner's jury verdict was: "Said slate fell in the room in which said Fuller was working, and we further find that said accident was caused by W. A. Fuller in not propping a loose piece of slate which he was aware was loose."

PATRICK MCGRATH.

On March 3, 1908, fatal accident occurred to Patrick McGrath, a miner in the employ of the Enterprise Coal Company of Enterprise, Polk county. Accident happened in Room 1, 8th West A entry. He had about 10 to 14 inches of slate and boulder coming all the way. This piece broke off at the coal as he was mining off a shot of coal. Slate crushed him; breaking his neck and one leg.

MIKE SPORRI.

On May 22, 1908, fatal accident occurred to Mike Sporri, a timberman in the employ of the Colfax Consolidation Coal Company, Mine No. 8, of Colfax, Jasper county. He was knocking a prop from under some slate which he knew to be loose, preparatory to doing some more timbering, when slate fell and crushed him, killing him instantly.

DAVE MORGAN.

On June 6, 1908, fatal accident occurred to Dave Morgan, a coupler in the employ of the Norwood-White Coal Company of Norwoodville, Polk county. The said Dave Morgan was passing from north to south across the shaft after being warned several times not to do so and that it was a dangerous act. Result: He was caught and instantly killed by a descending cage. He was 18 years old and had been in the employ of the company for one year.

CHARLES MCELWAIN.

On June 19, 1908, fatal accident occurred to Charles McElwain, a shaft sinker, in the employ of the Gibson Coal Mining Company of Des Moines, Polk county. Accident occurred while McElwain was engaged in sinking an air shaft at their new mine, No. 5, 1½ miles east of Clive, Polk county. He was at bottom of air shaft when he was struck on back by falling dirt tub. He died at Mercy hospital on June 21, 1908.

NON-FATAL ACCIDENTS OCCURRING IN THE THIRD DISTRICT FOR TWO YEARS ENDING JUNE 30, 1908.

July 3, 1906, August Wenzel, a miner in the employ of the Smith-Lowe Coal Company, of Carbondale, Polk county. Fall of slate fracturing left hip and bruising body.

July 10, 1906, Frank Robusky, a mule driver in the employ of the Madison Coal Company of Des Moines, Polk county. In pulling cars through a break-through Robusky was caught between cars breaking his left leg.

July 30, 1906, C. A. Montieth, a miner in the employ of the Coaldale Fuel Company of Des Moines, Polk county. Fall of slate. Thigh bruised.

August 1, 1906, Thos. Cosgrove, a miner in Mine No. 2 of Fline Brick & Coal Company, Des Moines, Polk county. Fall of slate. Two ribs broken and ankle and back injured.

August 14, 1906, M. Stanford, a miner in the employ of the Coaldale Fuel Company of Des Moines, Polk county. Back hurt by fall of slate.

August 27, 1906, Albert Depew, a miner in the employ of the Heaps & Crowe Coal Company of Boone, Boone county. He was caught between bottom of cage and shaft. Bruised body.

September 5, 1906, Ellis E. Crane, a miner in the employ of the Walnut Creek Coal Company of Polk county. Fall of slate injuring him in pelvic region.

September 17, 1906, J. L. Ford, a miner in employ of Enterprise Coal Company of Enterprise, Polk county. Kicked by mule. Right leg broken, left leg dislocated and five ribs broken.

October 3, 1906, Reese P. Jones, a driver for the Colfax Consolidated Coal Company of Colfax, Jasper county. Arm fractured. Lunge by mule.

October 16, 1906, James Shortell, a miner in the employ of Bennett Bros. Coal Company of Des Moines, Polk county. Fall of slate. Hurt in back.

October 21, 1906, Pete Beckett, a timberman in the employ of the Saylor Coal Company, Mine No. 2, Polk county. Fall of slate. Ribs broken.

October —, 1906, John Martenson, top man in the employ of the Delaware Coal Company of Des Moines, Polk county. Leg broken, crushed by timber.

October 26, 1906, Louis Carey, a driver in the employ of the Saylor Coal Company, Mine No. 1, Polk county. Run over by car. Foot mashed.

October 29, 1906, James Guthrie, a timberman in the employ of the Hollingsworth Coal Company of Des Moines, Polk county. Fall of rock. Dislocating one hip and cutting him about the face.

November 1, 1906, Robert Robinson, a miner in the employ of the Walnut Creek Coal Company of Des Moines, Polk county. Fall of roof occurred cutting his head and face badly and breaking one arm.

November 7, 1906, Thos. H. Brooks, a mule driver for Des Moines Coal Company of Des Moines, Polk county. Arm caught between timbers and water box and broken.

November 11, 1906, D. J. Abram, a boss driver for the Colfax Consolidated Coal Company of Jasper county. Fractured fingers. Slide of fall he was working on.

November 17, 1906, Norman Thomas, a driver in the employ of the Gibson Coal Company of Polk county. He was coming out of entry with loaded cars and ran into empty car. One leg broken.

December 10, 1906, Olaf Anderson, a miner in the employ of the Des Moines Coal Company of Polk county. Fall of slate. Leg, finger and two ribs broken.

December 19, 1906, William Murray, a miner in the employ of the Shaw Coal Company of Des Moines, Polk county. Fall of slate. Head and limbs bruised.

December 21, 1906, Charles Apsgren, a miner in the employ of the W. D. Johnson Coal Company of Boone, Boone county. Fall of coal in room. Leg broken.

December 21, 1906, E. W. Jones, a driver in the employ of the Enterprise Coal Company of Enterprise, Polk county. He was coming out of the mine with a trip of cars when mule kicked him, breaking his leg.

January 8, 1907, Albine Danielson, a cager in the employ of the W. D. Johnson Coal Company of Boone, Boone county. Fall of coal down shaft. Leg broken.

January 15, 1907, Bert Beck, a driver in the employ of the Elko Coal Company of Des Moines, Polk county. Pillar had been removed and he ran in to get mule out. Fall of slate. Injured about head and over one eye.

January 24, 1907, Fred Anderson, a timberman in the employ of the Crooked Creek Coal & Railroad Company of Webster county. Fall of rock. Right leg broken.

February 15, 1907, Orina Patton, a mule driver in the employ of the Boone Coal & Mining Company of Fraser, Boone county. Car ran off track and while putting it back mule started up and car caught his hand taking one finger off.

February 14, 1907, M. E. Graves, a driver in the employ of the Des Moines Coal Company of Polk county. Car ran over him. Two ribs broken.

February 15, 1907, Oli Giuseppi, a miner in the employ of the Enterprise Coal Company of Enterprise, Polk county. Fall of slate. One finger cut off.

March 7, 1907, Nick Vitch, a miner in the employ of the Colfax Consolidated Coal Company of Jasper county. Fall of coal. Leg and foot bruised.

March 15, 1907, Dan Strain, a miner in the employ of Rogers Coal Company of Webster county. Run over by car. Leg broken.

March 16, 1907, Irvin Anspaugh, a trapper for the Des Moines Coal Company of Polk county. Cars came uncoupled causing wreck. Foot and leg bruised.

March 16, 1907, Gus Carlson, a miner in the employ of the Des Moines Coal Company of Polk county. Cars came uncoupled and caused wreck. Fractured skull.

March 23, 1907, Lee Hensen, a driver in the employ of the Norwood-White Coal Company of Norwoodville, Polk county. Hensen tried to stop his mule by hooking tail chain onto end of car and in so doing he got his finger under the hook cutting finger end off.

March 30, 1907, Robert Blumberg, a laborer in the mine of the W. D. Johnson Coal Company of Boone, Boone county. Leg broken by fall of dirt.

April 3, 1907, John Lloyd, a driver in the employ of the Norwood-White Coal Company of Norwoodville, Polk county. Caught in car and bruised about body and wrist cut.

April 4, 1907, Charles Hodge, a driver for the Colfax Consolidated Coal Company of Jasper county. Failed to sprag cars. Arm broken.

April 15, 1907, Fred Jackson, an oiler in the employ of the Coaldale Fuel Company of Polk county. Car ran over his hand. Three fingers bruised; one taken off.

April 19, 1907, Jake Moler, a mule driver in the employ of the Enterprise Coal Company of Enterprise, Polk county. Run over by car. Leg broken.

May 3, 1907, Hugh Timmins, a mule driver in the employ of the Boone Coal & Mining Company of Fraser, Boone county. Squeezed between car and rib and badly bruised. Two weeks idle.

May 21, 1907, A. C. Deaver, driver for Colfax Consolidated Coal Company of Colfax, Jasper county. Failure to sprag cars. Arm broken.

May 24, 1907, James Lowe, a miner in the employ of the Bennett Bros. Coal Company of Des Moines, Polk county. Fall of slate. Hurt in hip.

June 20, 1907, John Giuseppi, a miner in the employ of the Enterprise Coal Company of Polk county. Foot crushed by fall of slate.

July 25, 1907, Peter Smith, a miner in the employ of Coaldale Fuel Company of Polk county. Fall of slate breaking hip bone and bruising ankle.

August 16, 1907, Doc Robinson, a miner in the employ of Norwood-White Coal Company, Polk county. Explosion of dynamite caps. Face and breast cut by tin and copper. Also three ribs broken.

August 16, 1907, Thomas Scott, miner in employ of Norwood-White Coal Company, Polk county. Explosion of dynamite caps. Face and breast badly cut by pieces of tin and copper.

August 16, 1907, Nicholas Robinson, a mine foreman in employ of Norwood-White Coal Company of Polk county. Explosion of dynamite caps. Face and hands badly cut, and right hand broken.

August 19, 1907, C. Richardson, a driver in Mine No. 1, Norwood-White Coal Company of Polk county. Kicked by mule. One rib broken and leg bruised.

August 26, 1907, Carl Erickson, a miner at No. 4, Smith-Lowe Coal Company, Carbondale, Polk county. Fall of slate breaking one arm and one leg.

October 27, 1907, Ed Alquist, a day man in the employ of the Boone Coal & Mining Company, Fraser, Boone county. Fall of slate mashing hand and breaking one finger.

October 28, 1907, Alex Thompson, a driver in the employ of the Boone Coal & Mining Company of Fraser, Boone county. Fingers mashed between two cars.

January 9, 1908, John Meschler, a company man in the employ of the Saylor Coal Company, Mine No. 2, Polk county. Fall of slate causing scalp wound and bruising shoulder.

January 15, 1908, Samuel Motte, a miner in the employ of Smiley & Heaps Coal Company of Boone, Boone county. Bruised about head and face by falling rock.

January 21, 1908, W. J. Wishman, a miner in the employ of the Madison Coal Company of Des Moines, Polk county. Fall of slate breaking one leg below knee.

March 6, 1908, Antone Lundsteen, a miner in the employ of the Ogden Coal Company of Ogden, Boone county. Fall of slate. Injury to pelvis bone.

March 21, 1908, Mike Krail, a shot fifer in the employ of the Smith-Lowe Coal Company of Carbondale, Polk county. Mine No. 4. Lighted shot blew through and the flying coal broke his left leg and the small bones in one hand.

March 31, 1908, Theodore Polloni, a day man employed by the Smith-Lowe Coal Company, Mine No. 3, of Carbondale, Polk county. Fall of slate breaking right leg between the ankle and the knee.

January 1, 1908, David Reese, mine superintendent, employed by the Norwood-White Coal Company of Norwoodville, Polk county. Struck by wheel from haulage rope. Cut about face and head.

June 30, 1908, Michael Heffron, miner in employ of the Bennett Bros. Coal Company of Des Moines, Polk county. Caught by falling coal. Injured in back and side.

December 20, 1907, Percy Jackson, a miner in the employ of Enterprise Coal Company, Mine No. 2, Polk county. Fall of slate bruising hip and foot.

February 21, 1908, M. Carrington, a miner in Mine No. 1, Enterprise Coal Company, Polk county. Fall of boulder bruising back and hip.

February 26, 1908, John Riley, a driver in Mine No. 1, Enterprise Coal Company, Polk county. Run over by car. One leg broken.

November 12, 1907, Pete Rakiel, miner in employ of Maple Block Coal Company, Polk county. Two fingers broken. Fall of slate.

December 10, 1907, Dave Reese, driver in employ of Maple Block Coal Company of Polk county. Bone in hand fractured. Caught by car.

October 23, 1907, Pete Johnson, a timberman in employ of Saylor Coal Company of Polk county. Fall of slate crushing one foot.

May 13, 1908, Jas. McGown, a driver in employ of Saylor Coal Company of Polk county. Run over by car and one leg broken.

Nov. 9, 1907, Andrew Mewfridini was visiting brother in mines of Colfax Consolidation Coal Company when fall of slate occurred at face of room breaking one leg.

December 17, 1907, George Robinson, a miner in employ of Colfax Consolidation Coal Company of Jasper county. Fall of slate. Fractured shoulder blade.

February 27, 1908, Chris Smith, driver for Colfax Consolidation Coal Company of Jasper county. Fractured jawbone. Kicked by a mule.

March 7, 1908, Henry Vaughn, a miner in employ of Colfax Consolidation Coal Company of Jasper county. Caught between cars. One arm broken.

May 14, 1908, Andy Johnson, weigh boss for Ogden Coal Company of Boone county. Leg scalded by exhaust of steam.

November 20, 1907, Willis Abbet, a cager in employ of Economy Coal Company of Polk county. Body bruised. Caught by cage.

On February 17, 1908, John Groon, miner in the employ of the Enterprise Coal Company of Enterprise, Polk county. Fall of slate, badly bruised body.

February 18, 1908, C. Lydebotham, a driver for Norwood-White Coal Company of Polk county. Caught by car and hips bruised.

September 23, 1907, L. Lamson, a top boss, Norwood-White Coal Company of Polk county. Caught by car and foot crushed.

June 26, 1908, John McCauley, a dumper for Norwood-White Coal Company of Polk county. Caught by car and foot crushed.

February 5, 1908, R. Robinson, a miner at Norwood-White Coal Company of Polk county. Cut about head by fall of slate.

October 14, 1907, P. Costican, a miner for Norwood-White Coal Company of Polk county. Three ribs broken by fall of slate.

October 20, 1907, Bert Lane, a driver for Norwood-White Coal Company of Polk county. Collar bone broken. Struck by mine door.

October 1, 1907, F. M. Riley, a blacksmith in the employ of the Des Moines Coal & Mining Company of Polk county. Was dumping coal and fell down the chute breaking his collar bone.

January 13, 1908, Stacey Stacy, a driver in the employ of the West Riverside Coal Company of Des Moines, Polk county. Loaded car left track fastening his hand between coal and car. Thumb on right hand taken off.

"IOWA COAL."

Paper read before the Iowa and Nebraska Coal Dealers Association at their annual meeting in Waterloo, Iowa, by Joseph Sharp, Commissioner for the Iowa Coal Operators' Association.

"The subject of Iowa coal has been a matter in which I have been interested for more than twenty-two years, having spent seventeen years of my life in the coal mines and about five years in the service of the miners. This I feel entitles me to some knowledge of the subject assigned by your worthy secretary.

"Iowa coal in my judgment has suffered more from a prejudice in the minds of some people than in the lack of real fuel value. I desire to refer to some tests that have been made under direction of the United States government. First: The War department use as their standard in measuring the values of fuel a cord of oak wood. This in my judgment comes very near a thorough practical test. I have in figures published as a result of one of these tests from coal produced at Centerville, Iowa. This test shows that the block coal in southern Iowa is much better than a great number of other kinds of coal. 2962 pounds of Centerville coal equals one cord of oak wood in the production of steam, or in other words less than a ton and a half of Iowa coal in this test shows it will evaporate as much water as will one cord of the best oak wood. Smoky Hollow coal which is also an Iowa product shows by the same test that 2900 pounds of coal equals one cord of oak wood. We find in a report from the regular observations on boiler tests at the United States testing plant in St. Louis, Mo., blue prints will show moisture 8.52, volatile matter 25.12, fixed carbon 44.55, ash 7.80. You will note that the fuel according to this test is 83.67 per cent of the total, and is therefore equal in heating power to almost any coal that is brought into active competition with it. We find, further, that one pound of dry coal coming from the block fields of Iowa contains 12062 B. T. U.'s. This, of course, is under the very best conditions, as it comes from the mines and is used in the ordinary boiler work, it easily equals almost any other coal, for by a test under these conditions, we find 10282 B. T. U.'s. I think, in view of these statements coming from an unquestioned authority, we are safe in assuming that Iowa coal is good. * * * * * * I feel interested in Iowa coal for another and very important reason. There are hundreds and thousands of dollars invested in the Iowa coal mines, giving employment to more than 16,000 workmen. These men produce annually a little more than 8,000,000 tons of coal—earning in wages approximately $12,000,000 and all of this money as earned in wages is spent by them in the several communities and retained within the boundaries of the state. Every dollar that you men spend in the

purchase of Iowa coal is retained and continues in circulation at home and goes far in the promotion of the Iowa coal industry, and many other industries that are dependent on the coal business. We have towns and villages that are entirely dependent upon the mining industry for their existence, hence, the duty in my judgment of every citizen of Iowa is to see to it that Iowa coal is given preference over other coals, at least, when it is equal to the foreign product. On the other hand, the money with which you purchase foreign coal must, of necessity, go to the foreign producer, and cannot benefit in this respect the home industry, or enliven the business of Iowa, but will promote business conditions in the distant state or community. For the foregoing reasons we believe that you men are and of right ought to be very much interested in the subject of Iowa coal."

SUMMARY

OF THE

MINE INSPECTORS' REPORTS

FOR THE

TWO YEARS ENDING JUNE 30, 1908

SUMMARY OF THE MINE INSPECTORS' REPORTS FOR THE TWO YEARS ENDING JUNE 30, 1908.

During the year ending June 30, 1907, the coal production of Iowa amounted to 7,568,425 tons of coal, exceeding the output of the previous year by 550,940 tons. Three hundred and twenty-nine mines were in operation during the year, and 17,045 employes worked in and around the mines in the first half of February 1907. Eight of the eleven counties which produced more than 100,000 tons during the year, showed an increase in tonnage, while three showed a decrease in their coal output.

No strikes or disagreements of consequence between the miners and mine operators occurred during the year.

In recent years the annual coal production of Iowa has increased steadily, year by year, but that record has not been maintained in the year ending June 30, 1908. Compared with the year ending June 30, 1907, last year showed a loss in the state's coal output of 412,990 tons. A number of causes combined to bring about this shrinkage. The financial flurry of last year with its consequent business depression perhaps was the main cause, although the closing down of the mines during last April, while the adjustment of the mining scale was under consideration, was a large contributary factor. An agreement between the miners and operators as to wages and working conditions, and extending until April 1, 1910, was reached in the latter part of last April, giving the assurance that the coal industry of Iowa will be free from serious disagreements between the contracting parties during the time covered by the agreement.

The following tables give the coal producing counties of the state, the number of mines, the coal output and the number of persons employed in and about the mines for the two years ending June 30, 1908.

NUMBER OF MINES IN EACH COUNTY, THEIR COAL OUTPUT, NUMBER OF MINERS AND OTHER EMPLOYES FOR YEAR ENDING JUNE 30, 1907.

Number	County	Number of mines	Tons of coal of all grades produced	Number of miners employed	Number of other inside employes	Number of outside employes	Total number employed
1	Monroe	23	2,441,770	2,361	863	273	3,497
2	Polk	30	1,425,876	2,214	696	324	3,234
3	Appanoose	93	1,157,267	2,884	616	388	3,888
4	Mahaska	37	689,870	1,001	345	179	1,525
5	Marion	20	394,481	556	151	69	775
6	Jasper	11	385,298	568	190	73	831
7	Wapello	21	273,556	449	107	73	629
8	Boone	10	238,082	508	190	71	769
9	Wayne	10	159,758	347	113	61	521
10	Lucas	4	126,579	159	53	25	237
11	Webster	10	118,363	184	84	39	307
12	Dallas	2	31,370	88	34	21	143
13	Greene	6	22,305	66	8	7	81
14	Adams	12	20,490	142	18	18	178
15	Page	5	15,981	76	17	10	103
16	Taylor	7	15,951	81	18	10	109
17	Keokuk	5	15,000	29	7	6	42
18	Van Buren	6	13,050	42	6	13	61
19	Guthrie	8	12,303	69	3	9	81
20	Warren	4	3,565	23	2	3	28
21	Scott	1	2,500	4	----	----	4
22	Davis	1	2,410	10	2	4	16
23	Jefferson	2	1,900	4	1	1	6
	Total	329	7,568,425	11,864	3,514	1,667	17,045

NUMBER OF MINES IN EACH COUNTY, THEIR COAL OUTPUT, NUMBER OF MINERS AND OTHER EMPLOYES FOR YEAR ENDING JUNE 30, 1908.

Number	County	Number of mines	Tons of coal of all grades produced	Number of miners employed	Number of other inside employes	Number of outside employes	Total number employed
1	Monroe	23	2,167,061	2,165	1,153	316	3,634
2	Polk	33	1,358,097	2,249	699	301	3,249
3	Appanoose	91	1,107,306	2,991	629	406	4,026
4	Mahaska	35	772,468	1,075	330	151	1,556
5	Jasper	10	467,552	534	226	76	836
6	Marion	20	327,745	498	134	61	693
7	Wapello	20	244,214	388	106	65	559
8	Boone	12	218,491	583	188	93	864
9	Wayne	9	124,465	327	94	50	471
10	Dallas	3	108,700	199	50	28	277
11	Lucas	3	74,288	112	40	20	173
12	Webster	8	59,031	144	62	23	229
13	Greene	3	22,236	59	8	8	75
14	Adams	10	17,760	120	14	14	148
15	Van Buren	8	17,518	39	10	17	66
16	Page	5	14,045	75	12	9	96
17	Taylor	6	13,861	58	14	7	79
18	Guthrie	10	13,143	85	9	10	104
19	Keokuk	5	11,900	24	5	6	35
20	Warren	6	5,950	29	3	5	37
21	Davis	5	4,304	22	3	8	33
22	Scott	3	3,750	15	12	3	30
23	Jefferson	2	2,000	8	2	2	12
	Total	333	7,155,435	11,800	3,803	1,709	17,312

NUMBER OF MINES IN EACH DISTRICT, THEIR COAL OUTPUT, NUMBER OF MINERS AND OTHER EMPLOYES FOR THE YEAR ENDING JUNE 30, 1907.

District	Number of mines	Tons of coal of all grades produced	Number of miners employed	Number of other inside employes	Number of outside employes	Total number of employes
Number 1	142	2,843,033	5,017	1,372	700	7,089
Number 2	108	2,489,305	3,145	947	433	4,526
Number 3	79	2,236,097	3,701	1,195	534	5,430
Total	329	7,568,435	11,864	3,514	1,667	17,045

NUMBER OF MINES IN EACH DISTRICT, THEIR COAL OUTPUT, NUMBER OF MINERS AND OTHER EMPLOYES, FOR THE YEAR ENDING JUNE 30, 1908.

District	Number of mines	Tons of coal of all grades produced	Number of miners employed	Number of other inside employes	Number of outside employes	Total number of employes
Number 1	134	2,658,599	4,973	1,388	708	7,069
Number 2	114	2,251,846	2,959	1,161	459	4,579
Number 3	85	2,249,090	3,868	1,254	542	5,664
Total	333	7,155,435	11,800	3,803	1,709	17,312

SUMMARY OF ACCIDENTS FOR THE TWO YEARS ENDING JUNE 30, 1908.

CAUSE OF FATAL MINE ACCIDENTS IN IOWA DURING THE YEAR ENDING JUNE 30, 1907, AND COUNTIES IN WHICH ACCIDENT OCCURRED.

Cause	Appanoose	Monroe	Wayne	Mahaska	Wapello	Marion	Polk	Boone	Jasper	Total
Falls of slate or coal	3	----	----	4	----	1	8	----	1	19
Run over by cars	----	3	----	----	----	----	1	----	----	4
Falling down shaft	----	----	1	1	1	----	----	----	----	3
Flying coal,—premature explosion	----	2	----	----	----	1	----	----	----	3
Crushed by cage	----	----	----	1	1	----	1	----	----	3
Struck by tailrope	----	----	----	----	----	----	----	----	1	1
Boiler explosion	----	----	----	----	----	----	----	1	----	1
Crushed by box car	----	1	----	----	----	----	----	----	----	1
Total	3	6	1	6	2	1	11	1	2	35

CAUSES OF SERIOUS MINE ACCIDENTS IN IOWA DURING YEAR ENDING JUNE 30, 1907, AND COUNTY IN WHICH ACCIDENT OCCURRED.

Cause	Appanoose	Monroe	Mahaska	Wapello	Marion	Van Buren	Polk	Boone	Jasper	Webster	Total
Falls of slate and coal	6	19	4	5	1	----	15	3	1	1	55
Injured by cars	2	10	2	2	----	----	10	2	2	1	31
Flying coal—explosives	----	2	1	3	----	2	----	----	----	----	8
Struck by cage	1	----	2	----	----	----	----	1	----	----	4
Miscellaneous	2	1	2	----	1	----	4	----	1	----	11
Total	11	32	11	10	2	2	29	6	4	2	109

CAUSES OF FATAL MINE ACCIDENTS IN IOWA DURING THE YEAR ENDING JUNE 30, 1908, AND COUNTIES IN WHICH ACCIDENTS OCCURRED.

Cause	Appanoose	Monroe	Page	Mahaska	Wapello	Marion	Polk	Jasper	Dallas	Total
Falls of slate and coal	3	6	2	3	1	2	8	2	1	28
Run over by car	----	1	----	----	1	----	----	----	----	2
Struck by cage	1	----	----	----	----	----	3	----	----	4
Falling down shaft	----	1	----	1	----	----	----	----	----	2
After-damp	----	2	----	----	----	----	----	----	----	2
Total	4	10	2	4	2	2	11	2	1	38

CAUSES OF SERIOUS MINE ACCIDENTS IN IOWA DURING YEAR ENDING JUNE 30, 1908, AND COUNTY IN WHICH ACCIDENT OCCURRED.

Cause	Appanoose	Monroe	Lucas	Wayne	Mahaska	Wapello	Marion	Polk	Boone	Jasper	Total
Falls of slate and coal	7	12	2	1	6	6	2	13	3	2	54
Injured by cars	----	11	----	2	3	2	----	7	1	1	27
Flying coal—explosives	----	1	----	----	2	----	----	4	----	----	7
Miscellaneous	----	2	----	----	1	2	----	5	1	1	12
Total	7	26	2	3	12	10	2	29	5	4	100

FATAL AND SERIOUS ACCIDENTS IN THE MINES OF THE STATE DURING THE YEAR ENDING JUNE 30, 1907, WITH RELATION TO COAL PRODUCED, AND NUMBER OF EMPLOYES.

Districts	Number of Accidents		Number of tons of coal produced	Tons of Coal Produced for Each Accident		Number of employes	Number of Employes for Each Accid'nt	
	Fatal	Serious		Fatal	Serious		Fatal	Serious
Number 1	9	31	2,843,023	315,891	91,710	7,089	787	227
Number 2	12	36	2,489,305	207,442	69,147	4,526	377	125
Number 3	14	42	2,236,097	159,721	53,240	5,430	388	129
Total	35	109	7,568,425	216,241	69,435	17,045	487	156

FATAL AND SERIOUS ACCIDENTS IN THE MINES OF THE STATE DURING YEAR ENDING JUNE 30, 1908, WITH RELATION TO COAL PRODUCED AND NUMBER OF EMPLOYES.

Districts	Number of Accidents		Number of tons of coal produced	Tons of Coal Produced for Each Accident		Number of employes	Number of Employes for Each Accid'nt	
	Fatal	Serious		Fatal	Serious		Fatal	Serious
Number 1	15	37	2,653,599	176,906	71,718	7,060	471	190
Number 2	9	25	2,251,846	250,205	90,074	4,579	508	183
Number 3	14	38	2,249,990	160,713	59,210	5,664	404	149
Total	38	100	7,155,435	188,301	71,554	17,312	455	173

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

Year	Number of accidents	Tons of coal produced	Tons of coal per accident	Number of employes	Fatality rate per 1,000 employes
1894	19	3,777,393	198,810	10,258	1.9
1895	20	3,195,836	159,792	10,932	1.8
1896	22	3,525,490	160,254	11,451	2.
1897	21	3,799,734	190,464	11,678	1.8
1898	26	4,397,722	169,143	10,550	2.5
1899	20	4,949,310	247,466	11,029	1.8
1900	29	5,117,285	176,458	13,041	2.2
1901	27	5,441,863	201,550	13,175	2.
1902	55	5,514,206	100,258	13,002	4.2
1903	21	6,185,734	294,559	13,192	1.6
1904	31	6,214,379	200,464	16,315	1.9
1905	24	6,806,011	283,584	17,024	1.4
1906	37	7,017,485	189,661	16,825	2.2
1907	35	7,568,425	216,241	17,045	2.05
1908	38	7,155,435	188,301	17,312	2.2