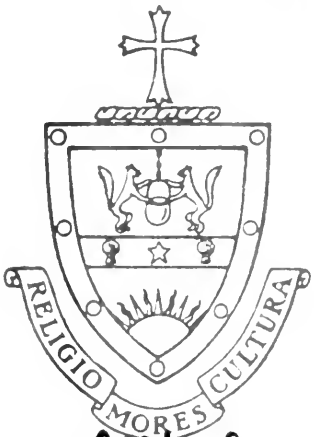

Compliments of

Daniel J. Reed

REPORTS

OF THE

INSPECTORS OF MINES

OF THE

Anthracite and Bituminous Coal Regions of Pennsylvania

FOR THE YEAR 1892.

HARRISBURG:
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1893.


VIRTUE
LIBERTY AND
INDEPENDENCE

CONTENTS.

REPORTS

OF THE

INSPECTORS OF MINES.

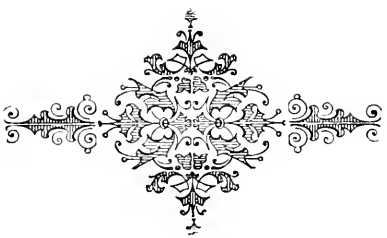
COMMUNICATION.

DEPARTMENT OF INTERNAL AFFAIRS,
HARRISBURG, *June 15, 1893.*

To His Excellency ROBERT E. PATTISON,
Governor of Pennsylvania:

SIR: In compliance with the requirements of the act of June 30, 1885, relative to the Mine Inspector's Reports of the Anthracite and Bituminous Coal Regions, and of the act approved April 23, 1889, I have the honor to present to you for transmission to the general assembly, the the Reports of the Inspectors of Mines of the Coal Regions of this Commonwealth for the year 1892.

Very respectfully yours,
THOS. J. STEWART,
Secretary of Internal Affairs.



MINING STATISTICS.

The following tables, prepared by the Bureau of Industrial Statistics, contain a summary of the production of coal for 1892, and also a comparison with other years; the number of persons employed and of accidents attending their employment.

The first table relates to the production of anthracite coal, and the number of persons employed in mining and preparing it for market. The leading anthracite coal producing county is Luzerne, which produced in 1892, 17,548,508 tons. The next county is Lackawanna, which produced 11,410,554, tons, and the third is Schuylkill, the production of which was 9, 564,534 tons. The decline then is very great, and Northumberland is the fourth county, producing 3,724,234 tons. One other county may be mentioned, Carbon, which produced in 1892, 1,427,543 tons. There are four other anthracite coal producing counties in the State, the aggregate production of which for 1892, was 9,062,999 tons.

The aggregate production for 1892 was 45,738,373 tons, an increase of 362,194 tons over the production in 1891. The production of these two years was a large increase over that of the three preceding years, the production for 1890, being 40,166,327 tons; for 1889, 38,973, 303 tons, and for 1888, 41,706,373 tons. It will be noticed that the production for 1888 was considerably larger than for either of the following years.

The increased production, of course, required the employment of more men. For 1892 the number employed was 129,797, and for 1891, 123,-033. The number employed during the three preceding years was, for 1890, 117,763; for 1889, 119,640, and for 1888, 115,648. Regarding each person as employed, either directly or indirectly, in producing coal the average annual production of coal per man is the following:

1892,	352 tons.
1891,	360 "
1890,	281 "
1889,	242 "
1888,	360 "

Many reasons may be given for this widely varying percentage of production per man employed. There are times, for example, when nearly all who are employed in a mine are engaged in the preliminary work of preparing for mining coal. In such a case there might be very

small production for the number of persons employed; in other cases only a minimum quantity of labor might be expended in this manner, and the production of coal mined per man would be very large. Nevertheless, the deduction conveys some idea of the labor of a man as represented by his product.

The bituminous coal field is much larger, embracing twenty-six of the sixty-seven counties of the State. Westmoreland is the leading bituminous coal producing county, and the production from it in 1892, was 8,696,964 tons. Fayette is also very large, producing in 1892, 7,791,330 tons, while the production of Allegheny county does not fall far below that of Fayette, being 7,227,370 tons. Clearfield produced 6,631,013 tons in 1892. Three other counties may be mentioned, Washington, producing 2,726,941 tons; Jefferson, 3,682,774 tons and Cambria, 3,289,194 tons. The production of Tioga was 964,756 tons, while that of the other counties fall largely below these figures.

The annual increase in the production of bituminous coal has been more regular than the production of anthracite. The increase of production of bituminous coal has been greater than that of anthracite during the last five years, and has finally surpassed it, as 46,576,576 tons of bituminous coal were produced for 1892, while the production of anthracite for the same year was 45,738,373 tons. The following table shows the production of the two kinds during the last five years:

	1892.	1891.	1890.	1889.	1888.
Anthracite	45,738,373	44,376,179	40,166,237	38,973,302	41,706,372
Bituminous	46,576,576	41,787 644	40,784,203	34,555,644	33,304,743

Thus far nothing has been said concerning the production of coke. The production for 1892 was ,7891,630 tons. This represents 11,837,445 tons of coal, as it diminishes about 33 per cent. in weight in reduction from coal to coke. The quantity of coal from which coke is produced is included in the table already noticed of the production of bituminous coal. The leading coke producing county is Fayette; the production for 1892 was 4,268,825 tons. The other chief coke producing county is Westmoreland, the production of which for 1892 was 2,626,455 tons. The following is the coke production during the last five years:

1892, ... 7,891,639 tons.
1891, ... 6,591,542 "
1890, ... 8,431,140 "
1889, ... 6,973,052 "
1888, ... 6,216,561 "

The increased production has been attended by increasing the number of men employed from 61,531 in 1888, to 78,789 in 1892. During the intervening years there were employed in 1891, 73,923; 1890, 66,944; 1889, 61,076. Regarding all persons as employed, directly or indi-

rectly, in producing coal the average annual production per man is the following:

1892,	590 tons.
1891,	564 "
1890,	609 "
1889,	565 "
1888,	512 "

One of the most interesting tables, perhaps, relates to the accidents, fatal and non-fatal, in mining coal. First of all, a comparison may be made between the fatal accidents attending the mining of coal in the two regions.

	1892.	1891.	1890.	1889.	1888.
Anthracite,	396	427	378	384	362
Bituminous,	133	237	146	105	90

The percentage of fatal and non-fatal accidents for the number employed during the last five years in the anthracite and bituminous regions is the following:

ANTHRACITE REGION.

Fatal Accidents.	*Non-Fatal Accidents.*
1892, 1 to 327 employes.	1892, 1 to 127 employes.
1891, 1 to 288 employes.	1891, 1 to 122 employes.
1890, 1 to 311 employes.	1890, 1 to 116 employes.
1889, 1 to 312 employes.	1889, 1 to 120 employes.
1888, 1 to 319 employes.	1888, 1 to 111 employes.

BITUMINOUS REGION.

Fatal Accidents.	*Non-Fatal Accidents.*
1892, 1 to 592 employes.	1892, 1 to 200 employes.
1891, 1 to 312 employes.	1891, 1 to 235 employes.
1890, 1 to 458 employes.	1890, 1 to 177 employes.
1889, 1 to 581 employes.	1889, 1 to 203 employes.
1888, 1 to 604 employes.	1888, 1 to 231 employes.

The percentage of fatal and non-fatal accidents in the two regions for the same period for the number of tons of coal mined is the following:

ANTHRACITE REGION.

Fatal Accidents.	*Non-Fatal Accidents.*
1892, 2 for 11,551 tons.	1892, 1 for 33,817½ tons.
1891, 1 for 10,392 tons.	1891, 1 for 44,243½ tons.
1890, 1 for 10,626 tons.	1890, 1 for 30,827 tons.
1889, 1 for 10,139 tons.	1889, 1 for 39,051½ tons.
1888, 1 for 11,521 tons.	1888, 1 for 40,218 tons.

BITUMINOUS REGION.

Fatal Accidents.	*Non-Fatal Accidents.*
1892, 1 for 350,192 tons.	1892, 1 for 118,515 tons.
1891, 1 for 176,319 tons.	1891, 1 for 133,081½ tons.
1890, 1 for 279,342 tons.	1890, 1 for 107,609½ tons.
1889, 1 for 329,101 tons.	1889, 1 for 114,804 tons.
1888, 1 for 370,053 tons.	1888, 1 for 125,206 tons.

It will be noticed that the number of accidents is much larger in proportion to the number of men employed, and also for the quantity of coal mined, in the anthracite than in the bituminous region.

The anthracite mines are much deeper and in many respects are of a far more dangerous character than the bituminous mines. The greater number of accidents, therefore, is not in consequence of less care and skill in conducting mining operations, but are the consequence of the greater natural dangers. While the mines in some portions of the bituminous coal regions contain large quantities of gas, other mines are almost or wholly free from it, while no anthracite mine is wholly free from it. Besides, it is far more difficult to ventilate the anthracite mines than the bituminous, as they are deeper, and for other reasons also ventilation cannot be as easily perfected as in the bituminous mines. For these and other reasons the number of accidents in the anthracite region is much greater than in the bituminous. Nevertheless, the above tables show that there has been some decrease in the loss of life compared with the number of men employed, while in the bituminous region the change is not so marked.

Another table has been added illustrating the activity of the anthracite and bituminous collieries since 1886. This table is presented for the purpose of showing the regularity of employment in mining in this state. Many of the gaps which appear may be explained with the single remark that the collieries were closed in the year here recorded, and, of course, no further record in such a case can be presented. In other cases a colliery was opened and could not then be worked profitably, and as operations were suspended perhaps for a considerable period, when, in consequence of the changed condition of things, operations could be profitably resumed. Whoever examines these tables must not draw the hasty conclusion that those who were employed in collieries were without work during the interval, for doubtless in many cases they sought and obtained employment elsewhere. In closing a colliery in one place another has been opened in a different place for reasons just explained.

Production of coal and coke in tons. Number of employes in and about the mines, and number of fatal and non-fatal accidents.

DISTRICTS.	COAL.					COKE.				
	1892.	1891.	1890.	1889.	1888.	1892.	1891.	1890.	1889.	1888.
Anthracite.										
First	5,854,638.30	‡9,981,356	*8,932,235.07	*8,622,177.16	*9,884,464.13					
Second	*6,013,537.19		*5,229,027.03	*4,666,891.09	*5,435,591.05					
Third	*5,659,730.09	*6,125,094.15	6,907,708.75	7,329,123.55	8,684,493					
Fourth	*7,549,605.02	7,639,697.65	*5,776,699.08	5,655,338.83	4,892,504					
Fifth	*5,842,724.19	*5,803,964.07	*6,311,864.17	5,220,458.98	*5,375,185.05					
Sixth	*6,287,366.06	*6,492,949.16	4,429,632	4,353,877.22	4,760,014.54					
Seventh	*5,464,678.17	*5,302,050.08	‡2,579,160	‡3,125,435	‡2,674,120					
Eighth	‡3,066,092	‡3,031,067								
Total	45,738,373.90	44,376,179.95	40,166,327.50	38,973,302.83	41,706,372.69					
Bituminous.										
First	4,299,437	3,948,665	3,818,802.61	2,588,531	2,314,457		1,000	1,700		800
Second	8,033,246.50	6,753,614	6,976,785.35	6,925,171.85	6,225,325.44	2,306,788.87	1,760,264	2,875,390.75	2,143,561.90	1,915,788
Third	3,207,814.25	3,422,550.50	2,985,743	2,665,017	1,886,424.50	66,458	147,897.50	72,886	31,056	12,368
Fourth	3,606,142.36	3,834,245.25	3,773,642.94	3,143,322	4,518,737	70,473	108,028.06	91,959.10	41,508	238,757
Fifth	7,360,101	5 423,801	6,453,183	6,026,681	5,140,941.33	4,280,570	3,117,958	3,958,893	3,674,657	3,238,548
Sixth	7,360,158	6,950,036	5,866,184	4,205,019	3,264,596	1,033,866	1,330,374	1,192,300	932,851	673,751
Seventh	5,897,942	4,843,174	4,572,325	3,738,227	4,683,921.50	12,000	10,392	14,216	35,341	48,745
Eighth	6,811,735	6,611,559	6,337,358	5,263,676	5,270,341.18	121,475	115,629	223,796	114,078	87,804.17
Total	46,576,576.11	41,787,644.75	40,784,003.90	34,555,644.85	33,304,743.95	7,891,630.87	6,591,542.56	8,431,140.85	6,973,052.90	6,216,561.17
Grand total	92,314,950.01	86,163,824.70	80,950,331.40	73,528,947.68	75,011,116 64	7,891,630.87	6,591,542.56	8,431,140.85	6,973,052.90	6,216,561.17

* Decimal indicates twentieths of a ton.

‡ First and Second anthracite districts reported together for the year 1891.

; Production of this district was obtained by adding 6 per cent. to the total shipments.

Production of coal and coke in tons. Number of employes in and about the mines, and number of fatal and non-fatal accidents—Continued.

DISTRICTS.	NUMBER OF EMPLOYES.					FATAL ACCIDENTS.					NON-FATAL ACCIDENTS.				
	1892.	1891.	1890.	1889.	1888.	1892.	1891.	1890.	1889.	1888.	1892.	1891.	1890.	1889.	1888.
Anthracite.															
First	14,121	†23,974	23,620	23,937	23,208	55	†69	64	72	72	115	†215	211	226	255
Second	14,111	. . . . .	15,759	16,100	14,992	33	. . . .	40	52	46	181	. . . . .	174	158	131
Third	15,020	17,354	18,947	19,752	20,851	50	60	100	67	83	163	189	208	214	250
Fourth	21,006	19,411	14,244	14,530	13,803	83	96	52	46	32	180	168	134	126	100
Fifth	16,277	14,961	18,255	16,140	15,722	48	53	66	60	44	110	115	97	83	112
Sixth	20,608	19,270	18,149	17,890	16,918	54	65	39	52	64	120	93	121	145	141
Seventh	18,437	18,325	8,789	11,291	10,154	45	56	17	35	21	101	155	36	66	48
Eighth	10,417	9,740	. . . . .	. . . . .	. . . . .	28	28	. . . .	. . . .	. . . .	53	68	. . . . .	. . . . .	. . . . .
Total	129,797	123,035	117,763	119,640	115,648	396	427	378	384	362	1,023	1,003	1,011	998	1,037
Bituminous.															
First	9,393	8,188	6,780	6,787	5,763	24	20	15	19	13	87	51	77	60	34
Second	12,004	11,583	11,762	10,801	10,112	25	134	20	23	17	41	38	51	52	48
Third	6,297	6,118	5,379	4,919	4,054	2	8	5	4	2	26	34	29	27	17
Fourth	6,597	6,767	5,808	5,025	8,493	9	6	8	5	23	14	16	22	21	16
Fifth	10,361	10,275	9,866	9,387	8,124	23	25	50	16	10	71	42	37	41	58
Sixth	12,241	11,560	9,853	7,891	6,877	14	13	15	8	6	21	20	24	13	12
Seventh	10,619	9,210	8,364	7,532	9,917	25	17	9	18	14	56	49	53	45	58
Eighth	11,277	10,222	9,132	8,734	8,191	11	14	24	12	5	77	64	86	42	23
Total	78,789	73,923	66,944	61,076	61,531	133	237	146	105	90	393	314	379	301	266
Grand total	208,586	196,958	184,707	180,716	177,179	529	664	524	489	452	1,416	1,317	1,390	1,299	1,303

† First and Second anthracite districts reported together for the year 1891.

TABLE XII.—*Productian of anthracite coal and number of employes in and about the mines by counties.*

COUNTIES.	PRODUCTION IN TONS.					NUMBER OF EMPLOYES.				
	1892.	1891.	1890.	1889.	1888.	1892.	1891.	1890.	1889.	1888.
Carbon,	1,427,542.85	1,191,158.50	1,266,541.45	957,313.52	523,854	3,848	3,312	3,232	2,104	1,568
Columbia,	889,489.85	761,559.15	599,404.00	514,928.15	712,821.36	2,424	2,787	2,219	1,886	2,087
Dauphin,	639,879	633,568.70	577,490	605,773.27	580,941	2,104	2,125	2,203	2,276	2,136
Lackawanna,	11,410,553.95	10,184,347.70	9,374,359.25	9,024,438.67	10,060,088.29	27,233	24,490	25,116	25,727	24,421
Luzerne,	17,548,508	17,726,559.65	15,825,673.75	15,736,398.92	17,414,006.45	47,994	46,828	43,376	44,933	44,010
Northumberland,	3,724,233.70	3,672,828.25	3,098,547	2,973,638.96	2,993,227.08	12,835	12,437	12,586	12,298	11,014
Schuylkill,	9,564,534.60	9,758,111.10	9,045,215.85	8,827,664.96	9,123,829.35	32,099	29,986	28,155	29,682	29,548
Sullivan,	76,009 65	74,884.35	63,745.75	71,319.19	84,050.16	261	229	237	256	273
Susquehanna,	457,622.30	369,712.45	315,350.45	261,827.19	213,595	999	823	639	478	591
Wayne,	.....	3,450.10	.....	.....	.....	.....	18	.....	.....	.....
Total,	45,738,373.90	44,376,179.93	40,166,327.50	38,973,302.83	41,706,372.69	129,797	123,035	117,763	119,640	115,648

Production of Bituminous coal, coke and number of employes in and about the mines by counties.

COUNTIES.	COAL—PRODUCTION IN TONS.				
	1892.	1891.	1890.	1889.	1888.
Allegheny	7,327,370.15	6,216,428.05	6,377,054.33	4,681,349	5,103,957.50
Armstrong	349,561.75	299,945	385,720	239,626	224,781.50
Beaver	188,319	139,114	101,786	36,864	72,650
Bedford	565,760	413,537	319,917	270,652	737,860
Blair	278,495	218,955	298,196	398,137	253,214
Bradford	53,517	68,697	125,707	129,056	163,821
Butler	132,040.50	160,273	152,488	185,909	191,196
Cambria	3,289,194	3,073,078	2,526,001	1,450,952	1,594,083
Cameron				1,800	1,024
Centre	372,431.61	490,300	376,566.11	357,203	439,121.15
Clarion	788,873.25	739,068	495,658	509,816	563,099
Clearfield	6,631,013.18	6,706,015.80	6,549,546.33	5,125,174	5,381,841.03
Clinton	98,242	131,619	158,000	99,074	32,000
Elk	726,852.19	739,058	766,917	644,300	547,848
Fayette	7,791,330	5,758,200	6,790,277	5,899,243	5,005,595.33
Greene				3,216	5,004
Huntingdon	350,005	277,938	325,822	246,234	275,700
Indiana	638,667	539,628	315,968	185,381	159,223
Jefferson	3,682,774.38	3,600,052.45	3,147,332	2,783,814	2,275,616
Lawrence	119,539	172,197.50	136,687	140,003.50	75,071
Lycoming	17,000				
McKean	21,058	15,737	11,483.50		10,443
Mercer	442,632.75	579,770	491,835	508,236.50	480,993
Somerset	423,179	441,070	275,554	518,176	430,267
Tioga	964,756	993,259	875,406	1,006,135	1,075,296
Washington	2,726,941	2,407,837	2,471,240.78	1,748,782	1,696,647
Westmoreland	8,696,964.35	7,605,867.95	7,308,841.85	7,386,511.85	7,008,392.44
Total	46,576,576.11	41,787,644.75	40,784,003.90	34,555,644.85	33,304,743.95

Production of Bituminous coal, coke and number of employes in and about the mines by counties—Continued.

COUNTIES.	COKE—PRODUCTION IN TONS.					NUMBER OF EMPLOYES.				
	1892.	1891.	1890.	1889.	1888.	1892.	1891.	1890.	1889.	1888.
Allegheny	12,000	10,392	319,645	34,141	48,745	13,447	12,305	11,915	10,292	10,702
Armstrong	.....	11,314.50	14,012	.....	4,370	740	573	779	456	531
Beaver	.....	56	.....	.....	.....	467	264	214	103	170
Bedford	25,876	41,759	78,201	25,159	38,305	951	842	527	665	569
Blair	101,117	79,252	84,147	43,240	103,266	635	624	631	1,050	575
Bradford	.....	.....	.....	.....	.....	122	169	295	331	380
Butler	.....	.....	4,720	6,153	3,740	356	292	285	384	399
Cambria	217,838	333,899	316,142	243,884	215,564	5,672	5,229	4,300	2,915	3,291
Cameron	.....	.....	.....	.....	.....	.....	.....	.....	32	7
Centre	27,600	62,976.06	42,855	5,821	20,555.17	729	858	538	602	693
Clarion	.....	.....	.....	240	4,251	1,488	1,346	985	1,061	1,168
Clearfield	105,568	197,793	199,308	86,744	107,722	10,639	10,188	9,251	8,210	8,551
Clinton	.....	.....	.....	.....	.....	173	200	195	134	134
Elk	17,181	2,500	4,864.10	32,864.50	131	1,243	1,365	1,303	1,287	1,111
Fayette	4,268,825	3,091,301	3,938,623	3,648,297	3,180,055	11,621	11,076	10,312	9,466	8,143
Greene	.....	.....	.....	.....	.....	.....	.....	.....	9	19
Huntingdon	41,604	.....	52,825	48,805	76,292	668	597	620	583	615
Indiana	40,234	105,623	27,251	83,700	8,236	1,021	822	691	362	218
Jefferson	394,495	439,942	312,398	301,122	220,797	5,974	5,623	4,305	4,133	3,765
Lawrence	.....	.....	.....	.....	.....	267	368	283	279	176
Lycoming	.....	.....	.....	.....	.....	60	.....	.....	.....	.....
McKean	.....	.....	.....	.....	.....	44	31	26	.....	16
Mercer	.....	.....	.....	.....	.....	1,112	1,098	973	1,111	1,122
Somerset	11,745	26,657	20,270	26,360	58,493	554	576	433	727	718
Tioga	1,093	1,982	2,140	2,822.50	13,414	2,221	1,969	2,044	1,356	2,410
Washington	.....	1,000	2,700	1,200	800	5,502	4,550	4,341	4,051	4,411
Westmoreland	2,626,454.87	2,185,096	3,011,039.75	2,382,499.90	2,111,825	13,083	12,958	11,698	11,487	11,637
Total	7,891,630.87	6,591,542.56	8,431,140.85	6,973,052.90	6,216,561.17	78,789	73,923	66,944	61,076	61,531

Days in Operation of Anthracite Collieries.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Austin	Austin Coal Company							71
Anchor	Philadelphia and Reading Coal and Iron Co.							
Archbald	Delaware, Lackawanna & Western R. R. Co.	189	201	207	142.70	191.80	172.10	176.60
Alden		221	261	270	224.50	229	232.20	196.60
Avondale		188	201	226	133.20	179	169.40	177.20
Alaska shaft			219	241½	212.15	189.45	199.30	201.80
Avoca					163	199.60	223.60	237
Amora					17	258.80	205	178.35
Abbott slope						208.50	196.50	
Buck Mountain	Buck Mountain Coal Company	189	191	146	138.70	215.10	202.20	195.20
Butler	Butler Colliery Company	142				197	213	
Ben Franklin	Donley & Bannigardner							
Big Mountain	Patterson, Lewellyn & Co.				267.15		243.45	
Bear Ridge No. 1	Bear Ridge Coal Company							
Bear Ridge No. 2	do. do.							
Big Mine Run	Jeremiah Tayl & Co.	228	250	223	237.25	231.50		
Brenzel	Brenzel & Cleaver							
Bear Valley	Philadelphia and Reading Coal and Iron Co.	183	242½	254	172.70	255.85	213.70	225
Burnside	do. do. do.	233½	241	235	167.55	210.30	240.25	116.55
Bast	do. do. do.	200	232	197½	55.30	148.20	237.10	216.75
Bear Run	do. do. do.	233	251	224	188.45	161.05	171.20	180.45
Boston Run	do. do. do.	235	226	210	177.40	224.10	249.75	220.25
Buckville	do. do. do.							
Beechwood	do. do. do.	216	233	214	232	171	220	214
Bennett	Waddel & Walters							
Black Diamond	Haddock & Steel		176	200				
Boston	Butler Coal Company	121				192		
Bellevue shaft and slope	Delaware, Lackawanna & Western R. R. Co.	366	200½	386	147.30	135.90	196.80	185.3
Bridge	Bridge Coal Company, Limited	244	272	119				
Brisbin	Delaware, Lackawanna & Western R. R. Co.	122	77	221	143.90	208.20	190.80	180.1
Blanchard	Northwestern Coal Company							
Baltimore slope	Delaware and Hudson Canal Company	184	197	235	199.75	201.50	206.25	173
Baltimore shaft	do. do. do.							208.75
Baltimore tunnel	do. do. do.	191	222	243	226.50	189.74	195	208.75
Breaker No. 1	Susquehanna Coal Company	283	242	286½	239.80			
Babylon shaft	Babylon Coal Company							174.50
Breaker No. 2	do. do.	290	246	286½	239			
Breaker No. 5	do. do.	293	246	287	235.25			
Breaker No. 1	Kingston Coal Company							
Breaker No. 2	do. do.							
Boston Mines	Delaware and Hudson Canal Company	173	50	227	159.50	191.75	183.25	160.50
Beaver Meadow	Coxe Bro. & Co.	284	193	238	309	268	285	221
Beaver Brook	Miscellaneous	190	137	161	218	211.40	224	226.6
Black Ridge	do.	248	160	152				
Black Diamond	Schwenk, Robertson & Co.				276	175		
Bellmore	S. S. Biddle & Co.	165½	218	203	149.50	150	19.60	
Belmont mines	W. W. Watkins & Son	83						

Blackwood,	L. V. Coal Company,					53	248	194
Blue Ridge,	Blue Ridge Coal Company,							112.3
Babylon,						120.50	198.80	
Brennan's tunnel,	H. J. Brennan & Bro.,	50			127			
Barnum,	Pennsylvania Coal Company,	230	215	213	166	201.50	200.75	207.25
Breaker No. 10—Shaft Nos. 9, 10, 10 Jr., Abbott's slope,	do. do.	199			171			
Breaker No. 6—Shaft Nos. 5, 6 and 11,	do. do.	184						
Bernice drift—2 drifts,		244	273	220½	187	199.25	232	222.75
Breaker No. 8—Shaft Nos. 1 and 8,	Pennsylvania Coal Company,	184						
Black Diamond shaft		147		180½	112		188.50	223.65
Bennett shaft,		241	234	267	222.50	223.75	232.60	237.50
Breaker No. 6,	Susquehanna Coal Company,	209	228	262½	214.10			
Belmont tunnel,	Andrew Langden,		98	195				
Brennan's tunnel,	Frisbie & Co.,		100	219				
Butler slope and tunnel,	S. B. Bennett,		215	257	213			
Boston slope and drift and two tunnels,	Nelson Cowen,		180	222	95			
Buffalo tunnel,	Delaware and Hudson Canal Company,			197	53			
Baltimore slope No. 2,	do. do. do.			235		21.25	173	
Buck Ridge,	Philadelphia and Reading Coal and Iron Co.,			124	199.60	168.80	192.45	203.60
Brookside,	do. do. do.			297		283	290	289
Breaker No. 2 Harvey slope,	Susquehanna Coal Company,				159.40			
Bunker Hill No. 1,	Pennsylvania Coal Company,					236		
Coleraine,	Charles F. Shoener,							203.2
Chapman,	Butler Mine Company Limited,							222
Centralia and Lehigh,	Dr. G. M. Prevost,							
Cross Creek Nos. 1 and 2,	Coxe, Bros. & Co.,	281	207½	290				
Cross Creek No. 3,	do do.							
Cameron,	Min. Railroad and Mining Company,	228½	114	163	118.37	197.50	258.75	249.75
Cambridge,	Cambridge Coal Company,	200	200	190	205	180	139.75	236.80
Cuyler,	S. M. Heaton & Co							
Clifford,	Hilldale Coal and Iron Company,							216
Conner,	Philadelphia and Reading Coal and Iron Co.,	213½						
Colket,	do. do. do.							
Carbondale No. 1 shaft shaft and tunnel,	Delaware and Hudson Canal Company,	197	222½	244			199.50	
Carbondale No. 3 shaft,	do. do. do.		228	222			172.50	
Clear Spring,	Clear Spring Coal Company,	160	192	224½	165	192.60	202.25	220.65
Consolidated,	Hillside Coal Company,	162	189¼	209½	90	191.25	231.25	193
Continental,	Delaware, Lackawanna & Western R. R. Co.,	26	40	216	143.60	172.10	200.40	180.3
Central,	do. do. do.	180	215	214	139.90	105.50		182.2
Cayuga,	do. do. do.	178	204½	214	134.30	57	185	170.70
Capouse,	Lackawanna Iron and Coal Company,	221	203	220	158.40	189.20	184.70	210
Coal Brook,	Delaware and Hudson Canal Company,	211	243	265			210.50	219.75
Church,	Church Coal Company, Limited,	193	229	150	145	163	152	30
Conyngham,	Delaware and Hudson Canal Company,	181	196	206	229.50	144	98.75	154.25
Chauncey,		162						
Cranberry,	A. Pardee & Co.,	212	154	219	213			196.6
Coleraine,		211	173	211	248	262	274	
Colliery No. 9,	Lehigh Coal and Navigation Company,							237.1
Colliery No. 1,	do. do.							240.7
Colbert,	Smith & Keiser,						139.75	246
Corbin,	Excelsior Coal Company,					277	285	260
Centralia,	Lewis A. Riley & Co.,	216	242	219	211.35	185	199.70	197.80
Crystal,	Joseph Brady,	177		200				
Colliery No. 1,	L., C. & N. Company,							215.2
Coal Brook Tunnel mines,					234.25	224.50		
Clinton slope and tunnel,					147	148.75	221.25	221.25

Days in Operation of Anthracite Collieries—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Colliery No. 5,	Lehigh Coal and Navigation Company,							202.5
Chamberlain,	Thompson, Heath & Co.,	213	102	187	58	200	224.15	
Colliery No. 6,	Lehigh Coal and Navigation Company,							202.5
Clark tunnel,	Clark Tunnel Coal Company,		170	160	201		150	
Columbia shaft and tunnel,	Old Forge Coal Company, Limited,		165	214	180	175.90	182.50	210.50
Clifford shaft and slope,					209.25	207.75	208	
Cranberry,	A. Pardee & Co.,					199.50		
Diamond No. 1,	Charles Parish & Co.,							
Delaware and Hudson Canal Company,	Delaware and Hudson Canal Company,			114	222	214	221.50	223.75
Dunn shaft and slope,	Pennsylvania Anthracite Coal Co.,	187	111	122	164	194	203.80	
Dolph,	Dolph Coal Company, Limited,	184	202	193	168.50	155	144.50	98
Dunmore breaker,	Pennsylvania Coal Company,							
Dickson,	Delaware and Hudson Canal Company,	189	227	241	233.75	225.50	230.25	232½
Dodge,	Delaware, Lackawanna & Western R. R. Co.,	180	195	207	146.80	184.80	191.70	185.8
Diamond No. 2,	do. do. do.	182	195½	197				180.9
Diamond Tripp shaft,	do. do. do.	182	206	197	151.70	203.40	191.50	180.9
Diamond,	L. & W. B. Coal Company,	186	195½	200	15.70			
Dodson,		181	185	186	192.45	193.85	220.75	234.35
Dorrance,		222	245	225½	231.90	237.05	235.60	199.35
Derringer,	Coxe Bros. & Co.,	284	261½	621				255
Draper,	Oliver Diston,	202	212	240	201.85	241.10	264	170
Diamond,	John Lawrence,		295	200				
Denning & Bro.,			204					
Drifton Nos. 1 and 2,	Coxe Bros. & Co.,				565	401	287	252
Derringer & Gowen,	do. do.				574	292	295	
Ebervale,	Ebervale Coal Company,							
Enterprise,	H. C. Roberts & Co.,							
East Boston,	William G. Payne & Co.,		235		145	156	222.80	225.60
Empire No. 4,	Charles Parish & Co.,					198.25	202.45	180.40
Excelsior,	Excelsior Coal Mining Company,	246	274	272	265.80	272	287	249.90
Eagle Vein,	George W. Johns & Bro.,							
Ellangowan,	Philadelphia and Reading Coal and Iron Co.,	247	258	245	253.56	244.75	235.05	209.75
Elmwood,	do. do. do.	256	211	249	233	210.90	232.40	181.20
Eagle Hill shaft,	do. do. do.	260	257	249	223	227	226	205
East Franklin,	do. do. do.	87		35	203	163	196	178
Exeter,	Lehigh Valley Coal Company,		36	215½	132	87.45	143.60	193.70
Enterprise	A. Langdon,	241	222	239	226.50	196.25	178	219.50
Elmwood,	Florence Coal Company,	206	275	250½	201	240.85	184.90	188.70
Eddy Creek,	Delaware and Hudson Canal Company,	198	248	254	132	127.75	88.75	222
Eaton mines,	Jones, Simpson & Co.,	193	237½	239	218.50			
Edgerton,	Edgerton Coal Company, Limited,	196	228½	203	183.90	168	201	208.2
East Sugar Loaf No. 5,	Linderman, Skeer & Co.,					243.40		
Eagle,	Thomas Crockson,							230
Evans,	Evans Mine Company,							261.1
Erie,	Hillside Coal and Iron Company,	210	197	246½	198	183.75	237	240.75
Empire,	Lackawanna and Wilkes-Barre Coal Company,	187	197½	214½	166.05			
Elk Hill Coal and Iron Company,							139.50	232.75

East End								
East Crystal Ridge	A. Pardee & Co.							
Eckley No. 2	Coxe Bros. & Co.	92						
Eckley No. 5	do. do.	279	188	234	301	277	259	259
Ebervale Nos. 1 and 3								
East Sugar Loaf No. 1	Linderman, Skeer & Co.	14½	123½		233	247.30	192.40	194
East Sugar Loaf No. 2	do. do. do.	222	184½		239	237.40	246	194
East Sugar Loaf No. 3	do. do. do.	252						196
East Sugar Loaf No. 5	do. do. do.	246	192½		252		243.30	196
East Sugar Loaf No. 6	do. do. do.							194
Enterprise	Thos. Baumgardner & Co.							
Eagle	Philadelphia and Reading Coal and Iron Co.	245	235	197	84	15		
Ellsworth	John R. Davis	249	269	255	267	283	278	287
East Lehigh	Mitchell & Shepp	168	160	220	189	214	130	230
East Boston shaft		161		217½				
Ewen breaker Tunnel No. 1; Slope No. 4; Shaft No. 7; Shaft No. 8	Pennsylvania Coal Company	173		159				
Eckley No. 10	Coxe Bros. & Co.		249	247	319	319	286	
Enterprise	Enterprise Coal Company	185	251	268	213			
Evans	Miscellaneous					204	271.70	
Franklin	R. R. Morgan, superintendent							
Filer	G. Filer and T. Livey							
Furnace	Philadelphia and Reading Coal and Iron Co.			225	230	230	111	246
Forestville	do. do. do.							
Forty Fort	Wyoming Valley Coal Company	270	253	219½	218.50	206.80	188.10	216.75
Fuller	Delaware, Lackawanna & Western R. R. Co.							
Forest City	Hillside Coal and Iron Company	197	266½	270	219	215.75	244	217.25
Fair Lawn	Fair Lawn Coal Company, Limited	177	206½	177	178.25	35		
Filer's slope, now Mt. Jessup	Griffiths, Thomas & Co.	146	134	252½				
Franklin		186	245	243	190.50	122.15	194.50	170.25
Fairmount		48	50	151	92.50	82	97	214
Frisbie Coal Company							200	
Filer's slope	Jessup Coal Company		134					
Flowery Field				240	211			205
Ferndale						195	198.90	204.80
Feger Ridge				149				
Fall Brook tunnel	John Murrin				143			173
Fernwood shaft	Butler Coal Company					192	223	84
Glen	P. McBrearty & Peiffer							
Glen City	W. A. M. Grier							
Greenback	H. J. Tondy							
Glendon	J. C. Hayden & Co	189	150	236	162.60	223.80	211.10	161.80
George Fales	Philadelphia and Reading Coal and Iron Co.							
Girard	do. do. do.	40		15	217.90	234.60	225.20	201.95
Good Spring	do. do. do.					260	286	207
Gilberton	do. do. do.	202	259	242	251.25	258.05	248	210.95
Glendower	do. do. do.	240	232	122	96	167	221	210
Glendale	Glendale Coal Company							
Greenwood	Pennsylvania Anthracite Coal Company	47	150½	183½		139.30	155	58.6
Green Ridge	O. S. Johnson	194	230	272	226.50	215	226.75	225½
Grassy Island	Grassy Island Coal Company, Limited	157	158½	200	235	19.30		
Grassy Island	Delaware and Hudson Canal Company	186	83	252	136.50	210.50	202.50	224.50
Grand Tunnel No. 3	Susquehanna Coal Company	228	195	237				
Gaylord	Kingston Coal Company	173	184½	210	172.50	161.75	239	245.55
Gowen	Coxe Bros. & Co.	284	261½	621				
Girard Mammoth	Philadelphia and Reading Coal and Iron Co.	218	202	227	233.60	235.35	243.40	207.85
Garfield	Garfield Coal Company, Limited	95	171½	235	89.80			

Days in Operation of Anthracite Collieries—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Greenwood shaft					114			206.9
Glenwood shaft	Hilldale Coal and Iron Company			206	186	176.25	241.75	250
Greenwood No. 13	Theo. Oliver			245	242	232	251	254
Greenwood					12			
Gypsy Grove	Pennsylvania Coal Company					197		237.75
Gypsy Grove No. 2	do. do.							240
Hollenback	Robert L. Poole							
Hillman	H. L. Hillman	189	274	228	146.20			
Humbolt	Linderman, Skeer & Co.	207	144½			215.30	203.50	184
Hazleton	A. Pardee & Co.					229.30	243.50	144.8
Hartford No. 6	Chas. Parrish & Co.							
Hillside Coal and Iron Company	Hillside Coal and Iron Company							
Henry Clay No. 1	J. Langdon & Co.							
Hammond	Philadelphia and Reading Coal and Iron Co.	245	236	249	227	243.90	247.65	204.90
Holden	Delaware, Lackawanna and Western R. R.	195	214	208	144.80	183.20	176	129.8
Hyde Park	do. do. do. do.	183	193½	220	137.40	204.70	177	172.5
Henry	Lebanon Valley Coal Company	186	208	213	147	225.20	180.40	195.90
Harry E.	Wyoming Valley Coal Company	259	249	200	191	179.30	39.90	
Heidelburg	Lebanon Valley Coal Company	201	202	191	162.50	140.30	24.15	78.10
Heidelburg shaft	do. do.					111.35	180.45	
Halstead	Delaware, Lackawanna & Western R. R. Co.	182	210	213	152.50	166	164.70	192.40
Hillman vein		148	247	204½	111	82	251.95	192.35
Hillman vein No. 2						159.90		
Hartford or Jersey	Lackawanna and Western Coal Company	189	184½	215	149.50			
Hollenback	do. do.	191	219	225	128.65	115.85	55.25	
Hazleton No. 3	A. Pardee & Co.	232	209½	252	225		230.40	185.5
Hazleton No. 6							138.10	149.3
Highland No. 1	G. B. Markle & Co.	212	143½	210	231	267	202	173
Highland No. 2	do. do.	207	138	182	191	217	200	197
Highland No. 5								27
Hollywood		200½	143½	198	215.50	202	230	218.7
Harleigh		43½						
Hazle Brook		195	170	200	208	219	225	198.4
Honey Brook No. 1	Lackawanna & Western Bituminous Coal Co.							
Honey Brook No. 2	do. do. do.							233.7
Honey Brook No. 4	do. do. do.	237½	161	198	265	251.10	260	260
Honey Brook No. 5	do. do. do.	232	169	200	269	265.40	262	262
Harwood	Pardee Sons & Co.						210.20	248.5
Hickory Ridge	Philadelphia and Reading Coal and Iron Co.							198
Hazel Dell	Lewis A. Riley & Co.	216						
Hickory Swamp	Union Coal Company	202	234	414	169	89	164.25	268.25
Herbine	J. K. Stigfried	220	275	297	235	215		
Hooker	Wren & Lessig	261	250	214	250	203	156	220
Hampton shaft	Delaware, Lackawanna & Western R. R. Co.	56	211½	159	142.80	189.30	197	188
Hunt shaft	do. do. do.	215	210	194½	149			
Henry Clay	Philadelphia and Reading Coal and Iron Co.	163	261	287	267.15	207.30	243.15	216
Hickory Ridge	Union Coal Company	215	240	240½	175.50	148.25	195	

Honey Brook, No. 2.	Lackawanna & Western Bituminous Coal Co.,			195	249	251.20	233.70	
Hoyte shaft.	Pennsylvania Coal Company,					215 25	200.75	
Indian Ridge.	Philadelphia and Reading Coal and Iron Co.,	206	250½	243	194.50	243.55	227.50	204.90
Jersey No. 8.	Lackawanna and Western Coal Company,					113.85	185.55	167.20
Jermyn No. 1.	Delaware and Hudson Canal Company,	203	249	253	231.75	207.75	202.50	224.25
Jermyn No. 2.	do. do. do.	146				69.50	175.60	165.4
Jermyn No. 4.	John Jermyn,	206	221	252½	211.20	182.30	195.50	168.6
Jermyn No. 3 slope.	do. do.				18.80	189.40	234.70	187.7
Jones, Simpson & Co.,						209.90	213	229.9
Jeddo No. 3.	G. B. Markle & Co.,					258	236	204
Jeddo No. 4.	do. do.					238	244	227
Kline.	John L. Kline,							
Kohinoor.	Richard Heckscher & Co.,							
Kehley's Run.	Thomas Coal Company,	241	267	240	234.25	259.50	255.75	240.75
Keystone.	Philadelphia and Reading Coal and Iron Co.,	159	236	256½	171.25	135.55	202.15	187.20
Knickerbocker.	do. do. do.	219	229	222	221.50	206.60	245.60	214.80
Keystone.	Hillside Coal and Iron Company,	250	254	267½	224	225	211.50	156.25
Kohinoor.	Philadelphia and Reading Coal and Iron Co.,	214½	246	250	241.50	235.15	203.35	178.30
Kalmia.	do. do. do.	241	9					
Kaska William.	Alliance Coal Company,	280	189	202	205	135	189	156
Keichline.	P. O'Connor,	195	126	225	15	30		250
Keystone slope and drift.		17	259	250	192	267	236.25	34.20
Katydid tunnel.		197	167½		191	187.25	207	202.25
Little Mine Run.	Pfeiffer & Garity,							
Lance No. 11.	Chas. Parrish & Co.,							
Luke Fiddler.	Mineral Railroad and Mining Company,	165	139	232	190.50	231	251.75	242.25
Locust Spring.	Philadelphia and Reading Coal and Iron Co.,	221½	241½	248½	223.25	243.30	242.50	210.15
Locust Run.	do. do. do.							
Lawrence.	Lawrence, Markle & Co.,			202		186.25	200	
Leggett's Creek.	Delaware and Hudson Canal Company,	193	238	222	232.50	213.25	220	234.25
Lackawanna Coal Company.	Lackawanna Coal Company,	201	230	252	219.30	239.30	300.80	277.4
Laurel Run.	Delaware and Hudson Canal Company,	191	230	253	209	220.75	177.75	210.50
Laws.	Pennsylvania Coal Company,	252	222	212			199.75	
Lance No. 11.	Lackawanna & Western Bituminous Coal Co.,	189	210	217	172.50	208.25	203.70	174.95
Laurel Hill.	A. Pardee & Co.,	168	144½	239	248.50	238.20	252.30	196.5
Lansford No. 4.	Lehigh Coal and Navigation Company,	220	182½			253.30		
Lansford No. 5.	do. do. do.	250	151			208.60		
Lansford No. 6.	do. do. do.	250	151			208.60		
Lansford No. 9.	do. do. do.	252	170½			257.40		
Lansford No. 1.						279.20		
Lytle.								309
Lee.	Newport Coal Company,					192.20	175.30	181.20
Latimer No. 2.	Pardee Bros. & Co.,	186	133½	114	103	39.50	72.50	210
Latimer No. 3.	do. do.	205	142	300	212.50	186.50	255.60	220.1
Lawrence.	Lawrence & Brown,	264	284		250			194.25
Locust Mountain.	W. J. Lloyd,							
Locust Gap.	Philadelphia and Reading Coal and Iron Co.,	202½	249	220½	238.40	249.80	247.10	215.90
Lancaster.	Smith & Keiser,	96	210½	227	87.50			
Logan.	Lewis A. Riley & Co.,	213½	240½	233	201.40	190.50	195.70	198.15
Lincoln.	Philadelphia and Reading Coal and Iron Co.,	243	249		268			
Lehigh No. 1.	Lehigh Coal and Navigation Company,						238.20	
Lehigh No. 8.	do. do.	256	179	212	252	245	212	236
Lehigh No. 10.	do. do.	246	183	188	250	256	228	203
Lehigh No. 11.	do. do.	251	161	211		203	219	221
Lehigh No. 12.	do. do.	240	154	211	219	116	216	215
Lehigh No. 13.	Swartz, Oliver & Co.,		209					
Lehigh No. 3.	Miscellaneous.	197		239				

Days in Operation of Anthracite Collieries—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Lehigh No. 9.	Lehigh Coal and Navigation Company.			219	253		227.50	
Lehigh No. 4.	do. do.			200	218		115.80	
Lehigh No. 5.	do. do.			116	250		219.80	
Lang Cliffe.					25.50	197.10	239.55	139.80
Midvale slope.	Lehigh Valley Coal Company.					42.45	22.80	
Maltby.	Caleb S. Maltby.			13	20	103.90	192.10	183.5
Mt. Pleasant.	Pardee, Sons & Co.							
Mt. Lookout shaft.	Mt. Lookout Coal Company.						71.50	193.20
Monitor.	George W. Johns & Bro.							
Merriam.	Philadelphia and Reading Coal and Iron Co.	222	239	217	180.85	194.70	225.10	155
Mahanoy City.	do. do.	233	242½	225½	238.50	245.60	163	180
Morning Star tunnel.	John A. Hutchins & Co.						132	
Mine Hill gap.	Philadelphia and Reading Coal and Iron Co.							
Maple Hill.	do. do.							158.5
Mt. Carmel shaft.	do. do.	80						
Meadow Brook shaft.	Wm. Connell & Co.	213	218½	231½	185.70	185.60	226	212
Manville.	Delaware, Lackawanna and Western R.R.Co.	69	123	108	95.25	77	74.50	144.3
Marvine.	Delaware and Hudson Canal Company.	185	242½	254	229	222.50	221.50	238.25
Mineral Spring.	Lehigh Valley Coal Company.	175	202	192	41.50	88.90	16.60	
Mill Creek.	Delaware and Hudson Canal Company.	196	209	228	221	154.25	141	221
Mosier.	Butler Coal Company.	236	222	249	79	40	58.20	
Mt. Pleasant.	Wm. T. Smith.	180	197	228	72	211.90	200	213.7
Moffit.		164	206½	233	210.80	147	185.10	166.40
Morea.	Dodson Coal Company.					236	235	244
Milnesville.		241	126	208	213.50	223	226.60	227.2
Mt Pleasant.		197½	145	194	172	192		
Monitor.	Philadelphia and Reading Coal and Iron Co.	234	215	251	108.05	142.65	169.95	193.30
Mt. Carmel.	Thomas M. Righter & Co.	210½	234	231½	175.90	176.70	257	193.20
Morris Ridge.	Isaac May & Co.	241	257½	269	242	198.50	194.80	209.50
Middle Creek shaft.	Philadelphia and Reading Coal and Iron Co.	219	250	228	277	158	170	203
Monitor.	John Denning.							
Middle Lehigh.	Mill Creek Coal Company.				223	205	210	
Meadow Brook tunnel.	Wm. Connell & Co.	200	196	234½	179.50	185.10	191.40	211.4
Manville shaft.	Delaware and Hudson Canal Company.	100	121	125	90	77	73.50	
Midvalley.	Midvalley Coal Company.						247	199
Mt. Vernon.	B. M. Winton & Co.							81
Murry & Jackson shaft.	Hillside Iron and Coal Company.					202	204	204.25
Mahanoy Jig House.		256						213.20
Morning Star.	J. A. Hutchins & Co.							180
Milford.	Docker & Co.	20						
Millhollow shaft.	Thos. Waddell.		216	201	217	192.10		205.6
Marshwood slope and tunnel.	Moosic Mt. Coal Company.			120	217	193	218	202
Mill Creek.							187	207.50
Mt. Jessup slope.	Mt. Jessup Coal Company.				186	94.40	171.50	244.48
Midland tunnel.	Delaware and Hudson Canal Company.					224.50	210.50	
Nottingham No. 15.	Chas. Parrish & Co.					171.90	225.95	
North Franklin No. 2	Philadelphia and Reading Coal and Iron Co.	196	191½	187	148.85	98.30	225.65	140.50

North Ashland	do. do.	129	247	247	139.90	232.18	195.70	209.70
North Mahanoy	do. do.	253	261	252½	247.50	245.40	241.10	215.90
National slope and shaft	Wm. Connell & Co.	146	196	231		183.10	191.40	212
Nottingham	Lackawanna & Western Bituminous Coal Co.	185	206½	217	177.75			132.75
No. 10 shaft	Pennsylvania Coal Company							216.75
Newport	Susquehanna Coal Company				212			
No. 3	A. Pardee & Co., Hazleton	247½	140	224	108.50	201.20		123.30
No. 6	do. do.	24.½	154½	168	126	134		
No. 13, shaft	Pennsylvania Coal Company							234.75
Nesquehoning No. 3	Lehigh Coal and Navigation Company	216	155		272			
North Laurel Ridge	S. H. Barrett	265	252	151				
New Lincoln	Levi Miller & Co.	248	267	210	263	224		
Shafts Nos. 1 and 8	Pennsylvania Coal Company							218.75
Nos. 1 and 4 shafts	Kingston Coal Company	232	296½	455	332.75	177.77	57.45	274.20
Nos. 2 and 3 shafts	do. do.	231	240½	234	183.65	188.05	246	10.30
Nos. 1 and 2	Delaware and Hudson Canal Company	184	217	203	120.50	191.25		214.50
No. 3	do. do.	192	234	224	198.50	181.50		192.75
No. 4	do. do.	177	215	237	224.25			
No. 5	do. do.	186	217	227	182.35			
Neilson	A. L. Langdon & Co.	301	297	199	244.50	30.25	269.75	270.25
New Boston	Mill Creek Coal Company	206	249	246				214
New Town		150						
Natalie	Patterson Mine Company							207
No. 2	Linderman & Skeer			200				
Nos. 5 and 6	do.			221				
No. 1 shaft and White Bridge tunnel	Delaware and Hudson Canal Company				205.75			
No. 3 shaft mines	do. do.				203.75			
Ontario shaft	New York and Scranton Coal Company					53.80	223.40	239
Otto	Philadelphia and Reading Coal and Iron Co.	150	96	156	196	217	226	220
Old Forge slopes Nos. 1 and 2	Pennsylvania Coal Company	239	228½	210	173.50	207	200	224
Oxford	Delaware, Lackawanna and Western R. R. Co.	183	172	215	146	186.10	188.30	154.1
Oak Hill	Leisenring & Co.					204	241	242
Olyphant No. 2	Delaware and Hudson Canal Company		219	250	122.75	42.75	226.75	222
Oneida	Coxe Bros. & Co.						56	239
Oakdale No. 1	G. B. Markle & Co.	218	140	197	248			
Oakdale No. 2	do.	201	145½	206	242			
Old Lincoln	Philadelphia and Reading Coal and Iron Co.			287		219	289	290
Ontario No. 1 mine	Ruse & Moser					120	569.40	251.5
Phœnix	Harry W. Bellman						40.50	147.30
Pennsylvania Coal Company	Pennsylvania Coal Company							
Peerless	Crinkshank & Emes							
Pennsylvania	Mineral Railroad and Mining Company							
Pioneer	Kantner, Vaughn & Co.							
Patterson	Patterson Ore Mining Company						25	
Pattibone	Delaware, Lackawanna and Western						206.10	200
Primrose	Primrose Coal Company					221	221	
Potts	Philadelphia and Reading Coal and Iron Co.						120.10	133.90
Preston No. 1 and 2	do. do.							
Preston No. 3	do. do.	255	262	235			152.40	191.70
Prospect	Lehigh Valley Coal Company							196.45
Plank Ridge	Philadelphia and Reading Coal and Iron Co.							
Pottsville	do. do.							
Pine Forest	do. do.					39	239	189
Phœnix Park No. 2	do. do.							
Phœnix Park No. 3	do. do.	196	243	240	249	198	114	205
Pyne	do. do.					186.80	189.70	185.1
Pancoast	Pancoast Coal Company (Limited)	204	222	226	199.50	205.75	228.75	182.75

Days in Operation of Anthracite Collieries—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892
Powderly	Delaware and Hudson Canal Company	204	233½	248	210.25	186.50	205.75	223.25
Prospect	Lehigh Valley Coal Company	217	223½	224	178	195.30	203.55	
Pine Ridge	Delaware and Hudson Canal Company	196	250½	253½	236.50	234	209.25	248.75
Pierce	Pierce Coal Company (Limited)	135	209	146½	102.20	72.60	147.90	146.5
Pyne shaft and slope	Delaware, Lackawanna and Western R. R. Co.	182	203	183	150			
Plymouth No. 2	Delaware and Hudson Canal Company							
Plymouth No. 3	do. do.							
Plymouth No. 4	do. do.							
Plymouth No. 5	do. do.							
Parrish	Miscellaneous	279½	162	247	202.60	205.20	205.95	160 10
Pond Creek	do.	275½	168½	212	273	158	177.40	
Packer No. 2	Lehigh Valley Coal Company			167½	76.50	152.45	151.20	209.80
Packer No. 3	do. do.	235	136	210½	159.35	99.55	173.50	205.80
Packer No. 4	do. do.	217	132½	175	167.95	148.15	149.20	89.20
Packer No. 5	do. do.	191½	112	186	133.95	175.10	150.95	87.60
Park No. 1	Lentz, Lilly & Co.	11½						
Park No. 2	do.	176	205	241	199.10	190.03	212.90	177.80
Primrose	Nevills & Co.	219	244	256	191			202.50
Peerless	Philadelphia and Reading Coal and Iron Co.	233			267.15		243.45	
Pennsylvania	Union Coal Company	242	253	213	216.50	189.25	287.75	281.80
Phœnix No. 3	Philadelphia and Reading Coal and Iron Co.							
Palmer Vein	Alliance Coal Company	1		52	188			
Peach Orchard	R. White & Co.							200
Pine Dale	Slemmer & Co.	125						
Peach Mountain	Morgan Williams							
Pine Brook shaft	Lackawanna Iron and Coal Company	70	173	303	182.60	205.30	184.50	194.4
Peckville tunnel			6					
Providence shaft	Providence Coal Company				172	199	231	229
Ransch Gap	William H. Yohe							
Reliance	Philadelphia and Reading Coal and Iron Co.	195	239½	231	127.85	179.95	225.45	192.85
Richardson	do. do.	221	239	187		50	165	210
Richmonds	Elk Hill Coal and Iron Company	152	135	151				
Racket Brook	Delaware and Hudson Canal Company	241	259	265	254.50	186.50	242	232
Ravine	Newton Coal Company					179.70	221	
Red Ash	Wm. Walters							150
Riverside shaft							6.90	151
Randville	Thos. Waddel	205						
Red Ash No. 1		163	194½		178.15	171.50	188.80	186
Red Ash No. 2		162	207		175	169.90	200 75	178.35
Reynolds	Lackawanna & Western Bituminous Coal Co.	185	203	214	177	220.05	194.75	188.50
Royal Oak	Tillett & Bro.	80	100					
Repplier	John Quinn							
Rush Brook shaft	Reading Bituminous Coal Company, Limited				212	139	191.40	
Reserve	Denning Bros.					240	215	200
Short Mountain	Lykens Valley Coal Company	276	283	292	272.25			306.50
Spring Mountain for 1885, and following years Nos. 1 and 2; for 1886, 1887, 1888 and 1889, Nos. 1 and 4	J. C. Hayden & Co.	152	293	385	453	467	439	207.1

Susquehanna No. 1,	Susquehanna Coal Company,					214	149.75		
Susquehanna No. 2,	do. do.					214.05	264.65		
Susquehanna No. 3,	do. do.					118.90	108.15		
Susquehanna Nos. 1 and 4 tunnel,	do. do.					214	149.75	232	
Susquehanna No. 1 George vein,	do. do					214.05	264.65	232	
Susquehanna No. 1 Forge vein,	do. do.					214.05	264.65	232	
Susquehanna No. 1 Lee vein,	do. do.					214.05	264.65	232	
Susquehanna No. 2 shaft,	do. do.					222.55	270.80	254	
Susquehanna No. 4 slope,	do. do.					222.55	270.80	254	
Susquehanna No. 6 shaft,	do. do.					205.70	249.95	216	
Susquehanna No. 6 slope,	do. do.					205.70	249.95	216	
Susquehanna No. 6 tunnel,	do. do.					205.70	249.95	216	
Salem,	Salem Coal Company,								
Sugar Notch No. 9,	Charles Parrish & Co.,					198.50	192.20	188.10	
Sugar Notch No. 10,	do. do.								
Stuartville,	Wm. Montelius,								
Stirling,	Kendrick & Co.,								
Staffordshire,	Jones, Ward & Oliver,								
Shenandoah City,	Philadelphia and Reading Coal and Iron Co.,	243	261	251	214.35	209.80	191.15		
Schuylkill,	do. do.	226	213½	243½	217.75	219.05	231.80		
Spring Brook,	Wm. E. Colburne,							207.6	
Sibley shaft and slope,	Elliott, McClure & Co.,	142	225	212	178	180.85	211.60	225	
Sloan,	Delaware, Lackawanna & Western R. R. Co.,	168	213½	210	158.50	195.50	184 70	182.1	
Shaft No. 13 shaft and slope,	Pennsylvania Coal Company,		222	212	173	206.25	199.75		
Shaft No. 2, Dunmore,	do. do.	258	285	181					
Shafts Nos. 3 and 4, Dunmore,	do. do.	220							
Shaft No. 5, Dunmore,	do. do.	270							
Screens, Dunmore,	do. do.								
Spencers, Dunmore,	A. D. & L. M. Spencer,	133	181	208	160.90	181.50	182.75	169½	
Schooley,	Butler Coal Company,	201		197		187		180	
Shafts Nos. 1 and 2,	Pennsylvania Coal Company,								
Shafts Nos. 1 and 8,	do. do.					83.50	216.25		
Shaft No. 7,	do. do.					215.25	200.75		
Shafts Nos. 5, 6 and 11,	do. do.				171		196.25		
Shafts Nos. 9 and 10,	do. do.					208.50	196.50		
Shaft No. 4,	do. do.		262	249		215.25	200.75		
Shaft slope and tunnel No. 14,	do. do.						198		
Slope No. 2,	do. do.								
Slope No. 4,	do. do.						200.75		
Stanton,	Lackawanna & Western Bituminous Coal Co.,	181	221	195½	159.65	90.60		160.30	
Sugar Notch shaft,	do. do.	186	207½	209	164.30				
Salem,		141							
South Sugar Loaf,	A. Pardee & Co.,	196	144½	208	196.50	155.30	156	181.9	
Sunshine,	West Side Coal Company,							185	
Sandy Run,		275½	168	212	275	220.50	243 80	249.4	
Suffolk,	Philadelphia and Reading Coal and Iron Co.,	240	245	292	149.10	243.20	248	209.5	
Stanton,	do. do.	237	241	7½					
South Laurel Ridge,	S. H. Barrett,	125	198	193	151	40			
Shenandoah City,	Philadelphia and Reading Coal and Iron Co.,							209.25	
Star,									
S. V. White Mines,	Winton Coal Company, Limited,	224	202½	204	105	179.50	198.10		
Simpson's mines,		122	259	213	219.50	216.30	207	217.25	
Shaft No. 11,	Pennsylvania Coal Company,	87	111	219½	174.50	167		237	
Silver Brook,	Silver Brook Coal Company,	69	176	232	269	246	213	235	
Silver Brook No. 2,	Silver Brook Coal Company,							83.30	
Stirling,	Philadelphia and Reading Coal and Iron Co.,	102			267.15		243.45		
Schuylkill Valley,		62	163	200	163	210	216	198.25	

Days in Operation of Anthracite Collieries—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Shaft No. 1.	Pennsylvania Coal Company.		290	282½	28.50	191	206	
Shaft No. 3.	do. do.		262	294	207.25		205	
Shaft No. 5.	do. do.		286	274	212.50	214	210.50	
Stafford shaft.	Wm. Connell & Co.		88½	233½	179.50	183.10	191.40	212
Shaft.	Upper Lehigh Coal Company.						246.80	
Shaft No. 9, Hughestown—No. 10 breaker.	Pennsylvania Coal Company.		208	140				
Shaft No. 10, 10 Jr. and Abbott's slope No. 10 breaker.	do. do.		217½	205				
Shaft No. 1, Hughestown—Ewen breaker.	do. do.		260	224				
Shaft No. 8, Hughestown—Ewen breaker.	do. do.		260	224				
Slope No. 1, Jenkins—Ewen breaker.	do. do.		251½	224½				229
Shaft No. 7, Jenkins—Ewen breaker.	do. do.		260½	227				
Schuylkill Valley.	Rich, White & Co.							156
Shaft No. 5, Jenkins—No. 6 breaker.	do. do.		218	219½		202.75		216½
Shaft No. 6, Jenkins—No. 6 breaker.	do. do.		218	219½		202.75		
Shaft No. 11, Jenkins—No. 6 breaker.	do. do.		218	221½		202.75		215.25
Seven local sale mines.						92		
Schooley shaft.	Nelson & Cowan.		209		221		188	
Short Mountain.	Lykens Valley Coal Company.					271	302.85	
Stockton.	Coxe Bros. & Co.		32	196	256	255	274	246
Springdale.	Lentz, Lilley & Co.		165	54½			172.90	183.30
Seneca shaft.	Butler Colliery Company.			145	224.50	179.70		
S. Wilkes-Barre, Nos. 3 and 5.	Lackawanna and Western Coal Company.							46.80
South Shenandoah.	H. Reese.			210				
Steven's slope.					30	279.40	246.30	230.50
St. Nicholas.	Philadelphia and Reading Coal and Iron Co.				92.80	252.70	248	219.65
Storr's shaft.					25.40	148.50	174.30	184
Shaft No. 2.	Delaware and Hudson Canal Company.					105.25	155.75	210
Shaft No. 3.	do. do.					184.75	187.75	212
Shaft No. 4.	do. do.					162.75	189	217
Shaft No. 5.	do. do.					159.85	185.50	189
Tremont.	Peter Laux.							
Tunnel Ridge.	Joseph B. Cole.					146	216.25	219.50
Tunnel.	Philadelphia and Reading Coal and Iron Co.	143	193½	218	189.90	166.35	65.55	
Turkey Run.	do. do.	248	262½	250	222.70	245.45	241.90	186.85
Thomaston.	do. do.	203	244	193	193	190	164	212
Taylors.	Delaware, Lackawanna & Western R. R. Co.	209	211	231	163.70	196.50	194.80	182.1
Tunnel No. 1.	Pennsylvania Coal Company.							
Twin.	Butler Coal Company.	201	163½	67			221	191
Tomhicken.	Coxe Bros. & Co.	200	200	209	278	227	303	222
Treskow.		206	142					
Tunnel Ridge.	Philadelphia and Reading Coal and Iron Co.		60½	67½	190.10			
Tripp & Co.						255	264	
Upper Lehigh Nos. 1, 2, 5, 6, 7 and 8.	Upper Lehigh Coal Company.	247	162	215	253	264.10	246.80	265.4
Upper Lehigh No. 4.	do. do.	258	163	206	237	242.20	219.70	
Von Storch shaft and slope.	Delaware and Hudson Canal Company.	199	233	250½	227	233	224.75	229¼
Vulcan.	Wm. L. Williams.	200	160	240				

Wilson Creek tunnel mines	Delaware and Hudson Canal Company						224.50	219.50		
West Hazel Dell	Wm. Peiffer									
Williamstown	Summit Branch R. R. Company	168	502	505	240.40	282.40	303.75	305.25		
Wauwamic No. 18	Chas. Parrish & Co.					196.30	190.90			
William Penn	E. N. G. Brooke									
West Side Coal Company							75			
West Shenandoah	Philadelphia and Reading Coal and Iron Co.	242	253	248	227.15	248.85	245.35	242.45		
Wadesville shaft	do.									
West Brookside	do.	252	273		282					
Wilcox	Richard Cartwright									
White Oak slope and drift	Delaware and Hudson Canal Company	206	248	255	230.50	215.25	220	239		
Wyoming	Lehigh Valley Coal Company	183	178	192	113.50	116.30	109.85	106.25		
Warrior Run		151	202	207	196.20	146.25	187.10	196.90		
West End		264	264	280	271.15	221.90	257.30	278.10		
Wanamie	Lackawanna & Western Bituminous Coal Co.	188	207	215	170.30	196.30	190.40	186.65		
William Penn	Wm. Penn Coal Company	253	263	263	237	243	252	222		
West Lehigh	Dunkleberger & Co.		239	238	258	147	121	229		
Winton	S. V. Winton							185.8		
Wolf Creek Diamond		302								
Watkin's slope and tunnel	Watkin's Tunnel Company		8		45					
Woodward				97	155.90	184.60	194.70	185.50		
W. M. Weeks	Linderman & Skeer			225			210			
West No. 1										
William A shaft	Philadelphia and Reading Coal and Iron Co.			79	221.35	110	205.05	181.7		
West Bear Ridge						185	242	201.35		
White Ridge	G. H. Myers & Co.						245.40			
Yorktown No. 5	do.	159	86							
Yorktown No. 6	do.	214	158		241		251.10			
Yorktown	do.			158			88	138		
York Farm	Lehigh Valley Coal Company									

Days in Operation of Bituminous Collieries.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
American,	F. H. Coursin,			149		232		
Allequippa,	Bailey, Wilson & Co.,				122	211½	165½	
Amity,	J. C. Risher & Co.,				125	215	220	149
Allison's,	John Allison,			220		250	208	201
Allegheny,	Allegheny Coal Company,	171	174	217½	225	225	248½	165½
Antrim Nos. 1, 2 and 3,	Fall Brook Coal Company,	278	256	212	235	176	218	179
Arnot Nos. 1, 2 and 3,	Blossburg Coal Company,	291	233	226	191	193½	263½	218½
Anchor,	Laing & Davidson,		200		175	244	240	206
Argyle,	Huff & Coulter,	284	317	314	313	315	313	313
Allequippa,	Bailey, Wilson & Co.,	188	107	132½				139
Amity,	J. C. Risher & Co.,	176	135	187				
Atlantic,	Berwind, White & Co.,	162	184	323	451	230	255	244
Atlanta,	Welsh & Epley,		170		173	281		
Alice,	J. M. Schoonmaker,	266	226	222	286			
Alexandria,	Alexandria Coal Company,	300	293	201½	314	304	256	236
Amicville,	J. M. Bigley,	188	168	201	200	240		106
Arnold,	Arnold Co-operating Coal Company,	44						
Alpsville,	Thos. Hackett & Co.,	293	295	300	216			
American,	Washington Coal Company,	142			189		185	
Acme,	Stockdale Coal Company,	175	200	220	102	200	220	160
Abe Hays,	W. S. B. Hays,	180	137	136	155	176	171	
Albany,	Snowdon & Hogg,	180	176	206	196	247	257½	244
Arona,								42
Acbar,	Acbar Mining Company,	62	118					
Anchor,	Penn Manufacturing and Supply Company,	225		105				
Atlas,	Atlas Coke Company, Limited,	244	221	109	165		211	130
Aurora,	Hirst & Luke,	195	265	250	265	231	243	200
Anchor,	Clearfield Consolidated Coal Company,	34						161
Atlantic,	Lake Erie Gas Coal and Coke Company,	95	130	20			247½	
Ashland,	Berwind, White & Co.,	147	260	153	220	201	202	250
Atlanta No. 1,	Atlanta Coal Company,	130		198				
Atlanta No. 2,	do. do.	270						
Allison,	Jonathan Allison,		200					
Anderson,	D. M. Anderson,		317	221	156	251	160	
Acme,	Acme Mining Company,		88½	251½	168.50	191	226	276
Adrian Mines 1 and 2,	Rochester and Pittsburg Iron and Coal Co.,		295	235	233	211	248	282
Ashman,			96	67	270	187		
Alexander,	Medora Coal Company,		113	123	150	220½	146	285
Alder Run,	Alder Run Coal and Coke Company,		200	36				
Avondale,	Avondale M. F. and Gas Company,			274	256.50	245	239	150
Albion,	Albion Coal Company,			45	241	200		
Atlas,	Cambria Iron Company,			36		225		
Amsbry,	Cambria Coal and Coke Company,			94	233	252	242	240
Avonmore,					115	254	200	220
Allen,	Allen Coal Company,					91	211	170
Apollo,	Maher Coal and Coke Company,						98	215
Adelaide,	H. C. Frick Coke Company,				305	279	198	271
Allison,	John Allison,				250			

Acme,	Acme Coal Company,				209	221	154	118
Buffalo,	J. J. Staltler,	265				88		
Beale,								100
Banner Nos. 1 and 2,	John M. Ribner,							
Big Chief,	J. Blythe & Co.,						200	219
Bellevue,	Bellevue Coal Company,				130	75		
Bear Rock,	Bear Rock Coal Company,							75
Blackburn,	Foster, Clarke & Co.,	176						
Bellwood,	Munhall Bros.,						157	120
Beck's Run,	H. B. Hays & Bro.,						86	32
Buena Vista,	South West Coal Company,							
Blythe,	Blythe & Co.,	208				144	166	156
Bowden,	Chartiers Valley Coal and Coke Company,	206						
Big Soldier Run,	Bell, Lewis and Yates,					288	253	273
Bower Hill,	A. J. Schultz,					182	200	200
Beedle,	Beedle Bro.,							
Beech Cliff,	Imperial Coal Company,							205
Benham,	Scott & Co.,							
Barnes,	Mercer Mining and Manufacturing Company,	120	169	181	235	257	175	53
Black Diamond,	Filer, Sutliff & Co.,	185	186	152	180	196	164	160
Bagdad,	Bagdad Coal Company,	283	286	267	241	280	279	269
Baltimore and Ohio,	W. P. Stillwagon,					365	365	365
Beaver,	Lee & Patterson,	228	240	150	230	256	267	264
Barkley Nos. 1, 2, 3 and 4,	Towanda Coal Company,	287	249	250	228	211		
Beechtree Nos. 1 and 2,	Rochester and Pittsburg Iron and Coal Co.,	256	300	200	223	287	247	232
Blaine's Run,	J. M. Elliott,	200	191					
Ben's Creek,	L. H. Smith & Co.,	275	220	330	224	240	240	200
Bedford,	Bedford Coal and Iron Company,					95		
Bennington slope,	Blair Iron and Coal Company,	312	287	204	200	300	302	270
Benedict,	Reed Bros.,	230	90			200	206	200
Brown,	Wm. Sweet and Brown,	218	225	187				
Belle-Vernon,	H. K. Myers,					26	240	150
Bellevue,	Bellevue Coal Company,						102	
Blackburn,	Foster, Clarke & Co.,							
Bellwood,	Munhall Bros.,	145	123	110	90	165		
Beck's Run,	H. B. Hays & Bro.,	140	71	145	74	84		
Beadling,	Beadling Bro.,	250	205	222	173	210	198	245
Buena Vista,	South West Coal Company,	128	103	175				
Blythe No. 1,	Blythe Coal Company,					40		
Bridgeville,	A. J. Shuttle,	249	218	145	188	283	174	230
Black Diamond,	W. J. Jackson,	300	275	80	50	196		200
Buckeye,	J. C. Cochran estate,	266	269	237	290	291	212	283
Bessemer,	McClure & Co.,	161				175		139
Black Diamond,	W. H. Brown & Sons,	255	178	178	112		170	105
Banner,	J. M. Risher,	191	207	175	170	269	158	152
Beale,							40	
Brier Hill,	Patterson & Sautters,	255	230	260	261			265
Bowman,	Eli Leonard,	52			182		200	
Beaumont,								225
Beaver,	Beaver Coal and Coke Company,							110
Beaver Falls,	James Clayton,					240	246	268
Baker,	Scott & Co.,	185	203	160	165	246	193	220
Breckinridge,	Breckinridge Coal Co.,						280	301
Bethel,	Curtis' estate,	161	148					300
Berlin,	B. D. Morgan & Co.,	275	200	200	200		240	240
Bloomington No. 1,							142	196
Blairsville,	Jacob Grall,	300	300	300				

Days in Operation of Bituminous Collieries.—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Beech Grove	Beech Grove Coal Company	200	200	200				
Bower Hill	Bower Hill Imperial Coal Company	36	100	110	130		200	
Bellevue	Gumbert & Huey	176	132	178				
Baltic	Baltic Coal Company	191	219	254	170	251½	236½	201
Black Diamond	Thomas Taylor		75	200			110	200
Brier Ridge	S. M. Shipman & Co.						247	107
Boone	Stoner & Co.		130	225				160
Buffalo	Youghiogheny Coal Company		200		90			
Bessemer and Rising Sun	McClure & Co.		217	259	210	285	33	258
Blythe	Youghiogheny and Ashtabula Coal Company		130					
Buffalo	Buffalo Creek Coal Company		135	188	202		158	
Black Diamond	John Miller		264	161			75	
Beech Cliff	Imperial Coal Company	261	180	241	204	230	225	
Boyd	Edward Fisher		60	175	120	250	187	
Bryson	Passmore, Burns & Co.					87		
Butler			40					
Banning	Morgan, Moore, Bain Co.					165	218	237
Brown's Sons No. 2	W. H. Brown's Sons		158					
Beechmount	Beech Mount Coal Company		70	240	153	280	240	300
Bland	Frederick Bland			312	312	150	300	310
Bloomington No. 3							254	196
Buffalo	Haywood Coal Company			165			89	90
Bunola	O'Niel & Peterson			250			200	148
Boston No. 1	W. H. Brown's Sons			222	179	232	168	111
Boston No. 2				152	148	179	116	113
Bloomington No. 2							224	91
Brittanic	Reese, Mortimer & Co.			240		272	280	221
Beaver Run				216	175	106		
Bear Run	Blossburg Coal Company						252½	227½
Bessemer	H. Liveright			45	162		165	
Bunola	O'Niel & Peterson				173			
Brock	Brock Coal Company						250	218
Brier Hill	Patterson & Sauters				270	280	264	
Boone	Canonsburg Coal Company				206	197	198	
Black Diamond	Thomas Taylor				100	241	212	
Bloomington	Blooming Coal Company				206	154½	223	
Brown	Sweet & Brown				205	253	200	217
Bear Ridge	Bear Ridge Coal and Coke Company				252		260	200
Blackstone							250	260
Champion	Morgan & Dixon	180					43	
Clipper	Clipper Coal Company	47		191				138
Columbia No. 5	J. T. Jones	97	92	69			177	
Courtney	Courtney Coal Company		160	109	95		120	264
Cincinnati	J. S. Neal	175		112	61	200	160	127
Cliff	Harvey Hutchinson				53	100	207	
Camden	George Lysle & Sons	140	110	162	125			200
Castle Shannon	Castle Shannon Coal Company						300	280
Cresson	Cambria Company					254		

Chester	Moshannon Vein Company					60	213	264
Caldwell	Caldwell						40	150
Chester	Moshannon Vein Company						150	
Chalfant	F. S. Chalfant							250
Charlerol	Charlerol Coal Company							72
Cleveland	J. H. Somers Company							170
Continental No. 2	Sonman Coal Company					179		
Chess	Graham & Bell							
Coal Ridge	Gray & Bell	999						
Cornell & Werling	W. H. Brown's Sons	200	157					
Cherry	Morris McCune	140	182			263	276	247
Camp Hill	David M. Steene	240	250			175		
Cooks	J. V. H. Cooke	266	191			157		200
Clark	Clark, Lewis & Co.							
Clinton	Clinton Coal Company	220	191	142	218	232	239	259
Carver	Carver Coal Company	240	241	200	242	248	253	210
Chestnut Ridge	Filer, Westerman & Co.	207	190	230	246	240	255	198
Clayton	W. F. Clayton							
Chisholm	Mercer Mining and Manufacturing Company	90	116	178	99			
Church Hill	Church Hill Coal Company				95		240	250
Crescent	Lambirth Mining Company							263
Cameron	Cameron Coal Company				208			
Clermont	Buffalo Coal Company		210					
Coal Glen	Jefferson Coal Company	180	225	200	181	256	246	243
Coal Brook	J. R. Torrance & Co.	280	248	250	280	284	261	90
Cora	J. M. Newmyer & Son	279	233	213	278	281	261	98
Clarissa	James Cochran & Son	231	231		280	250	255	261
Connellsville	P. & C. Gas Coal Company	273	309	281	274			
Casselman	Casselman Coal Company	250	300	300	298		290	290
Cochran	James Cochran	200	159					
C. & E. L. Coal Company	C. & E. L. Coal Company	218	212	212	236	233	243	250
Carbon	E. P. Jenkins	230				283	181	115
Cushon	Cambria Iron Company	290	250	300	300	300	282	311
Conemaugh	do. do.	312	253	75				90
Cambria	Langdon & Co.	184	222	198		277	281	240
Camden	Geo. Lysle & Sons					205		
Coal Run	Coal Run Coal Company						200	
Castle Shannon	Castle Shannon Coal Company			275	250			
Cunard	T. E. Thropp						103	176
Chess	Gray & Bell							
Clark	Clark, Lynt & Co.							
Cato	Cato Mining Company							160
Cherry	Morris McCune			160	214			
Camp Hill	David Steen			208	275			
Champion	Dennithorne & Rowland							105
Cornell & Werling	W. H. Brown & Sons							
Creedmore shaft	Ohio and Pennsylvania Coal Company							75
Cambria	Clearfield Consolidated Coal Company				217			186
Coal Ridge	Gray & Bell							
Columbia Nos. 1 and 2	J. L. Mitchell & Co.	216	429	507	374	217		
Colorado	White & Jackman	240	235	207	173	285	275	266
Coaldale No. 3	Holt & Chipman	263	250	287	235	266	211	207
Coaldale No. 4	do. do.	272	257		58	216	179	
Coaldale No. 5	Berwind, White & Co.	268	247	286	224	275	230	190
Cataract	I. C. Helms	195	244	220		275	180	
Central	do.	197	203	248	225	252	149	120
Columbia No. 1	J. L. Mitchell					232	187	192

Days in Operation of Bituminous Collieries.—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Church Hill	McCullum & Co.					171		
Catsburg	Louis Staib	210	226	228	58	277	278	200
Catfish Run	Catfish Run Coal Company						60	275
Caledonia	T. J. Wood	170	110	165	150	265		170
Coal Bluff	M. and P. Coal Company	219	158	166	157	220	205	157
Cedar Hill	L. W Morgan	129						
Columbia No. 2	J. L. Mitchell					115		
Cranberry	Sharon Coal Company, Limited	100	235	218				
Caledonia	Caledonia Coal Company	97	147				200	
Cascade	Kaull & Hall	200	300	310	299	299	299	286
Clarion	N. W. Mining and Exchange Company	238	257		235	215	198	187
Clinton	B. F. Kiester & Company	260	194	51	202			
Cumberland	Cumberland Coal and Mining Company	95		200	274	240	225	216
Cumberland	H. and B. T. M. R. R. and Coal Company						208	263
Cooke	J. W. Cooke				250			
Chevington	do.	250	159	99	75	59	277	280
Castle Shannon	P. and C. S. R. R.	300						
Cataract	Berwind-White C. M. Company	195						263
Central	T. C. Heins	52	250	262	281	218		
Cuba	Edward Miller	187	213	195	144	145		
Cliff	J. M. Risher		201	145				100
Cedar Hill	Bradford, Leach & Co.		25			200		
Carondolet	E. C. Furlong & Son		120					
Clipper	Allenport Coal Company		181		228	238		
Champion	T. J. Wood		125	160	157	266	200	150
Co-operative	Co-operative Coal Company		150	416				
Columbia No. 3	Mitchell & Lazar		198	125		253	148	168
Climax	Climax Coal Company			124	208	200		
Calumet	Calumet Coke Company			92	276	259	208	252
Carbon	Carbon Coal Company			230	246			164
Clinton	H. C. Frick Coal Company			30				
Claridge	Claridge Gas Coal Company						56	257
Cupalo	H. C. Frick Coal Company			22				
Cymbria	Cymbria Coal Company							15
Columbus No. 1	Mitchell Coke and Coal Company			42	140			
Centre	Centre Coal and Coke Company			112				
Catharine	Blair Bros.			140	218	187		
Cherry Run	Cherry Run Coal Company				187	212	135	125
Cal. T. Hay	Cal. T. Hay				190			
C. & E. L. Grassy Run Mine	C. and E. L. Coal Company				191.50		243	167
Champion	John B Reed				148	162	90	222
Crescent	Lambirth Coal Mining Company				215	269	274	180
Cresson shaft	Cresson Coal and Coke Company				240		58	251
Cannelton	Morgan Coal Company						255	220
Dagus Nos. 1, 2 and 3	N. W. Mining and Exchange Company						211	203
Dixon Mine	H. C. Springer & Co.	171	181	200	251	250	200	140
Diamond	McClure & Co.	264	223	32	125	240	32	
Dysart No. 1	Canon Leahy	220	260	216	158	150	228	172

Dysart No. 2,	D. Laughman,	210	208	213	200	208	275	212
Delany,	Altoona Coal and Coke Company,	259	261	290	650	274	290	275
Dougherty,	Richland Coal Company,							287
Darr,	Osborn, Seger & Co.,						275	
Drane,	D. W. Holt,	142	208	135	172	258	235	182
Derby	F. Barnes & Bro.,	172	217	213	214	212	242	185
Decatur No. 1,	Decatur Coal Company,	108	160	215	235	277	196	206
Decatur No. 2,	do. do.					50	200	224
Duquesne,	J. B. Corey,	192	150	192	154	228	226	265
Donnelly Nos. 1, 2 and 3,	McClure & Co.,	250	220	246	264	282	207	287
Dagus Mines Nos. 1 to 25,	N. W. Mining and Exchange Company,	243	260	214	228	240		
Dexter,	J. R. Stauffer & Co.,	256	209	98	265	265	182	218
Duval,	E. P. Jenkins & Co.,	245	174	66	135			
Dilworth,	W. R. Dilworth,		95	176	225	240	198	250
Diamond,	Thos. Mitchell & Sons		225	264	237		260	199
Dunlo,	Dunlo Coal Company,							252
Deny,	Deny Coal and Coke Company,		75					
Diamond,	G. H. Haywood & Co.,		117			280		
Dravo,	Lake Shore Gas Coal Company,		171	175	145	218	186	216
Derry shaft,	Derry Coal and Coke Company,			310	300	274	301	268
Denmark,					250	210	280	253
Dean,	Cresson and Clearfield Coal and Coke Company				92	264	260	250
Davidson shaft,	H. C. Frick Coke Company,					271	188	243
Eclipse,	J. S. Neel,	190	170	135		220	250	230
Eclipse,	Jno. Carlin & Co.,			141	175		60	130
Enterprise,	Hartley & Marshall,	197				257		55
Ewing,	Ewing & Gordon,							
Essen,	Sanford & Co.,					137		
Enterprise,	Filer & Westerman,							
Eureka slope,	Danl. Eldridge,	181	223					250
Engle,	H. C. Frick Coke Company,		272	256	289			
Everett,	Everett Coal and Iron Company,	50						
Euclid,	Euclid Coal Company,	164	285	240	216	255	270	255
Enterprise,	Hartley & Marshall,	221	252	226	200		215	258
Essen,	Stanford & Co.,	208	183	146	128		197	216
Ewing & Gordon,	Ewing & Gordon,	140						
Eagle's Nest,	Green Oak Coal Company,							
Empire,	Empire Coal Company,	241	200	260	120	141		
Eureka No. 5,	Berwind, White & Co.,	197	260	282	245	230		
Excelsior No. 1,	Fisher, Miller & Co.,	160	255	191				
Eureka No. 5,	Berwind White & Co.,							181
Excelsior No. 2,	Fisher, Miller & Co.,	195	275					
Excelsior No. 3,	do. do.	180	245	211	125			
Elizabeth,	Elizabeth Coal Company,	271	160					
Eureka,	Stoner & Co.,	200	311	300	311	260	245	
Emma,	M. F. Overholt,	288	227	156	176	265	176	224
Etter,	John Etter,	280						
Enterprise,	do.	82				276		
Eldorado,	Eldorado Coal Company,	200	120	123	111	235	240	180
Eagle,	J. Gwin & Son,	200	250	250				250
Eureka No. 2,	Berwind, White C. M. Company,	209	251	266	258	251	261	251
Enterprise,	J. V. H. Cook,					280		
Elmira,	Maker & Baumgardner,					180		
Ella,	Ella Coal Company,						60	262
Edna,	C. and C. Coal Company,						174	
Export,								35
Elbon,	Noble Coal Company,							204

Days in Operation of Bituminous Collieries—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Elm Grove	W. T. Rainey							280
Ellora	East End Coal Company							15
East End	do. do.							143
Elenora	Rochester and Pittsburg Coal and Iron Co.					260	232	233
Eureka No. 5	Berwind-White Coal Mining Company	89	119	191	200			
Eureka No. 8	do. do.		109	251	224	235	266½	159
Eureka No. 9	do. do.						52	192
Eureka No. 6	do. do.	171	257	278	278		276½	
Eureka No. 7	do. do.						68½	250
Eureka No. 10	do. do.					100		
Eureka No. 10	do. do.						61	
Elizabeth No. 2	Kittanning Coal Company	19	260	219	220	240		
Eureka No. 11	Berwind-White Coal Mining Company							172
Enterprise	J. V. H. Cook & Son		61	156				
Eureka No. 12	Berwind-White Coal Mining Company							260
Enterprise	McClure & Co.		221	138	285			
Eureka No. 13	Berwind-White Coal Mining Company							106
Eckley	Eckley Coke Company, Limited		223					
Eureka No. 14	Berwind-White Coal Mining Company							221
Elizabeth No. 3	Elizabeth Coal Company		290	300	300	304		
Excelsior No. 4	H. C. Fisher		115	215	205	240	268½	165
Excelsior or Wampum	Wampum Run Coal Company				100	240	200	200
Eureka No. 16	Berwind-White Coal Mining Company							142
Enterprise	J. V. H. Cook & Son				70			
Eichelberger	Eichelberger & Sons				99	175		162
Electric	T. C. Helms & Co.				86	201½	256	85
Ebervale	Phebe Hughes				200	136	192	200
Fox	Thos. Fox					300		275
Eureka No. 17	Berwind-White Coal Mining Company							194
Fort Pitt	Fort Pitt Coal Company							
Federal Spring	W. J. Steen					180	170	
Fairmount No. 2	Fairmount Coal and Iron Company	159	216			240	274	276
Fairbanks	Saltsburg Coal Company	296	300	288	204	280	256	250
Fall Brook No. 1 and 2	Fall Brook Coal Company	300	290	227	229	235	273	265
Furnace	Charlotte Furnace Company		50					
Foundry	H. C. Frick Coke Company		272	128	209			
Frick	do. do.	272	275	281				
Franklin and Clinton	B. F. Keister & Co.	267	225	81	288	271		309
Flog Hill	Fairview Coal Company	170	195	150	235		262	268
Fairview	do. do.	170	195	150	248	232	264	268
Fayette	Fayette Coke and Furnace Company	294	254½	288	273		227	
Foster	Saltsburg Coal Company	293	294	260		292	302	256
Fisher	Reed Bros						120	194
Fox	Thos. Fox	305	300	300	175		300	
Federal Spring	W. J. Steen	180	200	200	150			
Fort Pitt	Fort Pitt Coal Company	90	215	163	188	203	149	180
Franklin Nos. 1 and 2	Kittanning Coal Company						218	
Fairmount No. 4	Fairmount Coal and Iron Company	75	143	47		290	250	230

Furnace	E. A. Humphries	237						
Ft. Hill	W. J. Rainey	270	279	285	295	290	300	200
Fairchance	Fairchance Furnace Company	307	241	307	280	295	294	308
Fenn	Griffith	300	300	250			300	
Franklin Nos. 1 and 2	Berwind-White Coal Mining Company	148	210	257	226	236	218	
Ferndale	John Morris	120	153	174	212	178	126	131
Fayette City	Sam'l O Hill, Attorney		36	204		293	287	251
Forest						20		
Fountain	E. C. Humphreys		187	165	281			
Federal	Federal Coal Company						240	244
Ferguson	Dunbar Furnace Company					264	284	295
First Pool Mong. Gas-Coal Co. No. 1			125		285	200	202	248
Fountain	Graner & Madill			100			45	
Fidelity	Fidelity Coal Company				60	160	207½	220
Fulton	Geo. Jones & Co.				27	132	50	20
Fulton	Liveright, McCoy & Co.						221	
Fawcett	Thos. Fawcett & Son				130	120		
Foster	Saltsburg Coal Company				70			
Greenfield	J. S. Neel			110	75	244	207	175
Gilmore	Heirs of John Gilmore			168	175			
Garfield	J. S. Neel	150		118	63	60		
Grampian	R. C. Fishburn & Co.							90
Green Springs	Thomas Fawcett							
Grant	Grant Coal Company					203		
Glendale	Gregg Bros.							
Glass-House	Wm. Bains							
Gomersall	Mahoning Valley Iron Company	233	205	228	260	260	245	210
Glen	J. R. Smith	313	304	312	317	313	313	313
Gaines Nos. 1 and 2	Gaines Coal and Coke Company	186	200		128			
Gautier	Cambria Iron Company	250						
Griffiths	Fen & Coover							
Glenmore	Glenmore Coal Co.					62		50
Gallitzin shaft	McCoy & Taylor	273	260	219	186	280	255	239
Great Bend	Great Bend Coal Company	174	240	391	462	201¼	223	246
Great Bend No. 3	do. do.						189	
Glen White	Glen White Coal Company	309	309	310	279	300	275	300
Great Bend No. 4	Great Bend Coal Company						214	290
Green Springs	Thos. Fawcett							
Ghem	Ghem Coal Company						132	263
Glendale	Gregg Bros.							
Glass-House	Glass-House Coal Company		180					
Glenshaw	Spencer & Co.		310			283	309	292
Grant	Grant Coal Company	222	227	135	141		218	182
Glenwood	Wm. Morris & Co.	233	541	375	471	180	219	250
Grass Flat No. 9	Clearfield Bituminous Coal Company				220	291		246
Gazzam No. 1	do. do.	243	229	159	186	268	276½	245
Gazzam No. 4	do. do.						245½	255
Greensburg No. 1	Greensburg Coal Company	275	235	300	254	267	254	165
Greensburg No. 2	do. do.							172
Graver	New York and Cleveland Coal Company	218						
Globe	Globe Coal Company	200	143	180	192	238	203	
Gilmore	Altmyer & Maltzberger	170	150					
Gosford	Gosford Coal and Mining Company	232	235	190	90	150	243½	129
Grace	W. J. Rainey	250	225	275	290	294	295	255
Glenwood	W. Morris & Co.					256	240	181
Glendale	J. Z. W. Cook	176	200					
Glen Fisher	Elk Coal and Coke Company						100	

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Days in Operation of Bituminous Collieries—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Glenshaw	Glenshaw Coal Company	278½		275	300			
Grass Flat No. 10	Clearfield Bituminous Coal Company	254						
Grass Flat No. 11	do. do.	258	230	249			301	
Glen Fisher	Standard Coal and Coke Company							200
Goss Run		170						
Gastonville	Pittsburg and Chicago Gas Coal Company		240	119	136	268	166	217
Great Bluff	Isaac Taylor		130	116	250	260	225	306
Grassy Run	Grassy Run Coal Company		175	150	147.50	112	195	183
Gwin	Gwin & Son						220	
Gurnee Nos. 1, 2 and 3	Gaines Coal Company					197	225	211½
Gallitzin slope	Mitchell & Layer		260	203	212	220	220	213
Glen Ritchey	Bloomington Coal Company			242				
Gmon	do. do.			120	167	200	200	100
Grindstone shaft	Redstone Oil, Coke and Coal Company						200	183
Germania	Turnbull & Foster				167		162	
Gassman or C. & I. No. 1	Cumberland and Summit Coal Company				140			
Gassman or C. & I. No. 2	do. do.				100			
Hicks	A. H. & A. G. Hicks						80	
Hilldale	Hilldale Coal Company	193	124	295	189	246		
Horner & Roberts	Horner & Roberts				76.50	216½		
Hays' Street Run	Hays' Estate					190	95	72
Hastings	W. J. Morgan							237
Harding shaft	C. B. Harding							
Hickory slope	Hazzard, Wood & Co.	215	217	156	145			
Hulmes	James Clayton	219						
Hill Farm	Dunbar Furnace Company	287	303	252	275	141		202
Hoblitzell	Baltimore and Cumberland Coal Company							
Hagen & Whyel	Hagan & Whyel							
Henry Clay	H. C. Frick Coke Company	229	275	193	289	265	198	263
Haw's shaft	A. J. Haws	312				240	313	306
Harvey O'Neil	O'Neil & Co.	200	200	220	201	246	201	148
Horner & Roberts No. 3	Horner & Roberts	175	106	165		121½		
Hays' Street Run	Hays' Estate		118	120				
Hastings' slope	Penn Coal Company	220	150	180	120	230	134	166
Hawks' Run	Jones & Mull	160	216	203				
Harrison	D. Lang & Co.							
Hampton	Hampton Coal Company	198	202	204	245	86	210	200
Hempfield	Hempfield Coal Company	313	240	313	252	252	264	216
Hecla	Hecla Coke Company, Limited	276		259½	265	268		274
Hecla Nos. 1 and 2	McClure & Co.	266				234	193	
Hazlet Nos. 1 and 2	do.	276	231	222	272	280	152	296
Hall	John W. Hall & Son	144						
Hardscrabble	Brady's Bend Mining Company	203	268	247	263	200		
Hamilton	Powers & Brown	181						
Hocking	Hocking Coal Company	130	104		221		263	243
Home	Stauffer & Wiley	266	238	103	264	278		
Horse Shoe	Altoona Coal Company	270	271	295	239	270	147	88
Hays' Street Nos. 2 and 3	H. C. Bergman, Trustee	155			105			

Hamson		90						
Hamilton	Cochran & Hamilton							
Huntingdon	Ed. Gould		120	260	240			
Hudson	R. B. Wigton & Son		70	256	165	210	170	200
Hastings	Chess Creek Coal and Coke Company		120					
Harriet Lane	Lyeth & Langden Coal Company			92	214	255	233	
Hill	Hill Coal Company			124				
Hites	McFetridge Bros.				25			
Hegarty	Coal Run Coal Company					105	261	265
Highland	John Walton					92		
Helvetia	A. Islein					110	252	196
Horner & Roberts No. 4	Horner & Roberts						265	213½
Hackett's	Hackett Coal and Coke Company							120
Henrietta	Henrietta Coal Mining Company							200
Hicks								60
Henderson	DeLong & Gould							180
Hallville								164
Hazel Dell	Kauli & Hall						90	250
Ingleside	Ingleside Coal Company				206	277		284
Ivil	James Jones	185	240	250	225	150	257	210
Idlewood	Phœnix Gas and Coal Company							220
Isabella	Isabella Furnace Company	300	300	106	200	300	300	250
Irvona No. 1	Irvona Coal Company	240	306	292	204	177	240	225
Idlewood	Phœnix Coal Company		95					
Imperial	Imperial Coal Company							
International	International Coal and Mining Company	250		95				
Idlewood	Steward, Lewis & Dickson	140		105		175	180	250
Irvona No. 2	Irvona Coal Company		54	70	75	86	240	235
International	International Coal and Mining Company		110					
Indiana branch					90			
Instanter	Buffalo Coal Company					276	295	287
Jones	Thos. Jones							
Juniata	Juniata Coke Company						256	269
Jones & Laughlin	Jones & Laughlin							
J. C. Stineman	J. C. Martin					251	280	257
Jumbo	T. B. Robbins						252	255
Jackson	Jackson Coal Company		100			87	140	292
Jones	George Jones & Co.	88	42	57				
Jamison								90
James O'Neil	James O'Neil							
Jumbo	Jumbo Coal and Coke Company	217	240	350		254		
Jackson	Jackson Mines Company	300	235	300	150	240	257	150
Jefferson	Foster, Clark & Wood		152	146	80	156	156	70
Junction	Joseph Laughrey & Co.				258	230		
Jumbo	Jumbo Coal and Coke Company				202			
Jefferson	Adams & Co.						125	129
Knob	Knob Coal Company	153	136	190	176	238	220	244
Keystone	Keystone Coal Company	200	228	250	240	240		76
Kyle Farm	Bliss & Marshall	278	170	175	240	264	196	251
Keightley	Fountainhill Mining Company							
Karthaus	Berwind, White & Co.	200	215	180		275	280	250
Keystone Nos. 1 and 2	W. H. Brown & Sons	206	184					
Keystone	Keystone Coal and Coke Company	104	115	230	210			234
Keister	Union Coal and Coke Company	269	249	265	252	240	257	184
Kittanning	Kittanning Iron Company, Limited	295	280	58		209	180	
Kittanning		120						
Keightley	H. C. Cord	60						

Days in Operation of Bituminous Collieries—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890	1891.	1892
Kyler	Kyler Coal and Coke Company	276	261	176	175	258	215	179
Karns	W. C. Mobley & Co		230	174	247	268	250	
Keystone	Pittsburg and Fairport Coal and Coke Co		56	119		268	253	
Keystone Nos. 1 and 2	Keystone Coal Company		160					
Kentuck	Fryburger & Butterworth			3	140	121¼	230	152
Kettle Creek	Kettle Creek Coal Company				221	255	206	208
Kelly's mine	Kelly Bros.				256			
Knox Run	C. Bit. Coal Company						24	226
Kearney	Joseph E. Thropp				33	283	150	140
Kecks	Woodland Coal Company					89	90	
Lower Walton	Joseph Walton & Co	138	117	150	80			
Loudon	Fall Creek Coal Company					232	201	190
Lovedale	John A. Wood & Sons				50	160	162	80
Legler's	Henry Floersheim							
Laurel Hill	W. P. Rend						265	
Long Run	Northwestern Coal and Iron Company							
Leechburg Nos. 2 and 3	Leechburg Coal Company					268	280	240
Leechburg No. 4	do. do.							314
Lackawannock	Pierce Coal Company, Limited	133½	165	185	115	190	151	103
Long Valley	Long Valley Coal Company	152	220	193	197	283	228	206
Leisenring No. 1	Connellsville Coal and Iron Company	264	158½	275	253	157	193	252
Leisenring No. 2	do. do.	256	232½	260	273	218	120	230
Leisenring No. 3								256
Lemont	Robert Hogsett	275	275	275	304	276	207	277
Latrobe Coal Works	Latrobe Coal Company	288	246	285	284	306	284	303
Lovedale	John A. Wood & Sons	173	175	154				
Laurel Hill	W. P. Rend	300	300	310	400	275	275	250
Lake Shore	Lake Shore Gas-Coal Company							
Loraine	Reakirt Bros.	180	263	248	236	210	119	192
Leland	Tonis, Laylor & Williams							134
Logan Ridge	H. J. Smith & Co.	148	158					
Logan	H. Laveright & Co.	215	284	250	257	261	237	197
Laurel Run Nos. 1 and 2	Nuttall, Bacon & Co.							
Lippincott	Hostetter Coke Company					143	198	143
Lancashire Nos. 1 and 2	T. Barnes & Bros.							
Larimer	Westmoreland Coal Company	237	254½	258	261	144		204½
Larimer Coke Works	Carnegie Bros. & Co., Limited	206	300					
Little Pittsburgh	R. E. Schrentz & Co.	235	240					
Little Redstone	James Rutherford	197	150	200			153	182
Little Alps	James Underwood	108					65	150
Leechburg No. 2	Leechburg Coal and Coke Company	180	256					
Leechburg No. 3	do. do.	271	301	275	272			
Leith	Chicago and Connellsville Coke Company	285	204	278	273	267	209	258
Lemont No. 2	Robert Hogsett					59	208	273
Loyalhanna shaft	Loyalhanna Coal and Coke Company	175	215	245	240	250	282	235
Leesdale	Gregg Bros.	216	219	192	148	140	198	215
Laurel Run No. 1	Nuttall, Bacon & Co	134	190			220	256	290
Laurel Run No. 2	do. do.	156		220	200			275

Lancashire No. 1,	do. do.	168	238	209	184	218	219	207
Lancashire No. 2,	T. Barns & Bro.,	142	198	150	242	235	185	211
Lancashire No. 3,	do.						150	
Luger's slope,	A. B. & G. W. Luger,	285						
Lemon,	Blair Iron and Coal Company,		308	285	240	300	201	
Lockport,	Lockport Coal and Coke Company,		20		238	281	281	58
Leechburg No. 4,	Leechburg Coal and Coke Company,			309	154	300	311	
Leisenring No. 3,	Connellsville Coke and Iron Company,			98	259	269	177	
Large,	R. B. Large,							137
Lilly,	Lilly Coal Company,			70	183		226	202
Leatherwood,	Leatherwood Coal Company,			100				
Lucas Hill,	L. V. Coal Company,				68	180	117	126
Larimer,	Larimer Coke Works,				175		285	
Lender slope,	Lender & Co.,						200	185
Langlead,	Langlead,						156	308
Lewis,	Lewis & Co.,					166		
Linn,	Hanna Bros.,				250		301	185
Milesville,	Robert Jenkins,				171	248	203	
Midway,	George Crawford,				200			
J. C. Martin No. 1,	J. C. Martin,					258	230	200
McConnell,	Joseph McConnell,							
Mansfield Nos. 1 and 3,	Mansfield Coal and Coke Company,	156	192	142				
Mansfield No. 2,	do. do.					240	202	231
Montour's,	Imperial Coal Company,	169	225	240	213	250	197	205
Mansfield,	J. F. Mansfield,							
Mineral Ridge Nos. 1 and 2,	Mineral Ridge Coal Company,						250	300
Morris Run Nos. 1, 2 and 3,	Morris Run Coal Mining Company,	296	275	192	202	192½	219¾	212½
Morgan,	H. C. Frick Coke Company,			278	289	245	224	63
Morrell,	Cambria Iron Company,	278	250	291	223	288	216	311
Millwood,	Millwood Coal Company,	300	264	311	140	250	200	189
Monastery,	H. C. Frick & Co.,	297	241	197	283	285	191	255
M. Saxman,	M. Saxman & Co.,	300	222	262	301	306	286	287
Munson's,	Munson Coal Company,					130	204	
Martindale,	J. C. Martin & Co.,	175	230	230				
Monroe slope,	Gallitzin Coal Company,	210						
Mentzer,	E. W. Mentzer,							
Minersville,	R. H. Powell & Sons,							
Maher,	Roda Maher,	250	240	100		279	295	293
Milesville,	Robert Jenkins,	189	90	158				211
Mansfield No. 2,	Mansfield Coal and Coke Company,	226	192	204½	200			
Mansfield No. 3,	do. do.							
Madison,	Madison Gas Coal Company,					87		293¾
McConnell,	Joseph McConnell,		180					
Morrisdale Nos. 8, 10, 11, 12, 13, 14 and 15,	R. B. Wigton & Sons,	230	218	219	125	232	147	175
Moshannon,	Moshannon Coal Company,	66	157	242	241	238		
Mammoth,	J. W. Moore,	295	217	239	251	267	190	256
Manor shaft,	N. Y. and Westmoreland Gas Coal & Coke Co.,	74	210	125	133			
Mullin,	Mullin, Stryker & Co.,	275	231	150	225	282	210	168
Manor Valley,	Manor Valley Gas Coal Company,	244	260	260				
Mutual Nos. 1 and 2,	Mutual M. and M. Company,	308	225	281	235	260	220	220
M. Graver,	New York and Cleveland Gas Coal Company,	20	80					
Mayfield,	McClure & Company,	250	220	248	260	282	207	182
Merchant,	David Bowdler,	102	150					72
Midway,	Midway Brook Coal Company,	168		200		230	193	75
Mineral Ridge,	Mineral Coal Company,	201	193	249	192	208		
Mahoning,	Cambria Iron Company,	205	229	296	185	15	218	150
Moshannon	Felix, Toole & Co.,	108	250	261	146			

Days in Operation of Bituminous Collieries—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Mount Equity	Riddlesburg Coal Company	230	301	296				309
Mineral Point		230				299	300	
Maconville		150						
Mapleton	H. Liveright	156	249	136	145	243	176	161
Molsberger	G. Molsberger					246		
Mountaindale	Bear Ridge Coal and Coke Company					253		
Manown	Youghiogheny						294	246
Max Frick	Max Frick						80	290
Mabel	Thomas Blythe & Co.						119	267
Mongah	W. H. Brown							290
Mahoning	Isaac Taylor							159
Moreland	W. J. Rainey							300
Mineral Point	Mineral Point Coal Company							222
Moon Run	Moon Run Coal Company							240
Mitchell						100	309	300
Mt. Vernon	C. Cons. Coal Company	90	116		224	125		
Mt. Braddock	Robert Hogsett		150	275	295	300	275	285
Mt. Vernon No. 3	C. C. Coal Company		140	250	162	238		
Miller	Miller & Co.		121	150				
Moredale	E. P. Jenkins		150	138	160	110		
Mt. Vernon No. 1	Clearfield Cons. Coal Company		40	231	40	140	160	
Mt. Vernon No. 5	do. do.		230	135	223	231	270	195
Mt. Vernon No. 6	do. do.					56	164	199
Mansfield and Erie				124	141	161	200	217
Morgan	H. Liveright			267	210	276	29	150
Montana	J. Swires & Co.			61	180	216	225	197
Monarch	Monarch Coal Company				200	259	175	150
Mead Run	N. W. M. & E. Co.				43	226	220	196
Mt. Equity	Kemble Iron Company				182	305	191	
Mines A. and B.	Centre Coal Company						150	
Mountain	Mountain Branch Coal Company				65			
Moravian	C. B. Coal Company							226
New Catsburg	Louis Stalb							
New Eagle	Campbell & Co.							
New Coal Bluff	Peter's Creek and Mong. Gas Coal Company							
New Hamilton						142	110	151
National	National Coal Company					303	225	
New Castle	J. B. Read					229		
New Virginia	Virginia Coal Company				155			
Nelly	Brown & Cochran	273	231	262	286	275	250	250
National	National Coal Company	209	209	286	185	271	262	233
North Side	Westmoreland Coal Company	45						
No. 1 A and B shafts	do. do.	260	280	271	285	295	256	312
Nos. 2 and 3	do. do.	269	240	244	280	299	217	311
No. 4	do. do.	267	240	271	242	297	217	310
National No. 1	Philadelphia Coal and Coke Company							253
New Catfish	Pittsburg C. and M. Company	144	80	242				
National No. 2	Philadelphia Coal and Coke Company							66

New Virginia	Perkins & Co.	180	154	123		190		
Neshannock	Peroch & Gilson	150						
Natrona	Pennsylvania Salt Manufacturing Company	303	202	300	293	306	306	300
Nickel Plate	J. D. Sautter		280	182		265		236
No. 3 drift and shaft	S. W. Coal and Coke Company					285		
National	Whitmer Coal and Coke Company		170	183	235	125	175	
Nixon	Chartiers Valley Coal Company		200	200	136	186	171	203
New Hampshire	Whitehead & Co.			95				
Nottingham	Henry Floresheim				77	273	254	
Nickel Plate	J. D. Sauters				207		237	
Old Eagle	W. H. Brown's Sons					241½	171	
Ormsby & Bausman	Keeling Coal Company							
Oak Ridge	Oak Ridge Coal Company					191	258	229
Oak Ridge Nos. 1 and 2	Oak Ridge Mining Company	184	207					
Ormsby slope	L. M. Ormsby & Co.	237½	212	141	209	156	255	
Ormsby shaft	Ormsby Coal Company, Limited	214	184	138	137			
Ocean No. 1	Wm. Sweet	224	280	315	245	260	260	202
Ocean No. 2	do.					62	244½	243
Old Eagle	W. H. Brown & Sons	218	163	155				160
Oliphant	Frick Coke Company					256	185	245
Oliver	Oliver Coke and Furnace Company							300
Oneida						235		
Ormsby	Birmingham Coal Company	192	250	200	300	200	200	279
Oak Ridge	Oak Ridge Coal Company	250	250	225	250	261	256	170
Ocean No. 2	Youghiogheny Coal Company	170	248	230	250	241	251	300
Ocean No. 3	do. do.							
Ocean No. 4	do. do.	117	155	97	93	174	160	87
Ocean No. 1	Yough River Coal Company	208	250	258	227	195	246	201
Oak Hill No. 4	New York and Cleveland Gas Coal Company	224	168	256	223.50	75½	225	265
O. I. C.						208	190	200
Osceola	Osceola Coal Company	216	240	216	100	200	202	180
Ocean	G. E. Vogele	305	305		290		289	306
Oakland	Samuel Haggerty	200	250		100	96½	180	122
Old Moshannon		45						
Ocean No. 1	Berwind White Coal Mining Company	177	247	223	238	260	240	200
Ocean No. 2	do. do.	154	214	224	226	261	240	200
Ocean No. 3	do. do.	163	128	207	174		156	
Ohio and Pennsylvania	Ohio and Pennsylvania Coal Company		300	200				
O'Shanter	O'Shanter Coal Company		182	222	180	232	240	225
Oak Ridge	Oak Ridge Mining Company			189	225	251		265
Old Bower Hill	A. J. Shulte			153	173	273	175	45
Ocean No. 5	Youghiogheny River Coal Company			190	160	260	264	270
Oak Ridge	James Campbell				140		115	
Pine Run Nos. 1 and 2	Jno. O'Niel							
Patton	F. G. Patton							156
Penny	David H. Lynch							
Primrose	T. B. Robbins	240	165	300	300	258	246	191
Powers								
Pioneer	Haselton, Jacobs & Co.							
Pardoe	Mercer Mining and Manufacturing Company	150	262	280	245	268	255	132
Pleasant Hill	C. B. Coal and Coke Company							189
Pearson	Newcastle Railroad and Mining Company							
Pandora							100	237
Pittsburg and Kiskiminetas	Pittsburg and Kiskiminetas Coal Company	284	291	288	253			
Puritan shaft	Lambert, Scott & Co.						75	242
Pine Run	Stevenson & Mitchell	193	241	222				
Painter	McClure & Co.	264	223	266	275	280	226	283

Days in Operation of Bituminous Collieries—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Percy	Percy Mining Company	264	222	188	239	268	282	
Porter	Dennison, Porter & Co.	273	195	170	151	245	192	184
Portage	Berwind-White Company						212	
Pine Run No. 1	Jno. O'Neil & Co.							
Peter s Creek	Peter's Coal Company							
Pioneer	Youngstown and Chicago Coal Company							
Penn Manor						244	139	104
Penny	David Lynch							
Phœnix	J. R. Orvis & Co.						153	301
Penn	Reakirt Bros.	84				287	185	160
Plum Creek	New York and Cleveland Gas Coal Company	282	166	208½	272	288	270¼	269½
Port Royal	Port Royal Coal and Coke Company	159	200	278½	234	249	288	288
Penn Gas Coal Run	Penn Gas Coal Company	31	250	215	209	217	240¼	230
Painter	Lambert, Scott & Co.					212		
Penn Gas No. 1	Penn Gas Coal Company	181	250½	272	233	185	246	231¾
Penn Gas No. 2	do. do.	172	256	256	225	171	244¾	233½
Penn Gas No. 4	do. do.	166	230	252½	206	83	120½	203
Port Royal	Port Royal Coal and Coke Company	159	200	241	194	256¼	288	246
Penn	Penn Coal Company, Limited	210	222	217½	238	253	254	153
Pennsville	A. H. Sherrick	225	186	196	271	280		316
Plumer	Pittsburg and Connellsville Gas Coal and Coke Company	273			274	149		
Plummer	H. C. Frick & Co.							140
Parrish	Dunbar Furnace Company	175	244	168	245			
Prospect	R. H. Powell & Son	266	240	248	136	200		
Pine Run Nos. 1 and 2	James Lynn & Co.	191	46					
Pacific	Lake Erie Gas Coal Company	121	231	190	165	215	243	276
Pioneer	Standard Coal Company	37					142	214
Penny	Penny Coal Company	160	140	80		80	80	
Pacific No. 1	Berwind-White Coal Mining Company	174	261	269	291	254	249	208
Pacific No. 2	do. do.	178	253	311	295			
Pardee	Duncan, Lingle & Co.	222	250	332	425			
Philadelphia		89						
Paul	W. J. Rayney		50	285	290	290	300	300
Powers Nos. 2 and 3	Chartiers Block Coal Company		200	270	232.50	223	186	203
Pine Run				140				206
Pleasant Valley	Bell, Lewis and Yates Coal Mining Company				270	225	213	60
Pardee No. 1	G. J. Magee					264	156	262
Pine Hill	Pine Hill and Cumberland Coal Company				200			
Pardee No. 2	G. J. Magee					269	234	247
Pine Creek	Robbins Coal and Coke Company				300	295	232	214
Pardee No. 3	G. J. Magee					257	237	
Pluton	G. M. H. Good				59			
Queen No. 1	Queen Coal Company							200
Queen No. 2								150
Rankin	Henry Rebka							
Robbins	Wm. Robbins & Co.				65.50	125	178	
Rock Run	W. J. Snodgrass & Co.				114	235		

Risher	J. D. Risher							
Rochester Mine	Bell, Lewis & Yates	175	212	232	280	240	199	280
Rist	H. C. Frick Coke Company	270	273	278	289	265	187	265
Rock Point	Rock Point Coal Company						131	311
Rolling Mill	Cambria Iron Company	300					298	208
Ridge View	D. C. George & Co.	278	200	65				
Risher	J. D. Risher							
Robbins	Wm. Robbins & Co.	135	146	115½		126		195
Rock Run	Wm. Snodgrass & Co.	185	130	140			115	114
Rankin	John Perry & Co.	12		50				
Reading	H. Liveright & Co.	172	238	268	259	160	51	216
Rothrock	R. B. Wigton & Sons	280	247	256	266	195	161	189
Republic	Republic Coal Company	146	240	100	112	86		
Rostraver	Wm. Schrader	130						100
Riverview	Riverview C. and M. Company	136	154	254	270	266	208	
Red Bank	Alex. Reynold's Sons	74	240	190	141	214		
Rimerton	Murray & Butler					225	204	180
Richland No. 1	Morrison & Stevens					169	205	108
Rocky Ridge	Sleaman					160		
Ridgway Bishop	Ridgway Bishop Coal Company							84
Redstone	Redstone Coke Company, Limited	302	235	280	288	271	192	260
Rainbow	Rainbow Coal and Coke Company	315	310	280	260	225	275	250
Rolling Mill	Wm. H. Everson & Co.	274						
Robertsdale	Rockhill Iron and Coal Company	217	264	246	258	297	254	268
Rinehart	F. R. Rinehart		70					
Rubus	Cresson and Clearfield Coal and Coke Co.		125					
Red Run	Red Run Coal Company							252
Rubino	Cresson and Clearfield Coal and Coke Co.			290	285	303	250	
Redstone shaft	Redstone Oil Company					216		
Ramey	Thomas Barnes			40	204	216	158	
Retort A No. 1				262	215	278	250	
Summer No. 1	Lukens, Haupt & Co.							200
Stockdale	Venture Coal Company				40			
Stones	Wm. Stone's heirs				209	190		
Star	Menedick					250		
Summer Hill	Frank Armstrong					300		
Shupe & Co.	Shupe & Co.							
Smith	Smith & Co.					270	200	300
State Line	State Line Co.	254½	243					
Stoneboro Nos. 2 and 3	Mercer Coal and Iron Company							
Spears	Pine Grove Coal Company	180	220	200	250	240	208	175
Star	Northwestern Coal and Iron Company	147	209	241	264	285	259	273
Sligo Branch	Craig & S. Coon	200						
St. Mary's Nos. 1, 2 and 3	St. Mary's Coal Company					503	308	300
St. Mary's No. 5	do. do.							300
Summit Nos. 1 and 2	H. C. Frick Coke Company	270	274	282		273	223	253
Sterling Nos. 1, 2, 3 and Jimtown	J. M. Schoonmaker	285	237	280	584		278	245
Snow Shoe	Kelly Bros.					241	230	
Stewart Iron Company	Stewart Iron Company	243	265	260	194	296	210	285
Smith	Smith & Co.	280	300	300		68	290	225
Strickler	J. A. Strickler & Co.							100
St. Clair	M. Preston & Co.	288	200	140	200	254	220	220
Spartan	Samuel Haggerty							
Smittle	Smittle & Co.	270	249	240				
Stineman	J. C. Stineman		301	290	216			
South Fork	George B. Stineman	210	125	169	161	194	258	209
Sonman No. 1	W. H. Piper & Co.	250	250	240	288	250	240	200

Days in Operation of Bituminous Collieries—Continued.

NAME OF COLLIERY.	Name of Operator.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Sonman No. 2	W. H. Piper & Co.	230	250	250	207	230	267	290
Standard	Standard Coal Company	300	240	250	260	250	147	202
Summit	Summit Coal Company						313	286
Stones	Wm. Stone & Co.	216	170	56			148	
Summer Hill	Frank Armstrong	300	257	49	245		215	228
Smythe	Smythe, Powers & Co.							
Star	Francis Mankedick		220	230			190	185
Stirling Nos. 1 and 2	R. H. Powell & Co.	239	476	558	370	280	256	251
Stirling colliery No. 2	Berwind, White & Co.	239				153	219	300
Sugar Camp Nos. 1, 2 and 3	Lykens Valley Coal Company							
Summerville No. 5	Summerville and Buchannan					83	208	
Summerville	J. L. Summerville & Co.		274	130		272	276	195
Stirling No. 4	Stirling Coal Company					169		202
Shaner	Shaner Gas Coal Company, Limited	240	172		190	185	142	182½
Stirling No. 10	Sterling Coal Company					220	270	245
Sandy Lick	Bell, Lewis & Yates					190	130	
South Side	Westmoreland Coal Company	194	254	224	200.50	126	269	33½
Smithton Nos. 1 and 2	Waverly Coal and Coke Company	282	250	240	237	218	274	236
Standard Nos. 1 and 2	H. C. Frick Coal and Coke Company	260	252	280	275	248	193	258
Spring Hill	Alex. Dempster	312	270	260	240	313	301	306
Sandy Creek Nos. 1 and 2	New York and Cleveland Gas Coal Company	167	190	194	254	263	259½	279½
Stony Hill	Stony Hill Coal Company	176			185	239	223	
Snow Hill	Alps Coal Company	266	199	191	211	270	123	164
Stoneboro No. 2	Mercer Coal and Iron Company	259½	235	211	233	271	268½	211
Stoneboro No. 3	do. do.	245½	194	206	221	253	257½	195
St. Mary's Nos. 1, 2 and 3	St. Mary's Coal Company	200	310	300	297			
Salisbury	G. W. Williams	175						
Stirling No. 6	Sterling Coal Company					192	74	144
Statler	E. Statler	150	290	150	150			
Stirling Nos. 8 and 9	Sterling Coal Company						269	280
St Charles	J. C. Stineman	282						
Sonman shaft	Hughes & Shoemaker	230	240	250	240	263	240	252
Street Run	J. D. Risher	115	130	140				
Sanford No. 2	Sanford & Co.	140	168	124	159.50	202		
Snowden	Pittsburg and Chicago Gas Coal Company	140	166	159	249	365		300
Sugar Camp No. 1	Lehigh Valley Coal Company	161	239			246		129½
Sugar Camp No. 3	do. do.	186	200			246		129½
Sugar Camp No. 8	do do.	139	301					
Summerville Nos. 1 and 2	Berwind-White Coal Mining Company	197						194
Sobeiski Nos. 1 and 2		200	150	140	156			
Stockdale	Cromby & Skillen		112	78		190	230	156
Standard	Standard Coal Company						210	212
Stony Hill	John M. Dixon		200	200				141
Soldier Run Nos. 1 and 2	Bell, Lewis & Yates Coal Mining Company		208	286	382			
Shawmut	Shawmut Coal Company					258	215	209
Sugar Camp No. 4	Lehigh Valley Coal Company		30					
Sharon								249

Springfield			200						
Sarah	Douglas Coal Company								33
Schuylkill	Schuylkill Coal Company			171					
Sugar Camp Nos. 1, 2, 3 and 11	Lehigh Valley Coal Company			279				223	
Streets' Run	Harrison Gas Coal Company							48	168
Sugar Camp Nos. 4 and 5	Lehigh Valley Coal Company			241					
Stewart	Beech Creek Coal and Coke Company			60					
Snow Shoe mines	Kelly Bros.								230
Spring Hill				151	75				
Smocks	J. D. Boyd & Co.					258	202		251
Shoff				111	118	185	278		213
Shenango	H. K. Wick & Co.				155	222	264		147
Sheppler	Stone & Nimmo								172
Smith	Robert Smith				275				
Sprague	Bell, Lewis & Yates				289	261	224		249
Stirling No. 7	Livingstone Coal Company				144	275	264		
Stirling No. 3	Stirling Coal Company						86		
Sugar Camp No. 1	Lehigh Valley Coal Company				156				
Stirling No. 4	Stirling Coal Company					121			
Sugar Camp No. 2	Lehigh Valley Coal Company				236				
Sugar Camp No. 3	do. do.				63				
Snider	John Snider, Sr.				212	117	233		215
Scottdale I. & S. Co						58	260		290
Southwest	Youghiogheny River Coal Company				255	120	268		50
Shaw's Grassy Run	Cumberland and Elk Lick Coal Company					233			
Spring Grove	Brown & Cochran						120		
Superior Nos. 1 and 2	McCreary Coke Company					287	302		250
Staffordshire	Youghiogheny River Coal Company				65	140	220		240
Sandy Run							100		
Stirling No. 5	Stirling Coal Company				200	232			
Turners	J. L. Turner					305			300
Tip-Top	H. C. Frick Coke Company	265	275	220	203	262			
Tyrone and Washington	Laughlin & Co.								310
Trotter	H. C. Frick Coke Company	270	269	282	280	242	189		266
Turner	J. M. Turner	307	310	301		200	310		
Thompson's Run	Thompson's Run Coal Company								60
Tom's Run	Hooper, Spees & Co.								
Tunnel Mines No. 1	Clearfield Bituminous Coal Company	255	188	240	246	77	244		
Tunnel Mines No. 2	do. do. do.					287	54		
Tremont	John A. Wood & Sons	200	180	112	180		226		125
Turners	Central Coal Company	184			270		255		200
Tannerdale	St. Mary's Coal Company	200	310	300	208	305	89		
Tunnel	J. W. Cook						75		
Tyrone	Laughlin & Co., Limited	293	309	172	164	305	251		
Tub Mill Run	Fairview Coal Company	170	195	187	212	215	235		268
Thomas Mine	Thomas & Smith	160	238	220	255	293			304
Tipton	J. M. Turner	125	115	262	85	252	272		238
Tyler	do.				240				
Troy	R. B. Wigton & Son				131	230	260		175
Trout Run							116		137
Upper Walton	Joseph Walton & Co.	246	199	230	90				
Union Coal and Coke Mine	Union Coal and Coke Company								
Unlondale	J. M. Reid	221	198	86	178	255	207		280
United	United Coal and Coke Company	275	227	270	280	252	199		184
No. 2	do. do.								194
Union	McClure & Co.	279	210	247	267	281	309		283
Umpire	Snowden & Simpson	163	148	180	217	245			256

Days in Operation of Bituminous Collieries—Continued.

NAME OF COLLIERY.	Name of Colliery.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Union	J. D. Boyd & Co.	270	285	260	228			
Urey No. 1							130	146
Union Valley	Henry Floresheim		233	238	284	267		
Urey No. 2							175	147
Venture	Gray & Bell					216	209	231
Venetia	David M. Anderson	300						
Valley	H. C. Coke Company	267	271	279	276	264		265
Vigilant	California Coal Company							200
Venture	Gray & Bell	151	124	213	146			
Victor Nos. 1, 2 and 3	Victor Coal Company							
Vesta No. 2	Vesta Coal Company							225
Vulcan	R. B. Wigton & Sons	200	219	216	171	250		103
Vesta No. 3	Vesta Coal Company							135
Victor No. 1	Victor Coal Company	177	186	160	193	182	220	215
Victor No. 2	do. do.	75	165	239	175	232	100	
Victor No. 3	do. do.	86	225	183		172	161	142
Victor No. 6	do. do.				83	45		
Vanscoyoe	John Gevin				120	200		
Vanormer	Walfenden & Tait					133	146	
Wood's Run	W. H. Gregg & Co.				40			
Winona	Winona Coal Company							
West Elizabeth	O'Neil & Co.							
Walton	Joseph Walton & Co.					231	62	183
West Newton shaft	West Newton Coal Company	174	225	250	188	250	250	
Willow Grove	T. B. Robbins							
Williams	W. J. Williams							250
West Eureka No. 5	Berwind-White Coal Company					262	241	220
Waynesburg shaft	Sadler, King & King							
West Eureka No. 4							210	178
Wheeler	Sharon Coal Company					287		
Western drift	W. C. Mobley & Co.	250						
Walston Nos. 1 and 2	Rochester and Pittsburg Coal Iron Company	280	313	270	270	245	288	282
Walston No. 3	do. do. do.						289	282
White	H. C. Frick Coke Company	270	271	253	286	273		158
Wheeler	Cambria Iron Company	278	234	313	227			310
West Eureka No. 10	Berwind-White Coal Company					149	230	234
Webster No. 3	John C. Scott & Son	206	259	270	235	255	242	226
Woodvale	Johnstown Manufacturing Company	270					308	268
West Elizabeth	O'Neil & Co.		95	134				
Walton	Joseph Walton & Co.		116	200	60	150	175	170
Willow Grove	Willow Grove Coal Company	240	240		225.50	260	240	218
Watson shaft	Watson Bros.	163						234
Woolridge	A. E. Woolridge							183
Winona	Winona Coal Company	70	70					
Webster No. 1	Webster Coal Company, Limited	186						
Webster No. 2	Houtzdale Coal Company, Limited	52						
West Moshannon	Moshannon Coal Company	130						

Westmoreland shaft	Westmoreland Coal Company	132	253½	270	249.50	142	275		295
Westmoreland Car Shops	do.	132	254	300	305	102	308		295
West Overton	A. C. Overholt & Co.	267	217	169	274	263	217		290
Welfman	Welfman & Co.	305	298	298	290	290	289		305
Williamsport	Williamsport Coal Company	200	295	120		258	241		250
Washington	Thomas & Co.					240	196		239
Watrous shaft		50							
Webster No. 4	Buelah Coal Company, Limited	133	277	215	236	219½	244		169
Woods Run	T. J. Wood		60	98					
Washington	Thomas & Co.						240		187
Webster	Thomas Faucett & Son		170	138	180		250		
West Newton	West Newton Coal Company		225	250	250				
Wynn	Wynn Coke and Mining Co.		50	98	94	254			181
Wells Runs	Sonnenville & Co.		180	209					
West Eureka Nos. 1, 2 and 3				250	294	251	262		205
Woodland				165			278		243
Watson	Watson Coal Company				170	196½	224		
Whitney	Hostetter Coke Company				80		196		242
Wick or Sharon	H. K. Wick & Company				265	170	264		
Woodward					180	220			
Youngstown	Youngstown Coke Company		216	230	265	230			208
Youghiogheny slope	Youghiogheny Gas Coal Company		255	256	274	265	244		225
Yorkshire	T. Barnes & Co.			135	180				
Youghiogheny Valley	Youghiogheny & Allegheny Coal & Coke Co.			164½	136	85			
Youghiogheny	Ohio and Pennsylvania Coal Company				250	269	200		200
Yellow Run	Yellow Run Coal Company								50

ANTHRACITE MINE DISTRICTS

FIRST ANTHRACITE DISTRICT.

(LACKAWANNA AND SUSQUEHANNA COUNTIES.)

SCRANTON, PA., *March 16, 1893.*

HON. THOMAS. J. STEWART,

Secretary of Internal Affairs of Pennsylvania:

SIR: In compliance with the ninth section of the second article of an act of assembly approved June 2, 1891, I have the honor of presenting herewith my report as Inspector of the First Anthracite District for the year 1892.

The total production of coal in this district was 5,854,638.30 tons, an increase over the production of 1891 of 469,466.84 tons. The number of fatal accidents was fifty-five, causing twenty-four wives to become widows and eighty children to mourn the loss of fathers. The number of non-fatal accidents was one hundred and fifteen, some of which were very serious.

Thirty-six of the fatal accidents were caused by falls of coal and rock, while seven were caused by cars, making 78.17 per cent. of the total fatal accidents due to these two causes.

The quantity of coal produced per life lost was 106,447.96 tons, and per accidents, fatal and non-fatal, was 34,439 tons.

The ventilation throughout the district, with the exception of a few of the smaller openings, and in some mines where nothing but the robbing of pillars is being done, is up to a satisfactory standard.

In addition to the various tables giving the usual statistics, the report contains a table of air measurements, a description of all improvements and of some of the fatal accidents, together with a few remarks on some of the most prolific causes of accidents in this district.

Respectfully submitted.

EDWARD RODERICK,
Inspector of Mines

1-12-92.

TOTAL QUANTITY OF COAL PRODUCED DURING THE YEAR 1892.

	Tons.
Delaware and Hudson Canal Company,	2,017,922.87
Hillside Coal and Iron Company,	1,041,942.61
Delaware, Lackawanna and Western Railroad Company,	331,993.06
Lackawanna Coal Company, Limited,	340,945.13
Edgerton Coal Company,	262,035.15
North West Coal Company,	258,577.15
Pennsylvania Coal Company,	251,246.00
John Jermyn,	231,899.14
Pancoast Coal Company,	178,294.03
New York and Scranton Coal Company,	177,970.00
Jones, Simpson & Co.,	159,373.00
Mt. Jessup Coal Company,	101,853.00
Miscellaneous companies,	500,517.22
Total,	5,854,638.30

NUMBER OF EMPLOYES, WITH THE AVERAGE NUMBER OF TONS MINED PER EMPLOYE.

Delaware and Hudson Canal Company,	4,700
Hillside Coal and Iron Company,	2,253
Delaware, Lackawanna and Western Railroad Company,	845
Lackawanna Coal Company, Limited,	567
Edgerton Coal Company,	398
North West Coal Company,	351
Pennsylvania Coal Company,	606
John Jermyn,	680
Pancoast Coal Company,	507
New York and Scranton Coal Company,	395
Jones, Simpson & Co.,	531
Mt. Jessup Coal Company, Limited,	282
Miscellaneous companies,	2,006
Total,	14,121

Average number of tons per man, 414.6.

Number of Fatal Accidents and Quantity of Coal Produced per Life Lost.

Name of Companies.	Number of fatal accidents.	Number of tons produced per life lost.
Delaware and Hudson Canal Company,	12	168,166.06
Hillside Coal and Iron Company,	10	104,194.26
Delaware, Lackawanna and Western Railroad Company,	3	110,664.35
New York and Scranton Coal Company,	1	177,970.00
North West Coal Company,	4	64,644.28
Edgerton Coal Company,	2	131,017.57
Lackawanna Coal Company, Limited,	3	113,648.37
John Jermyn,	6	38,649.85
Pierce Coal Company,	3	27,261.00
Pancoast Coal Company,	2	89,147.01
Miscellaneous companies,	9	103,467.35
Total,	55	106,447.96

Number of Fatal and Non-Fatal Accidents, and Quantity of Coal Produced per Accident.

Name of Companies.	Number of fatal and non-fatal accidents.	Number of tons produced per accident.
Delaware and Hudson Canal Company,	45	44,844.28
Hillside Coal and Iron Company,	26	40,074.71
Delaware, Lackawanna and Western Railroad Company,	14	23,713.79
New York and Scranton Coal Company,	7	25,424.28
North West Coal Company,	9	28,730.79
Edgerton Coal Company,	8	32,754.39
Lackawanna Coal Company,	10	34,094.51
John Jermyn,	12	19,324.92
Pierce Coal Company,	4	20,445.75
Pancoast Coal Company,	8	22,286.75
Miscellaneous companies,	27	34,489.11
Total and average,	170	34,439.04

Classification of Fatal and Non-fatal Accidents.

Causes of Accidents.	Killed.	Injured.	Total.
Explosions of fire-damp,	1	5	6
By falls of coal and rock,	36	43	79
By cars inside and outside,	7	27	34
By premature explosion of blasts,	4	3	7
Shot through pillar,	1	4	5
Kicked by mules,	1	5	6
By falling down shafts,	2		2
Miscellaneous, inside,	2	22	24
Miscellaneous, outside,	1	6	7
Total,	55	115	170

NATIONALITY OF PERSONS KILLED OR INJURED.

	Polish.	American.	Irish.	Welsh.	Hungarian.	English.	German.	Italian.	Austrian.	Slavish.	Total.
Killed or fatally injured,	13	10	10	8	7	3	2	. .	1	1	55
Injured, . . .	17	18	30	13	15	17	3	2	. . .	. .	115
Total, . .	30	28	40	21	22	20	5	2	1	1	170

OCCUPATION OF PERSONS KILLED OR INJURED.

	Killed or fatally injured.	Injured.
Miners,	23	38
Miners' laborers,	18	37
Drivers,	7	20
Runners,	. . . . .	5
Slate pickers,	. . . . .	5
Foot men,	1	3
Head men,	. . . . .	2
Couplers, road men and door boys,	2	1
Oilers, rock men and firemen,	. . . . .	4
Fire-boss, breaker-boss and shaft sinkers,	4	. . . . .
Total,	55	115

CONDITION OF THE MINES.

The general condition of the mines of this district at the end of the year 1892, in regard to health and safety was such as to leave but little room for complaint, The ventilation was somewhat improved during the year by the erection of several new fans, and the sinking of several new air shafts. There were 9,940 persons employed in the mines of this district at the close of this period, and an average of 321 cubic feet of air per man circulating through the mines. This, if it were properly conducted to the face of each working place would render it healthy and desirable to work in. But I am sorry to say, however, that it is not done in some of the mines wherein no explosive gas is generated.

The average time worked in this district by forty-three collieries was 209+days; the total production was 5,854,638.30 tons; or an average of 28,012.6 tons per day; equal to a production of 8,767,943.8 tons for 313 days.

The drainage has not been neglected during the year and a marked improvement in this respect is noticable in many of the collieries.

Large bodies of water have been successfully tapped and drained off from old working by the Pancoast and John Jermyn Companies, thus securing their mines from sudden inflows of water.

The Delaware and Hudson Canal Company after boring to ascertain the thickness of the pillar between the Eddy creek shaft workings, and those of the slope in Jermyn No. 4, and against which water, to a vertical height of eighty feet was pressing, abandoned the plane along the pillar, and built seven dams of fire-brick and cement, and have thus strengthened the pillar and secured their mine from the possibility of an inflow of water from this point. The bore holes which are fifteen in number range in length from fourteen to thirty-five feet. Pillars are being robbed in several of the mines of the district previous to abandoning them, and while this is considered the most dangerous work connected with the mining of coal, I am happy to be able to say that no person who was thus engaged was killed or injured by a fall of roof during the year.

Remarks on Fatal Accidents.

In view of the many fatal accidents which occurred in this district during the year, I deem it imperative to make a few remarks on the principal causes of most of them, and also to describe, so far as possible, in detail, each accident that would not have happened had ordinary care been exercised by the unfortunate victims themselves.

Carbonated hydrogen gas is conspicuous in the mines of this district only by reason of its almost entire absence. It is evolved in but six of the fifty-eight openings comprising the district, consequently, accidents from explosions are few, one only from this source proving fatal during the year, and that was caused by an acknowledged mistake on the part of the unfortunate man, who was also a fire-boss. But while accidents from this source are few, the number of fatal and non-fatal accidents caused by falls of coal and roof is far too great. By referring to the table of fatal accidents in this report, it will be observed that out of a total of fifty-five, thirty-six, or nearly sixty-five and a half per cent. were caused in this manner.

It is a well-known fact that persons who are daily, and almost hourly, exposed to danger, become so accustomed to it as to regard it with an indifference approaching contempt. It is this consummate contempt of danger on the part of many miners, that leads them to take so many uncalled for, utterly unnecessary and frequently fatal risks, of which a description is herein given. It is frequently noticed that where no slips are visible in the top coal, it is left to overhang for a distance of ten, fifteen or possibly twenty feet, more or less, without a prop to support it at the other edge; a shot is fired in the bottom bench which cuts a slip, that runs up into and through the top coal; soon after the shot

has exploded, the miner who may not have enough loose coal to load the "next car" hurries back to the face of the breast to see how the hole "cut." In his haste he forgets, or does not think it necessary, to first examine the coal above him, inasmuch as it was safe before he fired the shot, and proceeds to work; when, without any warning, the top coal falls upon him with fatal results. In some places the top coal may be "dirty," that is, full of streaks of rock and bone, or it may be the "buck" which is not sent out but "gobbed" in the mine. The miner who may be working such a place, may have a car of bottom coal ready to load, will make the miner's familiar remark to his laborer, "That the top is getting bad and will not stay up much longer, so we'll blow it down after loading the next car." But while the car is being loaded, the top coal falls of itself and kills one or both.

Then again it is often observed that the miners, after trying for a long time to pry down a bad piece of coal or rock, and not succeeding as easily as they thought, conclude it was mistaken judgment on their part to think it was unsafe, and so abandon their efforts and proceed to work under it. When, in a shorter period of time than it takes to record the fact, it falls and kills the miner or his laborer.

Another somewhat prolific cause of fatal casualties, is procrastination in regard to propping. Oftentimes when a miner knows very well that a prop should be "stood" in a certain place to secure the roof, he will put off standing it until he has "loaded another car," or has "drilled and fired another hole," or as it would appear, until some other seemingly more important duty than standing a prop to ensure his own safety has been performed. Very few accidents occur where there is very bad roof, for in such a place the miner is always on the alert for danger, and keeps his props well up to the face, but, on the other hand, where the roof is apparently good, the propping is neglected, falls occur, and very severe and oftentimes fatal accidents are the result.

No roof in this district, however good it may appear, can be trusted without a goodly number of props. In some of the mines it is of a brittle, slaty nature; in others it is fire-clay with an abundance of the treacherous sulphur balls and smoothes; while in a few, it is sand rock filled with water seams and slips, owing to the shallow covering on the veins. None know nor understand better the ways and habits of miners than the thoroughly practical mine foremen, and none can do more towards lessening the number of accidents from falls than the mine foremen themselves. I would, therefore, urgently recommend that each mine foreman adopt stricter rules governing propping, and the taking down of top coal, and that a strict discipline be enforced in this respect with a view to reducing the number of accidents from this source to a minimum in the future.

As a rule for propping, I would recommend that props be stood in regular rows, the distance between props to be regulated by the nature

of the roof; and as for top coal it should not be left to overhang for any length of time, in any place without props to support it while mining out the bottom bench.

If these rules were adopted and rigidly enforced in all our mines, the number of deaths by falls of all kinds, would without any doubt, be far less numerous in the future. In conclusion, I wish to say a few words against a dangerous practice that prevails among the drivers in some of the collieries of this district, and which is frequently the cause of injuries to this class of employes. It will be remembered that when the mine law was revised in 1885, a new clause was inserted preventing after a certain period of time the use of any mine car, the bumpers of which were not of sufficient length and width to keep the bodies of said cars separated by not less than twelve inches when the cars stood on a straight level road.

This very good clause is also contained in the present law, and undoubtedly has been the means of reducing the number of accidents caused by being squeezed between cars. But while this is true, it may well be questioned, whether the number of accidents caused by being run over by cars has not increased, owing in a great measure to the use made of the long bumpers by the drivers in and around some of the collieries. They will sit on the bumpers of moving cars, with one foot on the stretcher, and the other sliding along the rail, and they frequently can be seen with both feet upon the stretcher chain, riding along thoughtless of any danger, when suddenly their feet slip off, and they are thrown under the cars and seriously if not fatally injured. This was the case in 1892, when one was killed, and four others were so seriously injured that amputation of leg or arm was necessary.

I am happy to say, however, that through the untiring efforts on the part of some foremen in this district the habit has been abolished in several collieries, and if the foremen and others in charge of drivers in collieries where this dangerous practice is still in vogue, persist in their efforts to accomplish the same end, accidents from this source will be things of the past. The adoption and rigid enforcement of a rule absolutely prohibiting any one to ride on the bumpers in the above manner would in a very short time have the desired effect.

IMPROVEMENTS MADE DURING THE YEAR 1892.

Delaware and Hudson Canal Company.

At Eddy Creek two new planes were completed, one 750 and the other 1,350 feet long, having a sectional area of 84 square feet respectively.

At No. 1 shaft two new air shafts were sunk, each having an area of forty square feet, and a depth of twenty-two feet.

Hillside Coal and Iron Company.

At Glenwood a new air shaft was sunk to the Archbald seam, a distance of 136 feet. Three new planes were also completed, the length of which are 425, 500 and 525 feet respectively.

At Erie a new air shaft was sunk, sectional area of which is 64 square feet, and a depth of 19 feet.

At Keystone a new tunnel was driven from the surface to the Archbald seam, a distance of 175 feet.

At Forest City a new air shaft was sunk, having an area of 144 square feet, and a depth of 180 feet. A new "Broadbent" fan was also erected at this place 25 feet in diameter, driven by an horizontal engine, cylinder 20″×36″ directly connected to the fan shaft.

At Clifton a new plane 300 feet long, with a sectional area of 84 square feet, and a gradient of 15° has been completed.

Murray Carney and Brown.

A new plane 2,500 feet long with a grade of 6 feet to the 100 feet has been completed; they have also enlarged their breaker thereby increasing its capacity from 75 tons to 250 tons per day. Three new boilers have also been placed in position.

Pancoast Coal Company.

This company sunk its main shaft to the bottom split of "G" vein, a distance of 295 feet, area 10′×34′. It is intended to sink the main shaft to the same seam this year for a second opening.

Northwest Coal Company.

At Simpson slope a new fan 15 feet in diameter was erected to ventilate the coal slope workings, exhausting 75,350 cubic feet of air per minute, with a working speed of 70 revolutions per minute. It is run by an horizontal engine cylinder 12″×24″.

Moosic Mt. Coal Company.

At Marshwood a new slope has been sunk a distance of 850 feet on a gradient of 10½ degrees, with an area of 72 square feet.

Elk Hill Coal and Iron Company.

At Richmond No. 3 a new air shaft, which was also a second opening, was sunk from the surface to the 14-foot vein, a distance of 155 feet. Sectional area 63 square feet.

This company is also sinking a new shaft and building a breaker in Fell township.

Mt. Jessup Coal Company, Limited.

At this company's colliery a new slope has been sunk through old workings to an abandoned levee opening up work in solid coal and pillars. Eight boilers were replaced by new ones.

New York and Scranton Coal Company.

Sunk the Sturges shaft from Clark vein to Dunmore vein, a distance of 86 feet. Sectional area 319 square feet. An air shaft was also sunk from the surface to the Dunmore vein, a distance of 180 feet. Size 11′×12′.

Delaware, Lackawanna and Western Railroad Company.

At Storrs No. 1 a new inside slope was sunk a distance of 550 feet on a grade of 13½ inches in ten feet; sectional area 66 square feet. A tunnel was also driven from the Diamond seam to the upper split of "G" vein; length, 484 feet; area, 72 feet.

At Storrs No. 3 a new slope, which is not yet completed, has been sunk a distance of 1,327 feet on a grade of 4 degrees. A new plane, 200 feet long, on a grade of 2″ in 10′, has also been made.

Blue Ridge Coal Company.

A new air shaft was sunk by the company a distance of 67 feet; sectional area, 120 square feet. This also served the purpose of a second opening.

Sterrick Creek Coal Company.

This company has sunk its No. 1 shaft from the Grassy Island vein to the Clark vein, a distance of 169 feet, and has increased its size from 10′×22′ to 12′×28′.

The breaker has been changed over and enlarged to meet the requirements of hoisting by shaft instead of by plane as heretofore. A new Guibal fan, 14″×54″, run by belts by a 14″×25″ engine, has already been erected.

A new boiler house has been erected, and 9 new steel boilers, 40″×34″, have been placed in position.

The annual examination of persons desiring to qualify for assistant mine foremen was held in this district at Olyphant on April 9.

The examiners were Edward Roderick, mine Inspector, H. P. Patton, superintendent, James E. Morrison and Vaughan Richards, miners. The following are the names of those who were recommended to receive certificates of qualification:

John H. Bexon, ... Scranton.
John M. Killaway, ... Scranton.
Joseph Duacle, ... Scranton.
John Reese, ... Scranton.
T. E. Hodgson, ... Scranton.
Robert S. Proudlock, ... Scranton.
William Jenkins, ... Scranton.
James Eckersly, ... Scranton.
Thomas H. Powell, ... Scranton.

Lewis N. Winters, ... Scranton.
Lewis R. Evans, ... Scranton.
Thomas J. Williams, ... Scranton.
Isaac Price, ... Scranton.
Joseph Grady, ... Scranton.
Peter Kelly, ... Scranton.
John Morgan, ... Scranton.
James R. Wood, ... Scranton.
Joseph Robinson, ... Scranton.
Patrick Murray, ... Scranton.
Daniel Jones, ... Scranton.
William Littlejohn, ... Scranton.
William Winship, ... Scranton.
Thomas Indian, ... Scranton.
Patrick Hadden, ... Olyphant.
Alexander Waddell, ... Olyphant.
Charles H. Beatty, ... Olyphant.
Edward J. Thomas, ... Olyphant.
Thomas H. Kearn, ... Olyphant.
William Jones, ... Olyphant.
John H. Pritchard, ... Olyphant.
Enoch Thomas, ... Olyphant.
John R. Williams, ... Olyphant.
John Lavin, ... Olyphant.
Daniel S. Evans, ... Olyphant.
Charles Thomas, ... Olyphant.
Thomas P. Lloyd, ... Olyphant.
Richard Pettigrew, ... Olyphant.
John J. Evans, ... Priceburg.
John C. Palmer, ... Priceburg.
ThompsonHull, ... Priceburg.
Peter Pinckney, ... Dunmore.
Joseph H. Edwards, ... Dunmore.
William P. Williams, ... Carbondale.
Charles Burnett, ... Pecksville.
Robert Elliott, ... Throop.

The annual examination of applicants for certificates of qualification as mine foreman was held in this district, by the same Board of Examiners on July 8th and 9th.

The following are the names of the successful candidates:

Alexander Waddell, ... Olyphant.
Enoch Thomas, ... Olyphant.
H. O. Protheroe, ... Olyphant.
Richard Pettigrew, ... Olyphant.
Lewis R. Evans, ... Scranton.

Thos. H. Powell, ... Scranton.
G. W. Powell, ... Scranton.
David W. Lewis, ... Scranton.
John E. Hughes, ... Forest City.
William S. Jones, ... Dunmore.
J. C. Palmer, ... Priceburgh.

Three persons were also recommended at this examination to receive assistant mine foremen's certificates.

P. P. Virtue, ... Priceburgh.
Thomas Coates, ... Peckville.
Reese Hughes, ... Carbondale.

DESCRIPTION OF ACCIDENTS.

Under this head it is my intention to give a somewhat lengthy description of the accidents, that with ordinary care on the part of some of the unfortunate victims themselves, and on the part of others in charge at the time of accident could have been avoided. It is an extremely sad and noteworthy fact that so many of the accidents which occur annually in and about our mines, can be traced to the carelessness and utter contempt of danger on the part of those who are killed or injured.

I earnestly hope that a careful perusal of the descriptions herewith given will be the means of arousing at least some of the miners to resolve to cease forever from taking any of the many unnecessary risks with top coal, dividing and top rock; that the drivers abandon the habit of sitting on the bumpers of moving cars with one foot sliding on the rail and the other on the stretcher, and that the mine foremen adopt strict measures in dealing with those persons caught in the act of taking any of the many unnecessary risks so well known to them.

FATAL ACCIDENTS BY FALLS.

No. 1. John J. Thomas, a miner twenty-seven years of age was killed at Pancoast mine on the 7th day of January. He had a few minutes previously fired a shot in the bottom bench, and at the time of accident was preparing to drill a rib hole to square up the face. In my investigation I found that deceased had mined the bottom bench for a distance of seven feet nearly across the face of breast; evidently intending to have a big fall of top coal at a little expense, after he would have fired the hole he was preparing.

A slip in the top coal on the rib where he intended to drill a hole had been visible for twenty-five feet or more. This alone should have been sufficient warning to him not to take such an extraordinary risk. In other words, had he taken the last precaution to insure his own safety, this accident would not have occurred.

No. 3. Andrew Meehan, miner, aged thirty-six, was fatally injured by a fall of rock on the 13th day of January. Deceased was engaged taking back top coal. A slab of rock about three inches thick that generally falls along with the top coal when the latter is blasted, was, on this day, only loosened. Meehan, after trying for some time to bar it down, and failing to do so as quickly as he would like, concluded it was safe and went to work under it. He was at work but a short time, however, before it fell, and injured him so seriously that he died on the 23d of same month. His mistake, like many others, was in not persisting in his efforts to get the bad piece down after he had started to do so.

No. 4. Michael Smith, a miner, aged forty-three, was instantly killed on the 23d day of January, at the Pierce drift. Deceased was engaged robbing pillars. He had fired a shot in the bottom coal which was about seven feet thick; the top coal which was about two feet thick, was also overhanging about two feet. After firing the shot, deceased went back and began to work out the coal loosened by the shot, and while doing so, this overhanging piece of top coal which had also been affected by the same shot, fell upon him with above result. It is obvious that had deceased taken the ordinary precaution of examining the top coal before starting to work out the bottom, this accident would not have occurred.

No. 5. Anthony Gerrity, a laborer, aged twenty-two years, was fatally injured at Mt. Jessup, on the 25th day of January. Gerrity and his miner had been trying to bar down a piece of slate, but failing to accomplish it promptly they concluded that it was safe and went to work under it. A few minutes later while Gerrity was engaged loading a car it fell, struck the car, glanced off and struck Gerrity on the small of the back, injuring him so severely that he died on the 28th of same month. Comment is unnecessary.

No. 8. On the 16th of February, at Glenwood, John McGuire, a miner, was fatally injured by a fall of dividing rock. Deceased had the reputation of being a very careful and easy going man. But on this day, immediately after firing a shot, not even waiting for the smoke to clear, he went back to see what the shot had done. On finding that it had failed to do its work he began to work out the coal with a pick. The dividing rock hung over the bottom coal about four feet. He neglected to examine this as to its safety after firing the shot. While he was engaged working out the bottom he heard the rock above him "working" and took a drill to bar it down, but as he was lifting the drill, the rock fell upon him, breaking one of his legs and otherwise seriously injuring him. He died in two hours, leaving a wife and seven young children to mourn his untimely end.

No. 10. Thomas Caviston, a miner, was fatally injured at Coal Brook tunnel on the 19th of February. He was engaged loading a car, and from the position in which he was found, it would seem that he was in the act of stooping to lift a piece of coal, when a large lump of the "14"

which had become loosened by a slip at the face of breast fell upon him. On my investigation I found the place well propped to within six feet of the face and perfectly safe from any fall of roof. But while secured from danger from this source, he neglected to examine the top coal after firing a shot in the bottom, and continued loading the car until suddenly stopped by a fall of the coal which he evidently thought was safe.

No. 16. Michael Rabel, a laborer, was fatally injured at Simpson slope, on the 26th day of March. Upon inquiry I discovered that deceased with his miner were taking back top coal on the night shift. The miner had just fired a "hole" and was on his way back to his box for powder to fire another when he met Rabel and told him not to go near the face as there was some coal hanging which was dangerous. Notwithstanding this warning, while the miner was absent a few minutes making up powder, Rabel took a pick and pulled the loose coal and rock down upon himself.

No. 19. Procrastination in propping was the cause of accident by which Andrew Roboots was killed at Simpson on the 19th day of April.

Deceased had his place well propped on one side, and also had props lying in the breast with which to prop the other, but wanted to load the car before he would stand the props. While doing so the rock came down upon him resulting in his death.

No. 22. On the 23d day of April, George Mescavidge, a miner, was killed at Jermyn No. 3. At the time of accident he was engaged taking off a skip on the west side of breast. The vein is only five feet thick but blows in two benches, the top coal being only ten inches thick. He had just fired a shot, and found on going back that it had met a "slip;" he began to work out the loose coal, paying no attention to the top bench that had also been loosened by the same shot. While he was thus engaged the top coal, which was four feet by ten feet and ten inches thick, fell upon him killing him instantly.

No. 26. John Gravecheck, a laborer, aged twenty-four years, was killed at Lackawanna Coal Company's shaft, on the 12th day of May. Upon inquiry I found that the miner having enough loose coal for the day went home about 3 o'clock. Previous to his going he had fired a hole in the top coal which did not bring it down, but loosened it. The miner, thinking it would fall during the night, left it hanging. As no one was present when the accident occurred, it could only be inferred from the position and place where deceased was found, that after loading his last car for the day, cleaning and shoveling back some coal ready for the morning, he then took a drill, went to the place where the miner had fired a shot, and began to bar out the loose coal, and pulled it down upon himself. It evidently was this man's ambition to become a miner that was the cause of his death. As there was no other reason for him to be where he was found.

No. 28. Lewis Williams, a miner, aged fifty-eight years, was killed at No. 3 shaft on the 24th day of June. Williams with another miner was engaged taking down top coal; they had fired a shot some hours before the accident occurred, but did not finish trimming down the loose coal. About 3 o'clock his partner went home leaving deceased alone to load the last car. This he was doing under the brow of the top coal, when about half a ton of it fell upon him. Thus another life was sacrificed by the joint negligence of two old and experienced miners.

No. 29. On the 26th day of June, Michael Scanlon, a miner, was fatally injured at White Oak. Scanlon was taking back top coal also, and was accustomed to blast out the props from under it, but on this day instead of blasting a prop that would prevent a hole which he had ready to fire from cutting, he took the risk of knocking the prop out with a drill. The prop stood under the edge of what is known as the "six inch," and had Scanlan stood above instead of below the prop, he would have escaped unmjured, notwithstanding his violation of general rule fifty-five of the mine law. Scanlon also had the reputation of being one of the most careful miners, and was a very industrious man, a kind husband and father. He had gone into the mine this day at 5 o'clock a. m., so as to cut enough coal to enable him to get out before the day got too warm, as he wanted to do some work at his house.

No. 31. Valadick Willcavige, a laborer, aged eighteen years, was fatally injured at Forest City slope, on the 28th day of July, and died on the 29th. Deceased and his miner had drilled and tamped a hole in the top rock, but before firing it, a prop that had been stood under the edge of this rock for safety while the coal was being mined, had to be removed. The miner had gone for a drill with which he intended to knock out the prop from a place where he would be safe in doing so. While he was absent, Willcavige took up a pick, struck the prop and knocked it out to his own sorrow, as a large flake of rock that the prop was supporting, fell upon him.

No. 33. William Francis, a miner, aged forty-nine years, was fatally injured at Forest City on the 17th day of August. Francis was working a chamber to which there was what is known as "falling roof," from the fact that it usually falls as soon as the coal is mined out from under it. On this day he fired a shot that failed to do its work. On finding that the shot had only partly loosened it, he began to bar it down, and failing to do so, he took a drill and began barring out the loose coal, when suddenly the rock fell upon him with above result.

No. 36. On the 21st day of September, George Trambok, aged twenty-eight years, was killed at Pierce Drift. He was employed as a laborer by his brother, and was engaged loading a car when a piece of top coal that was overhanging about eight feet fell upon him. His brother is known as a good, careful miner, and this was evident from the safe con-

dition in which I found his place on the day of my examination, yet, notwithstanding his reputation as a miner, it must be said that he made a serious mistake in trusting too far to the treacherous nature of the top coal.

No. 37. Joseph Look, aged twenty-two, was killed at Marvine shaft on the 28th of September. He was employed as a laborer, and at the time of accident was shoveling coal from the face of breast. He was standing under a piece of dividing rock, which the miner a few minutes previously had sounded and pronounced safe. The miner went to the opposite side of breast to work, but had not been there but a moment when the rock, which had been pronounced safe, fell, striking deceased and bringing his head in contact with a large piece of coal, crushing it into a jelly and adding another to the long list of victims who have lost their lives through the gross carelessness of those in charge of their safety.

No. 38. John Hamilton, employed with his father as a laborer, was fatally injured at Storr's No. 1, on the 30th day of September. From testimony given by his father who was present when the accident occurred, it was found that deceased stood on the east side of breast trying to bar out some coal that had been loosened by a shot fired a few minutes previously. On failing to get the coal out from this point, he stepped to the other side, and under the top bench of the bottom coal. Before beginning to bar, his father said to him, "That coal above you is not safe." With this deceased sounded it, and said it was "safe and solid," and began to bar at the coal under it, when without the least warning this top bench gave way striking him on the back, with above sad result.

No. 41. Simon Ritsko, company laborer, twenty-two years of age, was killed by a fall of rock at Mt. Jessup slope on the 25th day of October. He was blocking up a new road that had been laid in an old chamber, the pillars of which were to be robbed. A miner and laborer who were engaged blasting coal in this chamber had just fired a shot, by which a prop that stood under a piece of falling roof was knocked out. As soon as the shot went off, the three men started from their place of safety to the chamber; the miner going to see what the shot had done. His laborer was going for props to replace it. Ritsko was a step ahead of the laborer on his way to his work, when he heard the crash of the top rock and made an effort to step back, but too late to escape the deadly effects of the falling mass. This was another case of gross carelessness upon the part of the miner, who should first have restood the fallen prop instead of leaving the work to his laborer.

No. 42. Andrew Valace, a miner, 34 years of age, was fatally injured at Pierce drift on the 27th day of October. I went to the scene of accident shortly after, and found that Valace had stood a prop under the edge of a piece of top coal that was broken off on the rib. He then fired a shot in the bottom bench that failed to do its work. After this,

he took a drill and began to bar out the shattered coal, and while doing this, the prop and top coal gave way. Valace was a good miner and had his place well propped and in a safe condition, but from the evidence it would seem that he did not have enough coal to finish loading his last car, and he knew of the dangerous condition of the top coal, yet, notwithstanding this he risked and lost his life.

No. 43. Thomas Darrow, a miner, thirty-seven years of age, was killed at Forest City No. 2 on the 28th day of October. The cause of this death is not difficult to discover. Darrow had worked out the bottom bench of coal for a distance of eighteen feet on the west rib of breast, leaving the top bench to overhang in a triangular piece extending to the center of breast. Deceased had fired a shot in the bottom coal, but found on getting back to face that it had not cut. He then, before examining the top coal, began to bar out the bottom, and while thus engaged the top fell upon him, killing him instantly.

No. 45. On the 5th day of November, Anthony Borosky, a laborer, was killed at Simpson slope. He and his miner were barring down a piece of loose top coal; in the meantime the driver brought in a car, and they concluded to stop barring until the car was loaded. The miner took up his drill intending to put in a hole on the opposite rib; the laborer went for his pick and shovel which were only a few yards away, and while walking towards the car which stood under the coal that they had been barring, it fell killing him instantly.

No. 46. Michael Mortosky, a laborer, was fatally injured at Ontario shaft on the 9th day of November. In my investigation I found that James Mills, a miner, was driving a cross cut to the chamber inside. He had drilled a hole, and while tamping it said that he sent his laborer to give warning to the men working the next chamber that he was about to fire a blast. He also stated that he shouted fire after withdrawing the needle, and again after lighting the squib.

He went down on the gangway, and while conversing with the miner of the next chamber the shot exploded, blew through the pillar and slightly injured three men, and fatally injured the fourth. The evidence given by the injured men was in direct contradiction to that given by Mills who fired the shot. An inquest was held, the jury bringing in a verdict that Mortosky's death was accidental. While this verdict was in accordance with the evidence given, I claim that Mills should not have fired the shot until he had satisfied himself that the men in the next chamber had withdrawn to a place of safety.

No. 47. On the 17th day of November Anthony Junkosky was killed at Simpson slope. After careful inquiry into this case I found that deceased was a miner and had worked the place in which he was killed from the gangway to its limit, and was at the time of accident taking back top coal. He and his laborer were engaged loading a car when a slab of dividing rock, five by six feet and ten inches thick, fell upon

him. The place was well propped on each side of the track, but this piece being over the track was not, and should have been taken down before he began to load the car, knowing as he did that it was unsafe.

No. 49. Stephen Shernosky, a laborer, thirty years of age, was killed at Glenwood on the 22d day of November.

A careful examination into the circumstances of this accident showed that a few minutes before it occurred a shot had been fired by which a prop that stood under a loose piece of rock was knocked out, and instead of taking the bad piece down or restanding the prop, the miner began to work in the face of the breast, while the laborer began to shovel back some coal, when without any warning the rock fell, instantly killing the laborer, the miner barely escaping the same fate.

No. 51. Charles Palraitus, a laborer, was instantly killed at Leggett's creek on the 28th of November.

In my investigation made on the following day I found that the miner had been engaged driving a cross cut from his chamber to the one inside. A prop that was standing opposite the cross cut had been knocked out by a shot that blew through the pillar a few days before the accident occurred. When the cross cut had been broken through, the miner and deceased went into the next chamber to load their coal. Before commencing to work at this point the miner says he examined the roof and thought it was safe, and therefore did not restand the prop that lately had been knocked out, but began to work, when in a short time the rock fell with the above result.

Had the prop been restored this accident would not have occurred.

No. 52. On the 1st day of December Michael Dener, a miner, was fatally injured at Jermyn No. 3.

I found upon examination that deceased was turning a breast off the gangway; he had loaded three cars from the bottom or mining bench, and stated to one of the near-by miners that he was anxious to load an other before he took down the top coal. With this object in view he drilled and fired a hole in the bottom which broke up through the top coal. From the testimony of one of the miners who was near at the time of accident it was learned that Dener, instead of examining the top coal before going under it to work, as he requested him to do, began to bar out the coal shattered by the shot, and while so doing the top coal fell upon him in less than a minute's time, injuring him so severely that he died in two hours after.

By Cars Outside.

Daniel Connelly, a coupler, aged fourteen years, was killed at Clifford on the 12th day of January. At this colliery the loaded cars are hauled from the shaft to the breaker by an endless rope, and the empty cars, by the same means, are hauled to a point one hundred feet beyond the head of shaft. It was the work of deceased to stand at this point and

take the hook off of empty cars in case it did not become detached itself. On this day the young boy had gone down to the head of shaft for some purpose only known to himself. When the empty cars came to where he was standing he jumped on to ride to his place of duty. In jumping off he slipped and fell under a trip of loaded cars that was passing to the breaker, and was pushed along the rail a distance of eighty feet before the cars were stopped. When picked up by the outside foreman it was found that his skull was fractured and life extinct. His occupation was a safe one, but by going out of the path of duty his young life was brought to an end.

By Cars Inside.

Dan. Williams, a door boy fifteen years of age, was killed at Glenwood on the 9th day of February. His duty was to tend a door which was a short distance from the foot of No. 2 plane, but at the time of accident he was away from his door and near the foot of said plane, where he was killed by a runaway trip of cars.

In my investigation I found that the headman thinking he had properly fastened the hook to the cars, went to the head of plane, kicked out the head block and left the cars over the apex, when he discovered that the hook had become unfastened, and also that he had not received a signal to hoist. The cars kept the track to the bottom, where they caught young Williams. Had the little fellow remained at his door he would have been uninjured.

On the 23d day of February, at Jermyn No. 3, Isaac Mawson, a driver was killed. Upon investigation it was found that Mawson had stopped his trip of cars about one hundred feet from the turnout to ascertain if it was "all right to pull out." Being told it was, he started up his mules. A small boy who was leading the mules and who was the only witness to the accident, stated that Mawson was sitting on the bumper with one foot on the stretcher and the other on the rail, and he thought that his foot slipped off the rail and before he could balance himself, the car struck him, instantly doubling him up with fatal results.

On the 16th day of June, John E. Bucker, a driver, was killed at Storrs No. 1. Deceased was employed in the slope on the night shift. Having some leisure time he said to the slope runner that he would "go up to see how they were getting along above," and with this remark he jumped upon the bumper of the first car, and rode to the head of slope against the protest of the slope runner. In jumping from the car at head of slope he slipped on the rail, fell and was instantly killed by the car passing over him. This young man disobeyed rule 16 of the mine law, as well as orders given by the mine foreman. "That no persons shall ride upon or against any loaded car on a slope or plane," and paid the penalty with his life.

On August 16th, James McCormick, a driver, was fatally injured at Storrs No. 1 shaft. He was was walking on the main road, by the side of the mule he was driving, when a large flake of bone roof fell, the edge of which struck him and knocked him down. At the inquest it was clearly proven that the main road, in a general way, had been examined on this day by the mine foreman, but that this spot had escaped his observation.

The jury rendered a verdict that this accident might have been avoided had this particular place been examined on that day.

On the 23d day of November, Michael Horney, a driver, was fatally injured at Jermyn No. 3. I found on examination that the boy went up to the face of a breast in which a loaded car was standing. The breast pitches on an angle of 18°, and every precaution had been taken to prevent an accident, from the car getting away while the men were loading it. There was a sprag in each wheel, a block ahead of each wheel, and a chain around the front bumper fastened to the rail.

While the runners were sanding the rails, Horney, who had no business near the car, pulled out one of the blocks, and immediately the car started, but did not go far, before the chains became tight, and threw the car across the track, the hind end striking Horney and crushing him against the rib, with above sad result.

By Explosions of Gas.

William J. Kelley, a fire-boss, aged fifty years, was fatally burned by an explosion of fire damp at Richmond No. 3 on the 20th day of February and died on the 29th. I visited the scene of explosion and found, upon investigation, that Kelley had been ordered by the mine foreman to build a brattice near the face of McGovern's breast for the purpose of conducting the air along the face of this breast, and also along the faces of the chambers on the inside. Instead of bratticing McGovern's place as he was ordered, he built a brattice across the next chamber inside, known as Neat's. This cut off the air from the latter, by allowing it to escape to the return through McGovern's place, and caused gas to accumulate on the inside of the brattice built by Kelley. Kelley while on his "round" through the mines previous to the men entering on the day of accident, and not expecting any gas at this point (inasmuch as none had ever been found there), walked into the place with a naked light but was sadly disappointed as the result shows. Deceased was a very sensitive man and sternly refused to say how the accident occurred, but admitted that he had made a sad mistake. In which way, can only be inferred from the fact that a mine lamp and safety-lamp were found near the same spot, the latter in good condition.

BY FALLING DOWN SHAFT.

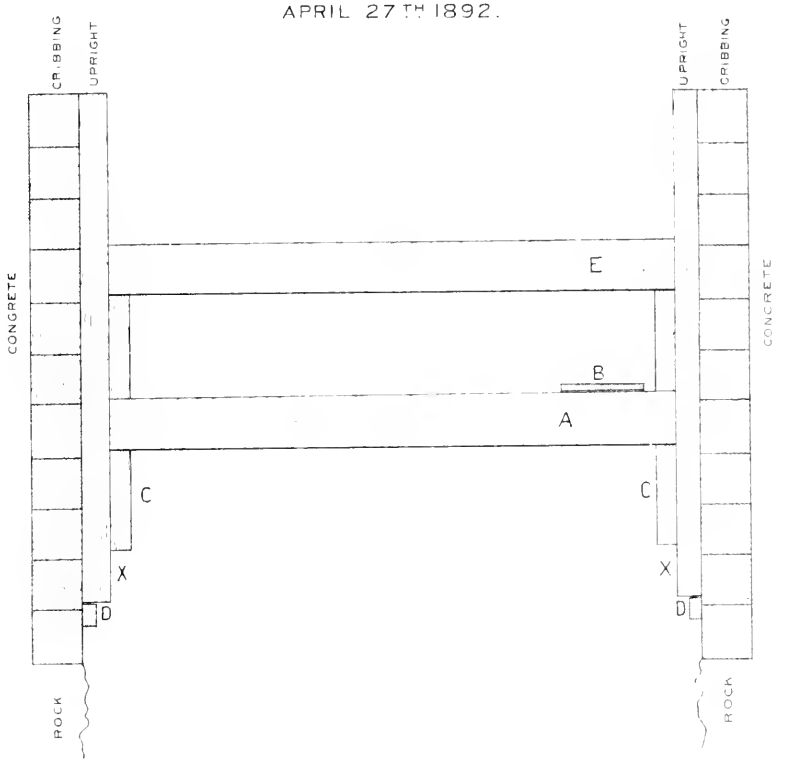
On the 27th day of April at Sterrick creek No. 1 shaft, James Connelly was killed and Thomas Troy fatally injured. They were engaged taking out old buntons, and putting in new ones (the shaft having been enlarged), they had started at the bottom and had come up to within twenty feet of the top. Troy had been in charge of the work from the start. At the time of the accident, they were moving a platform from one bunton to the one below. These buntons were fastened by spikes to an upright in the corner of the shaft, and also supported at each end by a brace. Troy had on the previous day removed the brace from under the bunton upon which they were now erecting their platform, and strange as it may seem, depended upon two spikes in the rotten end of a bunton to support the weight of platform and themselves. Having placed two planks upon this bunton, they then jumped upon the platform, and immediately the bunton gave way and the two unfortunate men were precipitated to the bottom of the shaft a distance of seventy feet.

In my investigation I found that the ends of all old buntons which were taken out were rotten, which fact should, I think, have been sufficient warning to them not to depend upon two spikes in a rotten bunton to support them. While Troy and Connelly had the reputation of being competent and careful shaft sinkers, still it must be said that they lost their lives by a reckless mistake on their own part.

ACCIDENT AT No 1 SHAFT

STERRICK CREEK COLLIERY, PECKVILLE

APRIL 27TH 1892.



A. Bantons which were war fastened to Upright by spikes
B. Two Planks on which Tim and Connolly stopped
C. Cleats removed by Tim the day before the accident
D. Cleats put in by Tim 30 minutes before accident to keep Uprights from moving down.

In the place X there was originally another banton and both the uprights and the cleats continued down and rested on still a lower banton fastened in the rock.
When new oak bantons were put in the rock, the uprights were cut off as shown, and the banton at X and cleats C removed
The platform was being moved from E to A
McCart stood on E These bantons are at north east end of shaft

Edward Roderick, Inspector

TABLE A—*Showing the Quantity of Air Circulating through the Mines of the First Anthracite District at the end of the year 1892.*

NAME OF MINE.	Name of operator.	Number of fans or furnaces.	Number of persons employed in air currents.	Number of separate air currents.	Number of cubic feet of air at inlet.	Cubic feet of air at or near face of workings.	Cubic feet of air at outlet.
Leggett's Creek, Clark vein	Delaware and Hudson Canal Company	1	112	4	107,220	111,400	130,700
Leggett's Creek, 14' vein	do. do.	1	82	4	80,300	73,170	84,840
Leggett's Creek, Diamond vein	do. do.	.....	30	1	33,500	33,500	33,500
Marvin shaft	do. do.	1	308	6	112,919	109,044	117,074
Eddy Creek shaft	do. do.	1	206	3	56,670	51,700	60,000
Eddy Creek slope	do. do.	.....	91	2	34,480	33,700	35,460
Olyphant No. 2	do. do.	1	207	3	64,460	47,030	50,130
Grassy Island	do. do.	1	290	4	82,860	79,420	84,240
White Oak No. 3½	do. do.	Natural,	64	1	25,000	11,250	33,750
White Oak No. 5	do. do.	Furnace,	194	3	51,780	33,840	45,400
Jermyn No. 1 shaft	do. do.	Fan, . .	345	5	119,010	81,030	116,770
Powderly slope	do. do.	1	163	5	66,664	57,918	71,072
White Bridge tunnel	do. do.	1	134	3	33,500	31,200	43,720
No. 1 slope	do. do.	1	63	2	18,700	16,720	24,200
No. 3 shaft	do. do.	1	90	3	30,210	15,450	24,780
Coal Brook tunnel	do. do.	1	141	4	34,950	30,300	34,990
Wilson Creek tunnel	do. do.	1	253	4	79,850	66,740	84,700
Clinton slope	do. do.	1	172	3	55,965	45,555	62,340
Glenwood shaft	Hillside Coal and Iron Company	1	308	4	94,120	83,000	97,490
Keystone tunnel	do. do.	Furnace,	127	2	63,110	59,850	58,790
Erie shaft	do. do.	Fan, . .	330	5	76,000	74,516	77,680
Forest City slope	do. do.	1	182	4	38,376	36,278	39,497
Forest City shaft	do. do.	1	271	5	60,902	59,348	66,678
Clifford shaft	do. do.	1	171	3	67,950	43,130	63,380
Hendricks drift No. 1	Edgerton Coal Company	1	36	1	38,500	13,000	38,700
Hendricks drift No. 2	do. do.	Furnace,	50	1	27,100	10,000	28,200
Edgerton drift	do. do.	Fan, . .	203	5	90,400	65,500	92,000
Simpson slope No. 1	North West Coal Company	1	76	2	46,100	45,690	64,150
Simpson slope No. 2	do. do.	1	142	3	101,520	96,640	109,650
Mt. Vernon	B. M. Winton and others	Furnace,	44	1	17,500	14,000	23,000
Gypsy Grove No. 1	Pennsylvania Coal Company	Fan, . .	271	4	62,840	53,491	77,545
Gypsy Grove No. 2	do. do.	1	123	3	50,212	24,230	50,836
Jermyn No. 3	John Jermyn	1	148	4	81,349	64,326	89,679
Jermyn No. 4	do.	1	145	7	111,270	87,850	112,070
Richmond No. 3	Elk Hill Coal and Iron Company	1	52	1	35,100	35,100	36,250
Pancoast shaft	Pancoast Coal Company	1	368	6	85,960	82,240	90,330
Ontario slope	Stroud & Chamberlain	1	29	1	8,400	6,100	9,900

TABLE A—*Continued.*

NAME OF MINE.	Name of operator.	Number of fans or furnaces.	Number of persons employed in air currents.	Number of separate air currents.	Number of cubic feet of air at inlet.	Cubic feet of air at or near face of workings.	Cubic feet of air at outlet.
Ontario drift	Stroud & Chamberlain		5	1	5,600	3,350	6,100
Barber drift	do.		18	1	10,200	9,000	15,100
Mt. Jessup slope	do.		106	4	35,500	41,500	61,000
Pierce drift	Mt. Jessup Coal Company, Limited		71	1	28,875	20,740	52,370
Ontario shaft	Pierce Coal Company		255	4	126,800	85,400	131,200
Sturges shaft	New York and Scranton Coal Company		Idle.				
Riverside shaft	do.						
Jones-Simpson colliery	Riverside Coal Company	1	146	3	43,055	39,508	41,191
Lackawanna shaft	Jones, Simpson & Co.	2	324	5	201,000	191,000	198,000
Storrs No. 1 shaft	Lackawanna Coal Company, Limited	1	335	5	88,540	75,050	91,610
Storrs No. 2 shaft	Delaware, Lackawanna and Western R. R. Co.	1	250	4	113,710	108,688	122,256
Storrs No. 3 shaft	do.	1	191	3	59,887	62,333	67,100
Storrs drift	do.	1	95	3	96,145	87,050	102,450
Marshwood slope	do.	1	44	1	21,792	20,400	25,950
Blue Ridge	Moosic Mountain Coal Company	1	98	3	46,065	34,029	45,735
Dolph mine	Blue Ridge Coal Company	1	151	3	49,985	32,660	41,510
Murray's mine	Dolph Coal Company	1	Idle.				
Sunshine	Murry, Carney & Brown		Idle.				
	West Side Coal Company		Idle.				
		45	7,996	167	3,193,501	2,693,665	3,978,723

There were 1,344 persons employed in main air currents and not working in any particular split of air; adding which, makes the total number employed at the end of the year 9,340.

Table 1.—*Showing Location of Collieries in the First Anthracite District.*

Name of Colliery.	Name of Operator.	Location—Lackawanna County.	Name of Superintendent.	Postoffice Address.
Leggett's Creek	Delaware and Hudson Canal Company	First ward, Scranton	A. H. Vandling, general superintendent	Scranton, Pa.
Marvine	do. do.	do. do.	A. Nicol, mine superintendent	do.
Eddy Creek	do. do.	Olyphant borough	A. P. Patten, assistant superintendent	Olyphant, Pa.
Olyphant No. 2	do. do.	do. do.	Alex. Simpson, master mechanic	Scranton, Pa.
Grassy Island	do. do.	do. do.	Christ. Scherar, chief engineer mine department	do.
White Oak Nos. 3½ and 5	do. do.	Archbald borough		
Jermyn	do. do.	Jermyn borough		
Powderly	do. do.	Carbondale township		
No. 1 shaft and tunnel	do. do.	Carbondale City		
No. 3 shaft	do. do.	do. do.		
Coal Brook tunnel	do. do.	do. do.		
Wilson Creek tunnel	do. do.	Fell township		
Midland tunnel	do. do.	do.		
Racket Brook Breaker	do. do.	Carbondale township		
Clinton	do. do.	Fell township		
Storrs Nos. 1 and 2	Dela., Lack. & Western R. R. Co.	Dickson City borough	W. R. Storrs, general coal agent	Scranton, Pa.
Storrs No. 3	do. do.	do. do.	W. H. Storrs, assistant coal agent	do.
Storrs tunnel	do. do.	do. do.	B. Hughes, general mine superintendent	do.
			F. W. Phillips, asst. mine superintendent	do.
Glenwood	Hillside Coal and Iron Company	Mayfield borough	W. A. May, assistant	Scranton, Pa.
Erie	do. do.	do. do.	William Walker, assistant	Mayfield, Pa.
Keystone	do. do.	do. do.	J. D. Caryl, assistant	Forest City, Pa.
Forest City shaft	do. do.	Forest City borough, Susq. co.		
Forest City slope	do. do.	do. do.		
Clifford	do. do.	do. do.		
Gipsy Grove	Pennsylvania Coal Company	Dunmore, Lackawanna county	John B. Smith, general superintendent	
Gipsy Grove No. 3	do. do.	do. do.	Geo. B. Smith, assistant superintendent	
Gipsy Grove No. 4	do. do.	do. do.	James Young, mine superintendent	
Lackawanna	Lackawanna Coal Company, Limited	Blakely	O. S. Johnson	Scranton, Pa.
Hendricks drifts 1 and 2	Edgerton Coal Company	Carbondale	J. T. Crawford	do.
Edgerton drifts 1 and 2	do. do.	Archbald	do.	do
Simpson No. 1	Northwest Coal Company	Fell township	do.	do.
Simpson No. 2	do. do.	do.	do.	do.
			Chas. D. Sanderson	Throop, Pa.
Pancoast	Pancoast Coal Company	Throop	J. V. Bartly, assistant superintendent	do.
L. V. Winton	Winton Coal Company	Winton	B. M. Winton	Scranton, Pa
Riverside	Williams, Jones & Richards	Archbald	John Reese	do.
Pierce	Pierce Coal Company	do.	David Morgan	Winton, Pa.
Ontario No. 1	Stroud & Chamberlain	Carbondale	G. F. Chamberlain	Carbondale, Pa.
Butler dritt	do. do.	do.		
Murrays	Murray, Carney & Brown	Dunmore	W. J. Murray	Dunmore, Pa.
Mt. Vernon	B. M. Winton & Co.	Winton	Charles Hutchinson	Kingston, Pa.
Mill Creek	W. P. Williams	Fell township	W. P. Williams	Carbondale, Pa.
Jermyn No. 3	John Jermyn	Priceburgh	W. M. Jermyn	Scranton, Pa.
Jermyn No. 4	do. do.	do.	do.	do.
Richmond No. 3	Elk Hill Coal and Iron Company	First ward, Scranton	W. H. Richmond	Dickson City, Pa.
Richmondale	do. do.	Fell township	Thos. Grier, assistant superintendent	do.

TABLE 1.—*Continued.*

NAME OF COLLIERY.	Name of Operator.	Location—Lackawanna County.	Name of Superintendent.	Postoffice Address.
Sunshine.	West Side Coal Company.	Carbondale township.	Sumner D. Davis.	Jermyn, Pa.
Jones, Simpson & Co.	Jones, Simpson & Co.	Archbald.	Edward S. Jones.	Olyphant, Pa.
Marshwood.	Moosic Mountain Coal Company.	Olyphant borough.	Chas. P. Ford.	Marshwood, Pa.
Mt. Jessup.	Mount Jessup Coal Company.	Winton borough.	Eli F. Conner.	Winton, Pa.
Ontario.	New York and Scranton Coal Company.	Peckville borough.	Evan P. Davis.	Scranton, Pa.
Dolph.	Dolph Coal Company.	Winton borough.	W. G. Robertson.	Dunmore, Pa.
Blue Ridge.	Blue Ridge Coal Company.	Archbald borough.	J. N. Rice.	Peckville, Pa.
Sterrick Creek.	Sterrick Creek Coal Company.	Peckville borough.	Thos. Sprague.	Scranton, Pa.

TABLE NO. 2.—*Giving the total number of tons of coal mined in each colliery, number of days worked, number of employes, number of persons killed and injured, number of keys of powder used, etc., in the First Anthracite District for the year ending December 31, 1892.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.
Delaware and Hudson Canal Company.											
Leggett's Creek	Scranton city	207,982.10	188,803.15	243.25	508	2	1	5,116	18	48	...
Marvine	do.	219,632.12	200,792.60	238.25	440	1	1	5,248	21	55	...
Eddy Creek	Olyphant	154,512.16	146,942.16	222	424	...	3	5,027	12	39	...
Olyphant No. 2	do.	138,963.15	125,384.15	222	334	...	2	4,418	15	33	...
Grassy Island	do.	164,811.12	161,602.14	224.5	413	1	10	5,050	21	43	1
White Oak	Archbald	173,587.08	168,640.14	239	408	1	1	4,342	6	29	1
Jermyn No. 1	Jermyn	246,615.08	226,298.04	224.25	482	1	2	5,176	9	34	...
Powderly	Carbondale township	132,495	96,389	223.25	276	1	...	4,550	19	30	...
No. 1 shaft	do. do.	95,833	55,061.02	214	263	1	4	3,136	5	41	...
No. 3 shaft	do. do.	45,947	19,569.03	192.75	158	1	...	1,692	12	15	...
Coal Brook	do. do.	290,851	234,181	219.75	642	1	1	8,278	9	85	1
Clinton	Fell township	146,794	129,561.07	221.25	265	2	7	5,835	6	28	...
Racket Brook	Carbondale township	.....	156,514.09	232	87	...	1	.....	5	5	...
Totals		2,017,992.81	1,909,737.59	223.67	4,700	12	33	57,868	158	485	3
Hillside Coal and Iron Company.											
Glenwood	Mayfield, Lackawanna county	281,929.01	269,875.02	250	581	3	5	8,223	10	42	...
Erie	do. do.	227,733.15	212,068.06	240.75	478	...	3	7,302	24	42	1
Keystone	do. do.	74,658.15	72,858.15	176.25	195	...	...	1,615	2	29	...
Forest City	Forest City, Susquehanna county	239,455.11	208,882.05	217.25	606	4	7	12,160	18	50	3
Clifford	do. do.	218,167.19	206,097.19	216	393	3	1	6,516	9	29	1
Totals		1,041,942.61	969,780.47	220.05	2,253	10	16	35,816	63	192	5

TABLE NO. 2.—*Continued.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.
Pennsylvania Coal Company.											
Gypsy Grove, No. 1.	Dunmore,	106,715	99,937	237.75	245	. . .	. . .	5,106	17	23	1
Gypsy Grove, No. 2.	do.	144,531	142,217	240	361	. . .	1	5,933	10	31	
Totals.		251,246	242,154	238.87	606	. . .	1	11,039	27	54	1
John Jermyn.											
Jermyn No. 3,	Priceburgh,	139,928.09	139,928.09	187.7	389	5	2	5,129	12	40	
Jermyn No. 4.	do.	91,971.05	90,029.15	168.6	291	1	4	3,739	21	30	
Totals,		231,899.14	229,957.24	178.1	680	6	6	8,868	33	70	
Miscellaneous Companies.											
Edgerton,	Archbald,	262,035.15	246,629	208.2	398	2	6	7,274	6	46	2
Simpson,	Fell township,	258,577.15	243,024.05	217.25	351	4	5	7,736	21	52	2
Lackawanna Coal Company, Limited,	Blakely,	340,945.13	337,765.06	277.4	567	3	7	9,600	24	59	. . .
Pancoast,	Throop,	178,294.03	167,467.18	182.75	507	2	6	5,917	18	37	. . .
Jones, Simpson & Co.,	Archbald,	159,373	156,873	229.9	531	1	4	5,465	14	32	4
Storrs,	Dickson city,	331,993.06	318,205.06	184	845	3	11	11,922	20	107	3
Ontario,	Peckville,	177,970	169,480	239	395	1	6	9,566	17	45	1
Mt. Jessup Coal Company,	Winton borough,	101,853	94,109.14	244.8	282	2	4	4,075	13	31	1
Elk Hill Coal and Iron Company,	Scranton,	94,009	83,191	232.75	260	2	1	2,115	16	18	1
Marshwood,	Olyphant borough,	63,437	58,510	202	185	. . .	1	3,199	11	27	. . .
Dolph,	Winton do.	57,079	55,384	98	289	1	1	2,475	5	36	1
Pierce,	Archbald do.	81,783	80,136	146.5	201	3	1	2,231	12	24	2
Blue Ridge Coal Company,	do. do.	42,668.14	42,668.14	112.3	306	. . .	. . .	2,345	15	23	2
S. V. Winton,	Winton do.	48,103.10	45,394.11	185.8	134	. . .	. . .	1,852	3	12	. . .
Riverside,	Archbald,	46,663.84	41,654.08	151	255	. . .	1	3,500	9	13	. . .
Ontario No. 1,	Carbondale,	28,612	23,050	231.5	137	. . .	3	1,409	3	22	. . .
Murray's,	Dunmore,	14,636	11,022	204.25	29	. . .	1	490	2	3	. . .
Mt. Vernon,	Winton,	8,169	8,119	81	90	1	. . .	575	2	5	. . .
Mill Creek,	Fell township,	5,700	5,000	221	30	. . .	. . .	178	1	4	. . .

Sunshine,	Carbondale township,	7,784.14	5,767.17	185	23	. . . . .	320	1	3	. . .
Fall Brook,	Fell do.	1,813	1,813	173	5	. . . . .	88	2	1	. . .
Sterrick Creek,	Peckville,	. . . . .	. . . . .	. . . .	62	2	1	. . . . .	15	23	2
Totals,	. . . . .	2,311,557.74	2,195,260.99	184.64	5,882	27	59	82,392	229	647	21

Recapitulation.

Delaware and Hudson Canal Company,	Scranton,	2,017,992.81	1,909,737.59	223.67	4,700	12	33	57,868	158	485	3
Hillside Coal and Iron Company,	do.	1,041,942.61	969,780.47	220.05	2,253	10	16	35,816	63	192	5
Pennsylvania Coal Company,	Dunmore,	251,246	242,154	238.87	606	. . .	1	11,039	27	54	1
John Jermyn,	Scranton,	231,899.14	229,957.24	178.01	680	6	6	8,868	33	50	. . .
Miscellaneous companies,	. . . . .	2,311,557.74	2,195,260.99	184.64	5,882	27	59	82,392	229	647	21
Grand totals,	. . . . .	5,854,638.30	5,546,890.29	209.94	14,121	55	115	196,983	510	1,448	30

TABLE 3.—*Showing the number of each class of Employes at each Colliery in the First Anthracite District during the year 1892.*

NAMES OF COLLIERIES.	NAMES OF PERSONS EMPLOYED INSIDE.							NAMES OF PERSONS EMPLOYED OUTSIDE.							Grand total inside and outside.
	Inside foremen.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All other company men.	Superintendents, bookkeepers and clerks.	Total outside.	
Delaware and Hudson Canal Company.															
Legget's Creek	2	106	106	48	78	26	366	1	7	8	71	55	. . .	142	508
Marvine	1	108	108	34	60	14	325	1	6	8	50	50	. . .	115	140
Eddy Creek	2	110	107	42	40	15	316	1	5	9	56	37	. . .	108	424
Olyphant No. 2	1	85	72	32	38	20	248	1	4	11	42	28	. . .	86	334
Grassy Island	1	126	90	26	41	13	297	1	4	12	58	41	. . .	116	413
White Oak	2	116	88	14	42	7	269	. .	4	4	68	62	1	139	408
Jermyn	1	215	75	45	29	18	383	1	5	12	40	41	. . .	99	482
Powdery	1	163	6	26	33	13	242	1	2	3	5	23	. . .	34	276
No. 1 shaft	2	136	25	35	14	7	219	1	4	3	6	22	1	41	260
No. 3 shaft	1	74	26	9	21	4	135	1	2	3	6	11	. . .	23	158
Coal Brook	3	221	82	59	62	13	440	1	5	5	100	91	. . .	202	642
Racket Brook	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	. . .	2	46	37	1	87	87
Clinton	1	67	67	20	23	4	182	1	3	4	36	39	. . .	83	265
Total	18	1,527	852	390	481	154	3,422	12	51	84	594	544	3	1,278	4,700
Hillside Coal and Iron Company.															
Glenwood	2	152	156	47	65	19	441	1	6	11	76	45	1	140	581
Erie	2	120	120	56	40	14	352	1	6	11	62	42	4	126	478
Keystone	1	50	40	7	31	2	131	1	2	2	36	22	1	64	195
Forest City shaft and slope	2	228	152	43	54	12	491	1	8	12	39	50	5	115	606
Clifford	1	133	89	15	27	3	268	1	8	9	55	50	2	125	393
Total	8	685	557	168	217	50	1,683	5	30	45	268	209	13	570	2,253
Pennsylvania Coal Company.															
Gypsy Grove No. 1	1	78	63	7	20	3	172	3	1	10	21	37	1	73	245
Gypsy Grove No. 2	1	127	120	12	29	5	294	2	2	8	34	21	. . .	67	361
Total	2	205	183	19	49	8	466	5	3	18	55	58	1	140	606

John Jermyn.															
Jermyn No. 3	1	92	92	26	71	10	292	1	5	6	56	29	....	97	389
Jermyn No. 4	1	64	64	33	39	3	204	1	4	9	29	41	3	87	291
Total	2	156	156	59	110	13	496	2	9	15	85	70	3	184	680
Delaware, Lackawanna and Western Railroad Company.															
Storr's Nos. 1 and 2	2	177	176	60	77	25	577	1	17	15	85	72	....	190	707
Storr's No. 3	1	42	49	22	17	2	138	...	...	...	...	...	....	....	138
Total	3	224	225	82	94	27	655	1	17	15	85	72	....	190	845
Miscellaneous Companies.															
Edgerton Coal Company	2	115	107	16	40	10	291	2	5	5	60	30	5	107	398
Northwest Coal Company	2	125	65	10	45	8	255	1	10	12	45	26	4	96	351
Lackawanna Coal Company, Limited	2	145	145	42	79	13	426	1	7	12	90	30	1	141	567
Pancoast Coal Company	2	127	117	40	54	17	357	1	7	12	70	57	3	150	507
Simpson Coal Company	1	29	29	6	15	2	82	1	3	2	30	15	1	52	134
Riverside Coal Company	1	60	65	12	17	3	158	2	2	4	60	26	3	97	255
Pierce Coal Company	1	48	60	8	13	1	131	1	5	8	30	24	2	70	201
Stroud & Chamberlain	1	28	19	4	15	2	69	1	2	2	39	22	2	68	137
Mill Creek Coal Company	1	4	4	2	2	....	13	...	....	1	4	12	....	17	30
B. M. Winton and others	1	17	17	2	5	1	43	1	2	2	31	10	1	47	90
Murry, Carney & Brown	1	5	5	3	5	....	19	1	....	1	4	4	....	10	29
Elk Creek Coal and Iron Company	2	40	75	18	12	20	167	1	5	9	45	30	3	93	260
West Side Coal Company	1	6	6	....	2	....	15	....	....	1	4	2	1	8	23
Jones, Simpson & Co.	2	215	122	22	37	14	412	1	6	12	53	45	2	119	531
Moosic Mt. Carmel Company	1	48	48	8	20	4	129	1	5	5	35	6	4	56	185
Mt. Jessup Coal Company, Limited	1	66	62	11	20	2	162	2	7	8	46	50	2	120	282
New York and Scranton Coal Company	2	110	110	19	46	8	295	1	7	17	36	37	2	100	395
Dolph Coal Company	1	67	59	8	42	4	187	1	5	5	64	33	2	108	289
Sterrick Creek Coal Company	1	....	....	24	....	....	25	1	3	7	....	25	2	37	62
Blue Ridge Coal Company	1	75	75	20	14	5	190	1	6	7	90	10	2	116	306
Fall Brook, local sales	....	2	....	....	1	....	3	....	....	....	....	2	....	2	5
Total	27	1,332	1,190	275	484	114	3,423	21	84	132	834	496	47	1,614	5,037

Recapitulation.

Delaware and Hudson Canal Company	18	1,527	852	390	481	154	3,422	12	51	84	594	544	3	1,278	4,700
Hillside Coal and Iron Company	8	683	557	168	217	50	1,683	5	30	45	268	209	13	570	2,253
Pennsylvania Coal Company	2	205	183	19	49	8	466	5	3	18	55	58	1	140	606
John Jermyn	2	156	156	59	110	13	496	2	9	15	85	70	3	184	680
Delaware, Lackawanna and Western Railroad Company	3	224	225	82	94	27	655	1	17	15	85	72	....	190	845
Miscellaneous companies	27	1,332	1,190	275	484	114	3,423	21	84	132	834	496	47	1,614	5,037
Grand totals	60	4,127	3,163	993	1,435	366	10,145	46	194	309	1,921	1,449	67	3,976	14,121

TABLE NO. 4.—*List of fatal accidents which occurred in the mines of the First Anthracite District for the year ending December 31, 1892.*

Date of Accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location County.	Nature and Cause of Accident.
Jan. 7.	1	John J. Thomas,	Miner,	27	. .	. .	Pancoast,	Lackawanna,	Instantly killed by a fall of top coal.
12.	2	Daniel Connelly,	Coupler,	14	. .	. .	Clifford,	Susquehanna,	Instantly killed by being run over by loaded cars.
13.	3	Andrew Meehew,	Miner,	36	1	4	Jermyn No. 1,	Lackawanna,	Fatally injured by a fall of rock on head. Died in nine days.
23.	4	Michael Smith,	Miner,	43	1	3	Pierce drift,	do.	Instantly killed by fall of top coal.
25.	5	Anthoney Gevrity,	Laborer,	22	. .	. .	Mt. Jessup,	do.	Fatally injured by fall of top slate; died in a week.
Feb. 8.	6	Henry Van Nort,	Driver,	17	. .	. .	Jermyn No. 3,	do.	Fatally injured by fall of top rock in breast; died February 12, from effects of amputation of leg.
9.	7	Dan. Williams,	Door boy,	15	. .	. .	Glenwood,	do.	Instantly killed by cars at the foot of plane.
16.	8	John McGuire,	Miner,	40	1	7	do.	do.	Fatally injured by fall of middle rock; died in two hours.
16.	9	David Price,	Driver,	21	. .	. .	Clinton,	do.	Skull fractured by being kicked by a mule, while he was whipping him.
19.	10	Thomas Caviston,	Miner,	23	. .	. .	Coal Brook tunnel,	do.	Fatally injured by fall of top coal; died in an hour after.
20.	11	Thomas Reese,	Laborer,	18	. .	. .	Jones Simpson,	do.	Instantly killed by fall of roof fire-clay, within three feet of face of gangway, while laboring for his father and uncle.
20.	12	Wm. J. Kelley,	Fire boss,	50	1	4	Richmond No. 3,	do.	Fatally burned by explosion of fire damp; died on the 29th of same month.
23.	13	Isaac Mawson,	Driver,	21	. .	. .	Jermyn No. 3,	do.	Instantly killed by falling under a trip of loaded cars.
Mar. 11.	14	Ant. Spinarontz,	Laborer,	35	1	2	Lackawanna,	do.	Instantly killed by a sulpher ball (or "bell") falling from the roof, striking him on the head.
12.	15	John A. Hart,	Breaker boss,	47	1	2	Mt. Vernon,	do.	Instantly killed by falling from breaker.
28.	16	Michael Rabel,	Laborer,	22	. .	. .	Simpson,	do.	Fatally injured by pulling a piece of middle slate down and getting caught between prop and falling slate.
Apr. 9.	17	Michael Gillan,	Miner,	62	1	3	Leggetts creek,	do.	Fatally injured by flying coal from a shot.
11.	18	Joseph Polog,	Laborer,	37	1	3	Clifford,	Susquehanna,	Arm lacerated from wrist to shoulder while coupling cars at the breaker; died in five days after, from blood poisoning.

16.	19	Andrew Roboots,	Miner,	30	1	2	Simpson,	Lackawanna,	Instantly killed by a fall of top rock; he had his place well propped on one side of breast and, as learned from his laborer was intending to prop the other side with some props he had lying in the breast, but delayed too long.
20.	20	Joseph Heckman,	Laborer,	25	.	.	Edgerton drifts,	do.	Instantly killed by a fall of top rock.
20.	21	Asa Yarns,	Miner,	38	1	8	Edgerton drifts,	do.	Instantly killed by a fall of top rock.
23.	22	Geo. Mescovedger,	Miner,	57	1	4	Jermyn No. 3,	do.	Instantly killed by a fall of top coal; deceased had just fired a shot and was working out the loose coal; he stood with his back against a piece of top coal ten inches thick, four feet wide and five long, this gave way and doubled him up with above result.
27.	23	James Connelly,	Shaft sinker,	31	.	.	Sterrick creek,	do.	Instantly killed by falling down shaft.
27.	24	Thomas Troy,	Shaft sinker,	37	1	9	do. do.	do.	Fatally injured by falling down shaft; died in three days.
May 1.	25	Michael Walker,	Driver,	14	.	.	Pancoast,	do.	Fatally injured by falling under culm car.
12.	26	John Gravecheck,	Laborer,	24	1	.	Lackawanna,	do.	Instantly killed by fall of top coal; deceased had loaded his last car for the day; had cleaned and shoveled back a car of coal ready for next day. No one was present when accident occurred, but it can be inferred from the position in which he was standing, that he took a drill and began barring some top coal, and pulled it down upon himself.
June 16.	27	John E. Baker,	Driver,	17	.	.	Storrs,	do.	Instantly killed by falling under car.
24.	28	Lewis Williams,	Miner,	58	.	.	No. 3 shaft,	do.	Instantly killed by fall of top coal.
26.	29	Michael Scanlon,	Miner,	37	1	5	White Oak, No. 5,	do.	Fatally injured by fall of six-inch bench of coal; died following day.
July 19.	30	Joseph Gonsosick,	Miner,	27	.	.	Dolph,	do.	Fatally injured by fall of top coal; died in a week.
28.	31	Vladick Willcavige,	Laborer,	18	.	.	Forest City slope,	do.	Instantly killed by fall of top rock.
Aug. 16.	32	James McCormick,	Driver,	22	.	.	Storrs,	do.	Fatally injured by fall of rock in gangway; died same day.
17.	33	William Francis,	Miner,	49	1	4	Forest City, No. 2,	do.	Back broken by fall of rock; died December 28.
27.	34	James Lovell,	Miner,	25	.	.	White Bridge slope,	do.	Fatally injured by fall of top coal; died same day.
31.	35	Thomas J. Thomas,	Miner,	36	1	.	Jermyn No. 4,	do.	Fatally injured by flying coal from a shot; died September 3.
Sept. 21.	36	George Frambok,	Laborer,	28	1	3	Pierce tunnel,	do.	Killed by fall of top coal.
28.	37	Joseph Look,	Laborer,	22	.	.	Marvine shaft,	do.	Killed by fall of dividing rock.
30.	38	John Hamilton,	Laborer,	26	1	2	Storrs No. 1,	do.	Fatally injured by fall of top coal; died in one day.
Oct. 8.	39	John Cowalsky,	Laborer,	28	.	.	Richmond's new shaft,	do.	Instantly killed by bucket falling upon him; the hook on hoisting chain broke.
14.	40	William Wescott,	Foot man,	23	1	.	Clifford shaft,	Susquehanna,	Instantly killed by falling into carriage pit; he was crushed by carriage coming down upon him.
25.	41	Simon Ritsko,	Laborer,	22	.	.	Mt. Jessup slope,	Lackawanna,	Instantly killed by fall of top rock.
27.	42	Andrew Valace,	Miner,	34	1	5	Pierce drift,	do.	Fatally injured by fall of top coal; died the following day.
28.	43	Thomas Darrow,	Miner,	37	1	4	Forest City, No. 2,	do.	Instantly killed by fall of top coal.
Nov. 3.	44	Edward Burke,	Laborer,	35	.	.	Powderly,	do.	Fatally injured by fall of top coal; died the following day.
5.	45	Anthony Borosky,	Laborer,	32	1	1	Simpson slope,	do.	Instantly killed by fall of top coal.

TABLE NO. 4.—*Continued.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location County.	Nature and Cause of Accident.
Nov. 9,	46	Michael Mortosky, ...	Laborer, . . .	25	. .	. .	Ontario slope, ...	Lackawanna, ...	Fatally injured by flying coal from a shot that blew through a pillar.
17,	47	Anthony Jankosky, . . .	Miner, ...	28	. .	.	Simpson slope, ...	do.	Killed by fall of dividing rock.
19,	48	James Caffery, ...	Miner, ...	36	. .	. .	Clinton slope, ...	do.	Fatally injured by the premature explosion of a blast; died the following day.
22,	49	Stephen Shernoskey, . . .	Laborer, . . .	30	. .	. .	Glenwood, ...	do.	Instantly killed by a fall of top rock.
23,	50	Michael Horney, ...	Driver, ...	16	. .	. .	Jermyn No. 3, ...	do.	Fatally injured by being squeezed betwen car and rib, by car jumping track; died next day.
28,	51	Charles Palraitus, ...	Laborer, . . .	33	1	2	Leggett's creek, ...	do.	Instantly killed by fall of top rock.
Dec. 1,	52	Michael Dener, ...	Miner, ...	32	. .	. .	Jermyn No. 3, ...	do.	Fatally injured by fall of top coal; died in an hour.
7,	53	David J. Davis, ...	Miner, ...	25	. .	. .	Lacka. Coal Co., Limited,	do.	Instantly killed by fall of rock.
8,	54	Martin Ruddy, ...	Miner, ...	58	1	3	Grassy island, ...	do.	Skull fractured by falling in breast; died in six days.
16,	55	John Phillips, ...	Miner, ...	28	. .	. .	Forest City slope, ...	do.	Instantly killed by fall of top rock.

TABLE 5.—*List of Non-Fatal Accidents which occurred in the mines of the First Anthracite District for the year ending December 31, 1892.*

3-12-92.

Date of accident.	No. of accidents.	NAME OF PERSON.	Occupation.	Age.	Name of Colliery.	Location—County.	Nature and cause of accident.
Jan. 13.	1	John Golden.	Driver.	16	Grassy Island.	Lackawanna.	Slightly injured by a prop falling on him.
13.	2	Neal O. Boyle.	Miner.	..	do.	do.	Struck by a piece of top coal while barring it down.
19.	3	John Zillet.	Slate picker.	17	Simpson.	do.	Leg broken; slipped and fell under car.
21.	4	John Koloski.	Laborer.	28	Lackawanna shaft.	do.	Struck on head by fall of slate.
23.	5	John Merrich.	do.	27	Glenwood.	do.	Struck by a piece of coal from a blast.
27.	6	William Loftus.	do.	40	Sterrick Creek.	do.	Internally injured by falling from breaker.
28.	7	Charles Atherton.	Miner.	26	Pancoast.	do.	Back injured by fall of "slab."
Feb. 6.	8	Patrick Mulchrone.	Driver.	15	Jermyn No. 1.	do.	Leg broken by a mule falling on him.
8.	9	Frank Gomber.	do.	18	Glenwood.	do.	Slightly injured by a fall of rock.
9.	10	Edward Davis.	do.	16	do.	do.	Slightly injured by cars running away on plane.
10.	11	Brian Flaherty.	Miner.	55	Edgerton.	do.	Leg, collar bone and ribs broken by a fall of top coal.
10.	12	David Evans.	Driver.	18	Pancoast.	do.	Slightly injured by being squeezed between car and prop.
16.	13	John Melroy.	Fireman.	25	Clinton.	do.	Shoulder bone broken by culm car dropping upon him.
16.	14	Stanley Olysoski.	Miner.	31	Simpson.	do.	Shoulder injured by a fall of top rock.
19.	15	Charles Jenkins.	do.	35	Jones & Simpson.	do.	Leg broken by prop falling upon him.
23.	16	Michael Dunski.	Laborer.	50	Lackawanna shaft.	do.	Arm broken by fall of top slate.
29.	17	Anthoney Vest.	Driver.	17	Glenwood.	do.	Kicked in the stomach by a mule
Mar. 8.	18	Michael Mallia.	Miner.	50	Olyphant No. 2.	do.	Slightly injured by fall of "bone."
9.	19	George Penkaviage.	Laborer.	25	Grassy Island.	do.	Ankle bone dislocated by being run over by a car.
15.	20	James Skib.	do.	29	Edgerton.	do.	Back injured by fall of rock.
19.	21	Oliver Howard.	Miner.	26	Murrays.	do.	Back injured by fall of rock.
21.	22	Thomas Lee, Jr.	Laborer.	19	Reese & Mosier.	do.	Arm broken by fall of rock.
22.	23	James Mullaney.	Runner.	16	Grassy Island.	do.	Leg crushed by being run over by a car.
28.	24	Michael Usser.	Laborer.	28	Edgerton.	do.	Slightly injured by a fall of top coal.
Apr 7.	25	Thomas Hughes.	Driver.	14	Grassy Island.	do.	Arm badly crushed by faling under cars; amputation necessary.
9.	26	Frank Manley.	Laborer.	30	Jones, Simpson shaft.	do.	Severely cut over the eye by flying coal from a shot that blew through the pillar.
9.	27	Michael Slucko.	do.	24	Mt. Jessup.	do	Leg broken by fall of rock.
11.	28	John Griggs.	Miner	42	do.	do.	Leg badly cut by a fall of rock.
20.	29	William Walker.	Driver.	15	Ontario shaft.	do.	Squeezed between cars; not seriously hurt.
26.	30	Patrick Hoarns.	do.	16	Leggett's Creek.	do.	Finger taken off by being caught between draw bar and hook when trying to unhitch mules.
27.	31	Stephen Yonshock.	Laborer.	21	Grassy Island.	do.	Finger taken off by spragging; this was not his work.
29.	32	Martin Balsgavitch.	Miner.	13	Mt. Jessup.	do.	Leg broken above knee by fall of top coal.

TABLE NO. 5.—*Continued.*

Date of accident.	No. of accidents.	NAME OF PERSON.	Occupation.	Age.	Name of Colliery.	Location—County.	Nature and cause of accident.
May 7,	33	Wodeck Matts,	Door boy,	15	Jermyn No. 3,	Lackawanna,	Both legs broken by being run over by cars; he attempted to jump on front end of car, but slipped and fell under.
9,	34	Andrew Resutko,	Laborer,	35	Pancoast,	do.	Jaw bone broken and face badly cut by a fall of "bone."
9,	35	Frank Novobeisky,	Slate picker,	50	Racket Brook,	do.	Leg broken by getting caught between cars while assisting on the dump.
12,	36	William Phillips,	Miner,	22	Forest City No. 2,	do.	Leg bruised and scalp cut by flying coal from a blast.
12,	37	David Hopkins,	Driver,	17	do.	do.	Leg bruised by being squeezed between cars.
12,	38	George Styles,	Footman,	24	do.	do.	Foot bruised by coal falling down shaft.
12,	39	Michael Slaviski,	Miner,	35	Edgerton,	do.	Collar bone broken by a fall of top coal while in the act of standing a prop which had been displaced.
16,	40	Walter Schoreder,	Driver,	20	Clinton,	do.	Arm fractured by being caught between car and "rib."
17,	41	James Riley,	do.	17	Storrs,	do.	Leg bruised by being caught between car and stretcher.
17,	42	John Schmidt,	Laborer,	40	do.	do.	Severely injured on head and body by a fall of "boney."
17,	43	Michael Sandro,	do.	19	Grassy Island,	do.	Leg broken by falling under cars.
18,	44	Frank Burt,	do.	21	Clinton,	do.	Leg bruised by fall of top coal.
18,	45	John Budd,	Miner,	36	Stroud & Chamberlain,	do.	Leg broken by a fall of top rock.
20,	46	William Jones,	Slate picker,	13	Forest City No. 2,	do.	Back bruised by falling from trestle; he had gone up on the trestle during noon hour, and in some way fell off; he had no right to be there.
20,	47	Michael Crutho,	Headman,	27	Simpson,	do.	Leg broken by falling under car while in the act of unhooking rope.
23,	48	Martin Danblewski,	Laborer,	25	Marvine,	do.	Face badly cut by being knocked down by a fall of top coal.
28,	49	Thomas J. Simons,	Miner,	40	No. 1 slope,	do.	Leg broken by being struck by rope on slope.
31,	50	Thomas Swanick,	Runner,	19	Pancoast,	do.	Leg broken by a piece of coal sliding against it.
31,	51	Vincent Schroder,	Laborer,	23	Dolph,	do.	Badly bruised by a fall of "slab."
June 2,	52	Dennis Doyle,	do.	20	Coal Brook,	do.	Foot bruised by being caught between car and stretcher.
4,	53	Thomas Coravan,	Miner,	35	Olyphant No. 2,	do.	Leg broken by being thrown under car.
7,	54	Michael Shelusky,	Slate picker,	15	Jermyn No. 4,	do.	Foot crushed by being caught in mud screen.
7,	55	John Kusick,	Driver,	17	Storrs,	do.	Face cut by being kicked by a mule.
7,	56	Patrick Carman,	Laborer,	19	Eddy Creek,	do.	Foot crushed by car jumping from the track.
24,	57	John Cook,	do.	27	Riverside,	do.	Back injured by a fall of roof.
27,	58	Michael Gillgalon,	Miner,	50	White Oak No. 3½,	do.	Slightly injured by a fall of coal sliding upon him.
28,	59	Stephen Croker,	Laborer,	22	Grassy Island,	do.	Leg broken by flying coal from shot.
30,	60	Frank Gunners,	Miner,	33	No. 1 shaft,	do.	Back and hips bruised by fall of rock.

July 2,	61	Amos Hamphlet,	Driver,	17	Storrs,	do.	Leg broken by falling under car.
2,	62	James Craig,	Laborer,	25	Sturges,	do.	Back bruised by being struck by empty cars.
6,	63	Patrick Ruvne,	Miner,	55	Pancoast,	do.	Head injured by fall of top coal.
7,	64	Thomas Oliver,	do.	28	Storrs,	do.	Severely burned by explosion of gas.
7,	65	Percy Hamphlet,	Laborer,	23	do.	do.	Slightly burned by explosion of gas.
7,	66	John Eagan,	do.	25	do.	do.	Slightly burned by explosion of gas.
7,	67	John Shenesky,	do.	35	do.	do.	Slightly burned by explosion of gas.
							These four men were burned by an explosion of gas caused by Thomas Oliver going to face of gangway with naked light, after he had been forbidden by the mine foreman to do so, as a small body of gas had been found there that morning.
9,	68	Elias Wilkinson,	Miner,	27	Lackawanna shaft,	do.	Arm broken; he was taking block from front wheel, the car dropped from the track, and caught his arm.
11,	69	Daniel Melvin,	Tracklayer,	34	Forest City No. 2,	do.	Back severely injured by falling from trestle.
13,	70	Patrick McClean,	Miner,	27	Sturges,	do.	Back severely injured by fall of top coal and rock.
14,	71	George Buckland,	Oiler,	19	Clifford,	Susquehanna,	Slightly injured by being thrown down by belt.
22,	72	James Carden,	Miner,	65	Clinton,	Lackawanna,	Slightly injured by fall of top coal.
22,	73	Michael Burdick,	Laborer,	19	do.	do.	Slightly injured by fall of top coal.
23,	74	Joseph Kelnasky,	Miner,	30	Jermyn No. 3	do.	Leg broken by fall of top coal.
25,	75	William Jones,	do.	48	Storrs,	do.	Burned on face and arms by explosion of gas.
27,	76	Frank Younasky,	Laborer,	40	do.	do.	Back severely injured and legs and arms bruised by fall of top coal.
Aug. 13,	77	John Puthusky,	do.	24	Jones, Simpson & Co.,	do.	Leg broken by coal falling upon it from car.
15,	78	Joseph Lynch,	Miner,	31	Edgerton,	do.	Ribs broken by being struck by a lever.
17,	79	Joshua Taylor,	Driver,	17	Erie shaft,	do.	Head cut and hips bruised by fall of rock.
19,	80	Albert King,	do.	21	Mt. Jessnp slope,	do.	Leg broken by running against a car.
31,	81	William Miles,	Miner,	33	Jermyn No. 4,	do.	Cut on head and shoulders by flying coal from a shot.
31,	82	Wodek Parchansky,	Laborer,	25	do.	do.	Cut on head by flying coal from a shot.
Sept. 3,	83	William Painter,	Driver,	16	Forest City No. 2,	do.	Jaw bone broken by a kick from a mule.
3,	84	John Pilner,	Laborer,	19	Simpson slope,	do.	Arm badly crushed by a car running over it.
9,	85	John Francovedge,	Miner,	40	Jermyn No. 4,	do.	Burned on face by a premature blast.
16,	86	Andrew Barnosky,	Laborer,	26	Lackawanna shaft,	do.	Collar bone broken by fall of slate.
17,	87	Michael Nealon,	Footman,	26	Eddy Creek shaft,	do.	Foot badly bruised by being caught betwe n cage and rail.
27,	88	William Seymons,	Miner,	38	Glenwood,	do.	Hand cut off by a fall of "buck."
28,	89	Patrick Hadgins,	Driver,	16	White Bridge,	do.	Arm broken by a kick from a mule.
Oct. 4,	90	Jonah Beynon,	Miner,	51	Richmond No. 3,	do.	Ribs broken and severely bruised by a premature blast.
15,	91	Patrick Walker,	do.	46	Erie shaft,	do.	Leg broken by a fall of "buck" and coal.
15,	92	Jacob Sedden,	Laborer,	30	Edgerton,	do.	Leg broken by fall of coal from pillar.
19,	93	Henry Robinson,	Runner,	17	Clinton slope,	do.	Leg broken by being caught between car and rib.
22,	94	John Sears,	Slate picker,	15	Ontario No. 1,	do.	Arm fractured by being caught in shifting.
24,	95	Andrew Moran,	Miner,	36	Simpson,	do.	Hip dislocated by a fall of rock.
25,	96	Patrick Johnson,	Footman,	19	Jones, Simpson & Co.,	do.	Leg broken by empty car jumping from track.
31,	97	Patrick Clark,	Miner,	45	Erie shaft,	do.	Hip dislocated by a fall of top rock.
Nov. 1,	98	Benjamin Williams,	Rockman,	40	Storr's shaft,	do.	Leg broken by drilling machine falling upon it.
3,	99	William Hill,	Runner,	16	Eddy Creek,	do.	Leg and three ribs broken by fall of slate.
3,	100	William Marshman,	Miner,	28	Marshwood,	do.	Leg broken and back injured by fall of coal.
9,	101	Owen Flynn,	do.	47	Ontario No. 2,	do.	Slightly injured by flying coal from a shot.
9,	102	William Smith,	Laborer,	28	do.	do.	Slightly injured by flying coal from a shot.
9,	103	Frank Miller,	do.	30	do.	do.	Slightly injured by flying coal from a shot.
12,	104	William Killen,	Miner,	37	White Bridge,	do.	Collar bone broken by being caught between car and rib.
15,	105	Thomas Langan,	Headman,	19	Grassy Island,	do.	Finger taken off while spragging.
19,	106	William Nolan,	Laborer,	24	Clinton,	do.	Slightly injured by prematnre explosion of blast.
26,	107	Alex. Lofceshinski,	do.	24	Lackawanna shaft,	do.	Arm broken and head badly cut by fall of bone coal.

TABLE NO. 5.—*Continued.*

Date of accident.	No. of accidents.	NAME OF PERSON.	Occupation.	Age.	Name of Colliery.	Location—County.	Nature and cause of accident.
Dec. 1.	108	Charles Jaskey.	Miner.	26	Pierce drift.	Lackawanna.	Injured internally; squeezed between car and prop.
3.	109	Patrick Walsh.	do.	55	Gypsy Grove.	do.	Hip dislocated by fall of roof.
6.	110	Edward Williams.	do.	35	Lackawanna shaft.	do.	Leg broken by fall of coal.
7.	111	John Williams.	do.	31	do.	do.	Back injured by fall of top rock.
8.	112	Lewis Jenkins.	Driver.	17	Pancoast.	do.	Badly cut on face by a kick from a mule.
9.	113	James Coney.	Runner.	19	Grassy Island.	do.	Ankle dislocated; caught between cars.
24.	114	Alex. Cosseski.	Laborer.	20	Forest City No. 2.	do.	Back injured by a fall of top rock.
31.	115	Edward Maynard.	Driver.	15	Jermyn No. 1.	do.	Small bone of arm fractured by being squeezed between car and stretcher.

SECOND ANTHRACITE DISTRICT.

(LACKAWANNA COUNTY.)

OFFICE OF THE INSPECTOR OF MINES,
SCRANTON, PA., *March 31, 1893.*

HON. THOMAS J. STEWART,
Secretary of Internal Affairs:

SIR: In compliance with article two, section nine, of the anthracite mine laws, approved June 2, 1891, I have the honor of herewith presenting my annual report as Inspector of Mines of the Second Anthracite District for the year ending December 31, 1892. The accompanying tables show in detail the condition of the mines, the quantity of coal mined and shipped, the condition of ventilation, also the condition of boilers when last examined.

The quantity of coal produced for the year was 6,013,537.19 tons, the quantity shipped was 5,461,843.09 tons, the number of tons consumed at collieries was 346,276.07, and the number of tons sold at mines was 205,418.03.

The number of fatal accidents was 33, leaving 13 widows and 45 orphans.

There were very few improvements except what was actually necessary for the production of coal.

SYNOPSIS OF REPORT FOR YEAR ENDING DECEMBER 31, 1892.

Number of mines in district,	42
Number of breakers,	35
Average number of days worked,	185.1
Total number of employes in and about the mines,	14,111
Number of tons of coal produced,	6,013,537.19
Number of tons of coal shipped,	5,461,843.09
Number of tons of coal consumed at collieries,	346,276.07
Number of tons of coal sold at collieries,	205,418.03
Number of tons of coal produced for each miner,	1,723.07
Number of tons of coal produced for each miner and miner's laborer,	886.95

Number of tons of coal produced for each employe in mines,	606.94
Number of tons of coal produced for each employe of collieries,	416.65
Number of fatal accidents,	33
Number of tons of coal produced for each fatal accident,	182,228.40
Number of non-fatal accidents,	181
Number of tons of coal produced for each non-fatal accident,	33,223.96
Number of wives left widows from accidents at collieries in 1892,	13
Number of tons of coal produced for each widow,	462,733.63
Number of orphans left from accidents,	45
Number of tons of coal produced for each orphan,	133,634.16

There were 205,192 kegs of powder used in mining 6,013,537.19 tons of coal in the year 1892, which would give 29,306 tons of coal for each keg of powder used. There are 1,873 horses and mules and 18 mine locomotives having a horse power of 1,578, making a total horse power of 3,451 which are used for the transportation of coal in and about the mines and collieries. There are 597 steam boilers which supply steam for 491 hoisting, breaker, fan and pumping engines with 27,275 horse power, also 197 donkey pumps with 5,953 horse power.

The Delaware, Lackawanna and Western Railroad Company operate 15 and individual companies and individual operators 20 breakers; total, 35 breakers for the preparation of coal.

There are 48 fans and 3 furnaces for the purpose of ventilation.

Respectfully submitted.

PATRICK BLEWITT,
Inspector of Mines.

IMPROVEMENTS AT THE "WILLIAM A" COLLIERY.

On the 1st of November, 1892, we started running an electrical pump down the slope workings. Having had considerable difficulty owing to the heat from the steam pipe and exhaust steam from the pump, with the roof for over 1,000 feet, we decided to see what there was in the claims of the electrical companies, and gave the order to the General Electric Company.

They supplied us with a ten-horse power generator, which is belted through a countershaft to a small vertical single cylinder engine 8x12, running about 130 revolutions per minute. The generator runs 1,600 revolutions per minute, and at this speed generates a current with 220 volts potential.

From the engine house two heavily insulated wires go down the shaft which is about 160 feet deep; the gangways at the foot and at the foot of the hoisting shaft are lighted with sixteen-candle power incandescent lamps; the main wire goes to the shaft pump and there are two sixteen-candle power lamps in the pump house. There is also a switch by which the current can be prevented from going into the workings. The pump is a six and a half inch diameter by eight inch stroke, three plunge, single acting one, and the main frame is mounted on wheels of the guage of the mine track, so that the pump can be moved at any time to any other place in the mine. The motor driving the pump is five-horse power, and is geared to run the plungers about forty-two revolutions per minute, at which speed it will lift about 150 gallons per minute.

The pump is now located about 1,700 feet from the generator, but it will be moved about all over the mine, as the water may require its location to be changed. The pump and motor weigh about 6,600 pounds, and will run upon any cage in the Anthracite region without anything being moved. The total height over all is forty-eight feet, and this can be reduced by taking off the large gears, if it is found necessary to take the pump into low places.

This machinery has given the most perfect satisfaction from the start, and there does not appear to be any reason why it should not continue to do so.

The following named persons passed a satisfactory examination and were recommended to have certificates issued to them qualifying them to hold the position of mine foremen:

No.	NAMES.	Postoffice address.		
1	Patrick H. O'Hara,	Dunmore,	Lackawanna county,	Pa.
2	John Moffit,	do.	do.	do.
3	Patrick H. Mongan,	do.	do.	do.
4	Edward D. Jones,	Scranton,	do.	do.
5	David P. Birtley,	do.	do.	do.
6	Alexander Frew,	Olyphant,	do.	do.
7	Jonathan Vipond,	Scranton,	do.	do.
8	Joseph V. Birtley,	do.	do.	do.
9	Finlay Ross,	do.	do.	do.
10	Martin Loftus,	do.	do.	do.
11	Samuel T. Jones,	do.	do.	do.
12	James M. Eaton,	Archbald,	do.	do.
13	Thomas Carson,	Scranton,	do.	do.
14	John J. Loftus,	do.	do.	do.
15	Alexander Aikman,	do.	do.	do.
16	James A. Evans,	do.	do.	do.
17	Henry P. Davis,	do.	do.	do.
18	Elijah Dagger,	do.	do.	do.
19	John H. Powell,	do.	do.	do.
20	Wm. McMyne,	Carbondale,	do.	do.
21	James Nicol,	Archbald,	do.	do.
22	William Dunstan,	Carbondale,	do.	do.
23	David W. Moser,	Scranton,	do.	do.
24	John J. Karney,	Archbald,	do.	do.
25	Joseph Tennis,	Jermyn,	do.	do.
26	Frank Zimmerman,	Scranton,	do.	do.
27	Thomas Eynon,	do.	do.	do.
28	John Hale,	do.	do.	do.

RECOMMENDED FOR CERTIFICATES QUALIFYING FOR MINE FOREMAN—*Continued.*

No.	NAMES.	Postoffice address.
29	Edward James,	Scranton, Lackawanna county, Pa.
30	Lewis Roberts,	do. do. do.
31	John Waterfield,	Carbondale, do. do.
32	Evan J. Evans,	Scranton, do. do.
33	Benjamin Maxey,	Forest City, Susquehanna do.
34	Andrew P. Patton,	Olyphant, Lackawanna do.
35	Patrick Riley,	Scranton, do. do.
36	Martin Gallagher,	do. do. do.
37	Thomas Battle,	Archbald, do. do.
38	John W. White,	Forest City, Susquehanna do.
39	David Williams,	Carbondale, Lackawanna do.
40	Henry J. Brennan,	do. do. do.
41	James Young,	Dunmore, do. do.
42	Morgan Thomas,	Carbondale, do. do.
43	George Herron,	Scranton, do. do.
44	Matthew Gray,	Dunmore, do. do.
45	Michael I. Murray,	do. do. do.
46	Richard Williams,	Scranton, do. do.
47	Peter S. Malea,	Dunmore, do. do.
48	W. H. Walters,	Olyphant, do. do.
49	Richard Evans,	Scranton, do. do.
50	John Scott,	Carbondale, do. do.
51	Thomas Rotheroe,	Scranton, do. do.
52	Joseph P. Phillips,	do. do. do.
53	James McAndrew,	Carbondale, do. do.
54	David Z. Davis,	Scranton, do. do.
55	Wm. M. Harris,	do. do. do.
56	Benjamin Griffiths,	do. do. do.
57	John A. James,	do. do. do.
58	Thomas G. Jones,	do. do. do.
59	David C. Phillips,	do. do. do.
60	Juskin T. Reese,	do. do. do.
61	James M. Thomas,	do. do. do.
62	Wm. J. Thomas,	do. do. do.
63	Reese A. Phillips,	do. do. do.
64	David S. Evans,	do. do. do.
65	Samuel Lewis,	do. do. do.
66	Thompson Pettigrew,	Olyphant, do. do.
67	Andrew Smith,	Scranton, do. do.
68	Thomas Patten,	Olyphant, do. do.
69	Thomas Francis Battle,	Archbald, do. do.
70	William Heyes,	Olyphant, do. do.
71	William H. Davis,	Scranton, do. do.
72	Henry W. Davis,	do. do. do.
73	Evan T. Morgan,	do. do. do.
74	Thomas Mooney,	Carbonale, do. do.
75	Wm. J. Glinnan,	do. do. do.
76	Matthew Cavanagh,	do. do. do.
77	Thomas F. Cullen,	Scranton, do. do.
78	David E. Lewis,	Olyphant. do. do.
79	Michael Barbour,	Carbondale, do. do.
80	James W. Smith,	Pickville, do. do.
81	James White,	Forest City, Susquehanna do.
82	Thomas R. Young,	Dunmore, Lackawanna do.
83	Anthony Gillespie,	Olyphant, do. do.
84	David B. Evans,	Scranton, do. do.
85	Christopher Vickers,	Dunmore, do. do.
86	Simpson Wharton,	Scranton, do. do.
87	Wm. P. Griffiths,	Minooka, do. do.
88	Martin Morris,	Scranton, do. do.
89	George Gleason,	do. do. do.
90	Thomas J. Williams,	do. do. do.
91	Joseph D. Lloyd,	do. do. do.
92	John P. Morgan,	do. do. do.
93	Simon Thomas,	Throop, do. do.
94	Henry E. Harris,	Minooka, do. do.
95	John R. Johns,	do. do. do.

RECOMMENDED FOR CERTIFICATES QUALIFYING FOR MINE FOREMEN—*Continued.*

No.	NAMES.	Postoffice address.
96	Richard H. Williams,	Scranton, Lackawanna county Pa.
97	Wm. P. Morgan,	do. do. do.
98	William Evans,	do. do. do.
99	John I. Williams,	do. do. do.
100	Howell Harris,	do. do. do.
101	John W. Reed,	Dunmore, do. do.
102	John F. O'Hara,	Priceburg, do. do.
103	E. P. Davis,	Scranton, do. do.
104	Isaac D. Williams,	Priceburg, do. do.
105	Daniel Dorris,	Peckville, do. do.
106	Phillip McCabe,	Carbondale, do. do.
107	William Bryden,	Forest City, Susquehanna do.
108	Robert Martin,	Scranton, Lackawanna do.
109	Wm. Brown,	Avoca, Luzerne do.
110	George P. Davis,	Marshwood, Lackawanna do.
111	Michael M. Walsh,	Jermyn, do. do.
112	David Bell,	Carbondale, do. do.
113	Henry Chapman,	do. do. do.
114	Thomas Jordan,	do. do. do.
115	Thomas Langan,	Peckville, do. do.
116	James Graham,	do. do. do.
117	Wm. H. Tennis,	Jermyn, do. do.
118	James R. Wilson,	Dunmore, do. do.
119	Evan J. Williams,	Scranton, do. do.
120	Isaac S. Jones,	do. do. do.
121	Patrick F. Campbell,	do. do. do.
122	John R. Jones,	do. do. do.
123	Thomas Connors,	do. do. do.
124	Henry G. Davis,	do. do. do.
125	Llewellin L. Jones,	do. do. do.
126	John B. Owens,	do. do. do.
127	Lewis H. Harris,	do. do. do.
128	Henry W. Evans,	do. do. do.
129	Joseph Reese,	Scranton, No. 104 Ave. A, Lackawanna county, Pa.
130	Patrick F. O'Hara,	Minooka, Lackawanna county Pa.
131	James Loftus,	Scranton, do. do.
132	Richard J. Protheroe,	do. do. do.
133	Samuel Saville,	do. do. do.
134	Samuel Oakley,	do. do. do.
135	Thomas J. Williams,	Taylor, do. do.
136	Edward F. McGlynn,	Scranton, do. do.
137	Roland Thomas,	do. do. do.
138	William Gray,	do. do. do.
139	Henry Miller,	do. do. do.
140	John Francis,	Taylor, do. do.
141	Thomas G. Williams,	Scranton, do. do.
142	William Jenkins,	do. do. do.
143	George Watson,	do. do. do.
144	Thomas B. Evans,	do. do. do.
145	Sydney Baker,	Taylor, do. do.
146	Wm. T. Williams,	Scranton, do. do.
147	Henry C. Hood,	Taylor, do. do.
148	Henry Birback,	Scranton, do. do.
149	Patrick M. McCormick,	Dunmore, do. do.
150	Patrick Gallagher,	Old Forge, do. do.
151	Stephen Dyer,	Scranton, do. do.
152	John Von Bergen,	do. do. do.
153	Wm. R. Evans,	do. do. do.
154	Ebeneezer R. Davis,	do. do. do.
155	Thos. Cosgrove,	Old Forge, do. do.
156	Benjamin Hughes,	Scranton, do. do.
157	Thomas D. Davis,	do. do. do.
158	Thomas W. Phillips,	do. do. do.
159	Patrick S. Coyne,	Old Forge, do. do.
160	Thomas R. McManus,	Scranton, do. do.

The following named persons passed satisfactory examinations and were recommended to the Secretary of Internal Affairs to have certificates of qualifications issued to them to enable them to act as assistant mine foremen:

No.	NAME.	Postoffice address.
1	William Walker.	
2	Thomas Connor,	Scranton, Lackawanna county, Pa.
3	James L. Barr,	Present address, Scotland.
4	Thomas B. Evans,	Scranton, Lackawanna county, Pa.
5	Thomas L. Lewis,	do. do. do.
6	John Indian,	Throop, do. do.
7	John E. Kelley,	Peckville, do. do.
8	George Watson,	Scranton, do. do.
9	G. W. Walters,	Olyphant, do. do.
10	Edward McGlyme,	Scranton, do. do.
11	C. A. Perry,	Olyphant, do. do.
12	Daniel M. Davis,	Carbondale, do. do.
13	Henry Burbeck,	Scranton, do. do.
14	Alexander W. McDonnell.	
15	David R. Richards,	do. do. do.
16	William Gray,	do. do. do.
17	Sydney Baker,	Taylor, do. do.
18	David E. Thomas,	Scranton, do. do.
19	Patrick Campbell,	do. do. do.
20	Patrick Gallagher,	Old Forge, do. do.
21	Samuel C. Jones,	do. do. do.
22	James Jeremiah,	Scranton, do. do.
23	Henry C. Hood,	Taylor, do. do.
24	Henry Miller,	Scranton, do. do.
25	Wm. J. Hoskins,	Minooka, do. do.
26	John Francis,	do. do. do.
27	John R. Jones,	Scranton, do. do.
28	Joshua Jones	do. do. do.
29	Henry W. Evans,	do. do. do.
30	Obed Jenkins,	do. do. do.
31	Richard E. Williams,	do. do. do.
32	Henry J. Davis,	do. do. do.
33	Griffith Williams,	do. do. do.
34	Stephen Dyer,	do. do. do.
35	David W. Lewis,	do. do. do.
36	Luke Evans,	do. do. do.
37	Lewis P. Hughes,	Avoca, Luzerne county, Pa.
38	Frederick Edgar Davis,	Scranton, Lackawanna county, Pa.
39	W. E. Lewis,	do. do. do.
40	Thomas B. Evans,	do. do. do.
41	John W. Evans,	do. do. do.
42	John C. Morris,	do. do. do.
43	Job Jenkins,	do. do. do.
44	Joseph Reese,	do. do. do.
45	Thomas Connors,	do. do. do.
46	Richard M. Reese,	do. do. do.
47	William Prestwood,	do. do. do.
48	Richard J. Protheroe,	do. do. do.
49	James Loftus,	do. do. do.
50	George W. Powell,	do. do. do.
51	Isaac Price,	do. do. do.
52	Wm. C. Powell,	do. do. do.
53	Roland Thomas,	do. do. do.
54	John S. Lewis,	do. do. do.
55	George Watson,	do. do. do.
56	Evan B. Reese,	do. do. do.
57	George C. Jones,	do. do. do.
58	Samuel D. Phillips,	do. do. do.
59	John R. Hughes,	do. do. do.
60	Thomas G. Williams,	do. do. do.
61	F. J. Weaver,	do. do. do.

CERTIFICATES OF QUALIFICATION FOR ASSISTANT MINE FOREMEN—*Continued.*

No.	NAME.	Postoffice address.		
62	James B. Jones,	Scranton,	Lackawanna	county, Pa.
63	Owen Watkins,	Taylor,	do.	do.
64	Samuel Rogers,	Scranton,	do.	do.
65	John R. Price,	Taylor,	do.	do.
66	David H. Price,	Scranton,	do.	do.
67	Peter Comptess,	do.	do.	do.
68	Wm. R. Richards,	do.	do.	do.
69	Samuel Saville,	do.	do.	do.
70	Thomas H. Jenkins,	Taylor,	do.	do.
71	Wm. W. Reese,	do.	do.	do.
72	Daniel Thomas,	Scranton,	do.	do.
73	Isaac S. Jones,	do.	do.	do.
74	David Walsh,	Minooka,	do.	do.
75	James A. John,	do.	do.	do.
76	David E. Edwards,	Scranton,	do.	do.
77	Julian Cooper,	do.	do.	do.
78	Evan S. Davis,	do.	do.	do.
79	Robert Owens,	do.	do.	do.
80	Benjamin Lloyd,	do.	do.	do.
81	David E. Thomas,	do.	do.	do.
82	Thomas J. Freeman,	do.	do.	do.
83	Henry S. Davis,	do.	do.	do.
84	James H. Brace,	do.	do.	do.
85	Edmund Moses,	do.	do.	do.
86	David W. Edwards,	do.	do.	do.
87	David D. Griffiths,	Taylor,	do.	do.
88	David A. Davis,	Scranton,	do.	do.
89	Wm. H. Thomas,	do.	do.	do.
90	Thomas H. Williams,	do.	do.	do.
91	Griffith E. Powell,	do.	do.	do.
92	John R. Francis,	Minooka,	do.	do.
93	David F. Davis,	Scranton,	do.	do.
94	Henry J. Davis,	do.	do.	do.
95	John D. Griffiths,	do.	do.	do.
96	John R. Richards,	do.	do.	do.
97	David A. Jones,	do.	do.	do.
98	Morgan James,	do.	do.	do.
99	Edward Howell,	do.	do.	do.
100	Thomas C. Davis,	do.	do.	do.
101	George Robinson,	Dunmore,	do.	do.

TABLE NO. 1.—*Giving names and location of collieries, names of operators and superintendents, with their postoffice address, also names of mine foremen and outside foremen, for year ending December 31, 1892.*

NAMES OF COLLIERIES.	Where located in city, borough or township—Lackawanna county.	By whom operated.
Archbald mines	Lackawanna township	Delaware, Lackawanna and Western Railroad Company
Bellevue shaft mines	do. do.	do. do. do. do. do.
Bellevue slope mines	do. do.	do. do. do. do. do.
Brisbin shaft mines	Third ward, Scranton city	do. do. do. do. do.
Cayuga shaft mines	do. do.	do. do. do. do. do.
Central shaft mines	Fifteenth ward, Scranton city	do. do. do. do. do.
Continental shaft mines	Lackawanna township	do. do. do. do. do.
Dodge shaft mines	do. do.	do. do. do. do. do
Holden shaft mines	do. do.	do. do. do. do. do.
Hampton shaft mines	do. do.	do. do. do. do. do.
Hyde Park shaft mines	Fifth ward, Scranton city	do. do. do. do. do.
Manville shaft mines	Thirteenth ward, Scranton city	do. do. do. do. do.
Oxford shaft mines	Fifth ward, Scranton city	do. do. do. do. do.
Pyne shaft mines	Lackawanna township	do. do. do. do. do.
Sloan shaft mines	do. do.	do. do. do. do. do.
Taylor shaft and drift mines	do. do.	do. do. do. do. do.
Tripp and No. 2 Diamond mines	Twenty-first ward, Scranton city	do. do. do. do. do.
Dickson shaft mines	Second do. do.	Delaware and Hudson Canal Company
Von Storch shaft mines	do. do. do.	do. do. do.
Von Storch slope mines	do. do. do.	do. do. do.
Manville shaft mines	Thirteenth do. do.	do. do. do.
Capouse shaft mines	Twenty-first do. do	Lackawanna Iron and Coal Company
Pyne Brook shaft mines	Seventh do. do.	do. do. do.
Meadow Brook shaft mines	Twentieth do. do.	William Connell & Co.
Meadow Brook tunnel mines	do. do. do.	do. do.
National slope and shaft mines	do. do. do.	do. do.
Stafford shaft mines	Lackawanna township	do. do.
Clark's tunnel mines	Third ward, Scranton city	James Flynn
Church slope mines	Second ward. do.	Church Coal Company, Limited
Providence Coal Company shaft mines	do. do.	Produce Coal Company, Limited
Mount Pleasant shaft mines	Fourteenth ward. do.	William T. Smith
Spencer's shaft mines	Dunmore borough	A. D. & F. M. Spencer
Green Ridge slope mines	do. do.	O. S. Johnson
No. 5 Shaft, Dunmore, mines	do. do.	Pennsylvania Coal Company
No. 1 Shaft, Dunmore, mines	do. do.	do. do. do.
Old Forge No. 1 shaft mines	Old Forge township	do. do. do.
Old Forge No. 2 shaft mines	do. do.	do. do. do.
Jermyn No. 1 shaft mines	do. do.	John Jermyn
Jermyn No. 2 shaft mines	do. do.	do. do.
Sibley shaft mines	do. do.	James C. McClure & Co.
Austin drift mines	do. do.	Austin Coal Company
William A. mines	do. do.	William Connell & Co.
Greenwood No. 1 mines	Lackawanna township	Greenwood Coal Company, Limited
Greenwood No. 2 mines	do. do.	do. do. do.

TABLE NO. 1.—*Continued.*

NAMES OF COLLERIES.	Names of general officers.	Name of mine foreman.	Names of outside foremen.
Archbald mines,		Joseph D. Lloyd,	John Fern.
Bellevue shaft mines,		John Hall; Thos. E. Williams, assistant,	B. C. Green.
Bellevue slope mines,		David Z. Davis,	do. do.
Brisbin shaft mines,		Frank Zimmerman,	E. H. Evans.
Cayuga shaft mines,		John P. Morgan,	G. S. Decker.
Central shaft mines,		Lewis Roberts,	Fred. Peters.
Continental shaft mines,	William R. Storrs, general coal agent.	R. H. Williams,	J. F. Green.
Dodge shaft mines,	William H. Storrs, assistant coal agent,	Edward James,	S. M. Ives.
Holden shaft mines,	Benjamin Huges, general mine superintendent,	E. J. Evans,	H. A. Fillmore.
Hampton shaft mines,	Thos. D. Davies and Thos. W. Phillips, asst. mine supts.,	Elijah Dagger; Wm. W. Harris, asst.,	J. H. Hoffman.
Hyde Park shaft mines,	John T. Snyder, chief engineer mine department,	David W. Mosier,	E. E. Thomas.
Manville shaft mines,	Townsend Poor, master mechanic,	Thomas J. Williams,	B. B. Atherton.
Oxford shaft mines,		Reese A. Phillips and David S. Evans,	William B. Thornton.
Pyne shaft mines,		James M. Thomas,	Adam Reinhardt.
Sloan shaft mines,		Lewis Roberts and Henry P. Davies,	Fred. Peters.
Taylor shaft and drift mines,		John R. Johns and Henry E. Harris,	John P. Cooper.
Tripp and No. 2 Diamond mines,		Jas. A. Evans; Wm. R. Evans, assistant,	William Langstaff.
Dickson shaft mines,	A. H. Vandling, superintendent coal department,	Alexander Aikman,	William Richmond.
Von Storch shaft mines,	J. M. Chittenden, outside superintendent,	E. D. Jones,	Charles W. Zeigler.
Von Storch slope mines,	Andrew Nicol, mine superintendent,	Martin Loftus,	do. do.
Manville shaft mines,	Christian Shearer, mining engineer,	Thomas J. Williams,	B. B. Atherton.
Capouse shaft mines,	Reese G. Brooks, mine superintendent,	Wm. P. Morgan; Jos. Reese, assistant,	D. J. Bevan.
Pyne Brook shaft mines,	C. Mattes, mining engineer,	Jno. H. Powell; G. C. Jones, assistant,	Henry Hess.
Meadow Brook shaft mines,	William Connell, mine superintendent,	Samuel T. Jones,	Malachi L. Coyne.
Meadow Brook tunnel mines,	William Monsey, mining engineer,	do. do.	do. do.
National slope and shaft,	do. do. do.	do. do.	Frank Sleppy.
Stafford shaft mines,	do. do. do.	Evan T. Morgan,	do. do.
Clark's tunnel mines,	James Flynn, mine superintendent,	James Flynn,	James Flynn.
Church slope mines,	M. F. Dolphin, mine superintendent,	. . . . .	M. F. Dolphin.
Providence Coal Company shaft mines,	do. do. do.	J. J. Gibbons,	do. do.
Mount Pleasant shaft mines,	Thomas Sprague, mine superintendent,	John Von Bergen,	Thomas Sprague.
Spencer's shaft mines,	A. D. and F. M. Spencer, mine superintendents,	P. H. Mongan; S. J. Knapp, assistant,	A. D. and F. M. Spencer.
Green Ridge slope mines,	O. S. Johnson, mine superintendent,	Thomas H. Jones,	Wm. S. Boyd Sons.
No. 5 Shaft, Dunmore mines,	James Young, mine superintendent.	John W. Reid,	Christopher Moffat.
No. 1 Shaft, Dunmore mines,	do. do. do.	do do.	do. do.
Old Forge No. 1 shaft mines,	Anthony Horan, mine superintendent,	Charles Aikman,	Richard Howard.
Old Forge No. 2 shaft mines,	do. do. do.	Alexander Allen,	do. do.
Jermyn No. 1 shaft mines,	J. J. Jermyn, mine superintendent,	Samuel Baker,	Joseph Merritt.
Jermyn No. 2 shaft mines,	do. do.	Simpson Wharton,	John J. Daniels.
Sibley shaft mines,	James C. McClure, mine superintendent,	Thomas P. Cosgrove,	W. F. Courtwright.
Austin drift mines,	Austin Moore, mine superintendent,	Patrick S. Coyne,	Anthony J. Thompson.
William A. mines,	William Connell, mine superintendent,	David W. Evans,	Patrick J. Judge.
Greenwood No. 1 mines,	W. G. Thomas, mine superintendent,	H. J. Brooks,	T. J. McCarthy.
Greenwood No. 2 mines,	do. do.	John Lovering,	T. R. Lovering.

TABLE 2.—*Giving the total number of tons of coal mined, shipped, etc., at and from each colliery, number of days worked, number of employes, number of persons fatally injured, number of kegs of powder used, etc., etc., in the Second Anthracite District, for the year ending December 31st, A. D. 1892.*

Number of collieries.	NAME OF COLLIERIES.	Total number of tons of coal produced.	Total number of tons of coal shipped to market.	Total number of tons of coal consumed at mines.	Total number of tons of coal sold at mines.	Number of days worked.	Number of persons employed.	Number of fatal accidents.	Number of widows.	Number of orphans.	Number of kegs of powder used.	Number of steam boilers.	Number of horses and mules.	Number of mine locomotives.	Horse power of mine locomotives.	Number of breaker fan and hoisting engines also pumping engines.	Horse power of breaker fan and hoisting engines also pumping engines.
1.	Archbald shaft mines,	196,333.17	186,115.17	9,125	1,093	176.6	505	2	. .	5	5,965	14	75	. .	. . .	9	453
2.	Bellevue shaft mines,	243,565.09	222,972.09	14,600	5,993	185.3	559	. .	. .	. .	6,896	24	83	1	94	29	1,581
3.	Bellevue slope mines,																
4.	Brisbin shaft mines,	197,243.11	185,446.11	9,900	1,897	180.1	445	1	1	7	4,565	17	59	1	74	17	809
5.	Cayuga shaft mines,	200,896.08	180,093.08	18,000	2,803	170.7	431	2	1	4	5,324	18	60	1	94	14	1,335
6.	Central shaft mines,*	. . . . .	. . . . .	. . . . .	. . . . .	180.2	. . .	. .	. .	. .	. . .	31	. .	2	168	2	168
7.	Continental shaft mines,	181,727.09	174,147.09	5,400	2,180	180.3	463	2	. .	. .	5,262	15	82	. .	. . .	13	869
8.	Dodge shaft mines,	167,634.08	155,867.08	10,000	1,827	185.8	387	1	. .	. .	5,294	21	27	. .	. . .	15	697
9.	Holden shaft mines,	68,604.13	62,710.13	5,500	394	129.8	212	. .	. .	. .	1,940	12	30	. .	. . .	13	641
10.	Hampton shaft mines,	165,763.18	155,428.18	8,000	2,335	188	397	1	. .	2	4,920	16	64	. .	. . .	11	555
11.	Manville half time shaft mines,	48,264.15	38,541.15	7,300	2,423	144.3	229	. .	. .	. .	2,780	18	28	. .	. . .	19	919
12.	Oxford shaft mines,	136,629.06	115,361.06	6,000	17,268	154.1	411	. .	. .	. .	3,865	19	91	1	94	18	695
13.	Pyne shaft mines,	192,381.03	180,783.03	10,000	1,598	185.1	432	1	1	8	5,354	22	58	1	92	11	915
14.	Sloan "Incline Central,"	243,578.09	215,487.09	27,000	1,091	182.2	499	. .	. .	. .	4,992	19	72	1	74	45	3,481
15.	Diamond No. 2 shaft,																
16.	Tripp shaft,	241,006	206,781.10	30,250	3,974.10	180.9	504	. .	. .	. .	6,067	55	68	3	262	33	1,901
17.	Hyde Park shaft,																
18.	Taylor shaft,	151,001.05	146,811.05	4,190	. . . . .	172.5	377	. .	. .	. .	4,551	12	62	. .	. . .	6	391
19.	Taylor drift,	180,774.02	164,904.02	12,100	3,700	182.1	440	1	. .	. .	4,699	22	66	. .	. . .	21	973
	Miscellaneous employes,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	189	1	. .	. .	. . .	. .	. .	. .	. . .	. . .	. . .
	Totals,	2,615,464.13	2,389,453.03	177,365	48,646.10	173.15	6,480	12	4	26	75,254	335	955	12	1,046	274	16,215

20.	Dickson shaft mines,	273,471.14	246,003.04	24,861.07	2,607.03	232.75	480	1	1	4	7,148	18	47	..	...	14	743
21.	Von Storch slope and shaft mines,	263,594.04	232,986.05	21,900	8,707.19	229.75	613	1	..	..	6,894	29	80	..	...	10	629
22.	Manville half-time shaft mines,	48,264.15	38,541.15	7,300	2,423	144	229	..	..	..	2,780	...	28		...	....	....
23.	Capouse shaft mines,	280,229	270,217	7,500	2,512	210	586	2	1	6	9,797	15	87	..	...	10	757
24.	Pine Brook shaft mines,	248,376	221,721	4,224	22,431	194.4	611	..	..	..	10,990	5	81	..	...	17	1,386
25.	Meadow Brook shaft mines,	174,953	125,024	5,557	44,372	211.4	301	2	2	2	7,952	17	41	..	...	10	542
26.	Meadow Brook Tunnel,	46,563		420	......	212	51	1	..	..	1,555	1	8	1	92	1	15
27.	National slope and shaft,	84,036	138,137	6,310	14,578	212	258	1	..	..	4,201	14	21	..	...	13	539
28.	Stafford shaft,	30,046		1,200	......	212	72	..	..	..	1,502	3	6	1	92	5	182
29.	Mount Pleasant shaft,	198,962	176,023	7,000	15,939	213.7	468	1	..	..	9,227	14	52	1	94	16	716
30.	Green Ridge slope,	139,054	126,775	8,250	4,029	225.5	309	3	2	1	7,315	15	29	..	...	9	355
31.	Greenwood No. 1 shaft and slope,	216,036.13	199,625.13	15,000	1,411	206.9	461	2	..	..	8,736	19	85	1	90	14	605
32.	Greenwood No. 2 Tunnel,	10,126.16	7,126.16	3,000	......	58.6	86	1	1	2	366	6	15	..	..	4	145
33.	Spencers shaft,	137,824.15	128,969.03	4,000	4,855.12	169.5	338	1	..	..	7,015	11	33	..	...	12	436
34.	Shaft No. 5, Dunmore,	161,414	157,778	3,636	......	216.75	387	..	..	..	6,305	10	35	..	...	8	521
35.	Old Forge No. 1 shaft,	246,960	242,607	4,353	......	224	384	..	..	..	5,696	8	35	1	74	11	550
36.	Old Forge No. 2 shaft,				......	224	149	1	..	..	3,129	5	18	1	90	5	210
37.	Jermyn No. 1 shaft,	198,524.08	185,533.03	9,900	3,091.05	186.1	396	1	1	4	6,391	18	57	..	...	13	398
38.	Jermyn No. 2,	181,911.02	173,661.02	8,250	......	165.4	383	1	..	..	6,288	15	37	..	...	11	325
39.	Sibley shaft,	141,337.19	128,323.04	10,950	2,064.15	225	368	..	..	..	5,867	13	43	..	...	14	740
40.	William A. shaft,	217,485.13	204,345.03	12,000	1,140.10	181.7	428	1	1	..	7,249	15	39	..	...	10	940
41.	Austin Tunnel,	18,709.07	17,309.08	1,200	199.19	71.5	115	..	..	..	828	5	9	..	...	3	105
42.	Providence Coal Company shaft,	64,895	51,610	2,100	11,183	229	90	1	..	..	2,707	6	32	..	...	7	221
43.	Tripp local coal sale,	14,300	73.10	......	14,226.10	255	28	..	..	..	......	...	...	..	...	....	....
44.	Church coal sale,	1,000	....	......	1,000	30	40	..	..	..	......	...	...	..	...	....	....
	Totals,	3,398,073.06	3,072,390.06	168,911.07	156,771.13	197	7,631	21	9	19	129,938	262	918	6	532	217	11,060
	Grand totals,	6,013,537.19	5,461,843.09	346,276.07	205,418.03	185.1	14,111	33	13	45	202,682	597	1,873	18	1,578	491	27,443

* Coal prepared and shipped from Sloan braker.

TABLE 3.—*Showing the number of each class of employes at each colliery in the Second Anthracite District, during the year 1892.*

NAMES OF COLLIERIES.	NUMBER OF PERSONS EMPLOYED INSIDE.							NUMBER OF PERSONS EMPLOYED OUTSIDE.						Grand total inside and outside.
	Inside foremen.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters, engineers and firemen.	Slate pickers.	All other company men.	Superintendents, bookkeepers and clerks.	Total outside.	
Archbald colliery	1	120	120	35	50	9	335	1	16	89	64	....	170	505
Bellevue shaft colliery, }	3	136	136	37	62	13	386	2	15	100	56	....	173	559
Bellevue slope colliery, }														
Brisbin shaft colliery	1	108	106	34	47	9	305	1	9	76	54	....	140	445
Cayuga shaft colliery	1	100	103	30	52	5	291	1	19	85	35	....	140	431
Central, now called Sloan colliery	3	112	123	47	39	13	337	1	18	60	83	....	162	499
Continental colliery	1	107	105	37	41	13	304	1	5	81	72	....	159	463
Dodge colliery	1	95	95	30	38	10	269	1	12	55	50	....	118	387
Diamond No. 2, including Tripp	2	127	131	39	38	23	360	1	20	55	68	....	144	504
Holden shaft colliery	1	49	48	15	21	3	137	1	4	40	30	....	75	212
Hampton shaft colliery	2	99	99	24	40	6	270	1	8	66	52	....	127	397
Hyde Park shaft colliery	1	91	91	33	49	2	267	1	10	53	46	....	110	377
Manville one-half colliery	1	43	48	20	26	5	143	1	9	40	36	....	86	229
Oxford shaft colliery	2	90	100	35	36	28	291	1	17	62	40	....	120	411
Pyne shaft colliery	1	110	110	33	37	9	300	1	9	78	44	....	132	432
Taylor shaft and drift	2	104	104	29	37	15	291	1	7	78	63	....	149	440
Miscellaneous employes, mechanics, laborers, superintendents, clerks, surveyors and draughtsmen	....	....	....	....	....	....	....	....	....	....	....	....	189	189
Totals, Del., Lack. and W. R. R. Co.	23	1,491	1,519	478	612	163	4,286	16	178	1,018	793	....	2,194	6,480
Dickson shaft mine	1	117	117	55	58	9	357	1	9	59	54	....	123	480
Von Storch, D. R. and 14 foot veins	1	54	46	32	61	11	205	1	6	52	78	....	137	613
Von Storch, Clark veins	1	88	88	32	58	4	271	....	....	....	....	....	....	
Meadow Brook shaft	1	74	36	27	44	20	202	1	10	60	28	....	99	301
Meadow Brook Tunnel	1	17	17	7	7	....	49	....	....	....	2	....	2	51
National shaft	1	67	27	22	27	4	148	1	7	59	43	....	110	258
Stafford shaft	1	25	25	5	6	3	65	....	5	....	2	....	7	72
William A. shaft	1	120	105	30	45	5	306	2	10	70	40	....	122	428
Capouse shaft	5	142	146	55	68	16	431	1	14	89	50	....	154	585
Pine Brook, Clark vein	2	113	13	50	65	43	286	1	8	83	70	....	162	611
Pine Brook No. 3 vein	....	11	117	19	9	7	163	....	....	....	....	....	....	

Church slope, idle since February 15,	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Providence Coal Company shaft,	1	65	4	20	26	4	120	1	5	18	34	1	59	179
Mount Pleasant shaft,	2	105	105	39	57	18	326	1	6	78	57	...	142	468
Green Ridge slope,	1	80	75	31	45	10	242	1	10	28	27	1	67	309
Greenwood No. 1 shaft and slope,	2	108	108	31	58	14	321	1	21	59	59	...	140	461
Greenwood No. 2 tunnel,	1	15	20	7	5	...	48	1	6	6	26	...	39	87
Spencer's shaft,	2	75	75	15	44	12	223	1	4	54	54	2	115	338
Shaft No. 5, Dunmore,	1	110	104	15	36	13	279	1	1	60	46	...	108	387
Old Forge No. 1 shaft,	2	144	145	29	43	18	381	1	17	60	74	...	152	533
Old Forge No. 2 shaft,	2	144	145	26	43	18	378	1	17	61	72	1	152	530
Jermyn No. 1 shaft,	2	100	76	28	46	8	260	1	4	80	51	...	136	396
Jermyn No. 2 shaft,	1	110	90	30	30	7	268	1	4	63	47	...	115	383
Sibley shaft,	1	90	65	25	42	8	231	1	4	93	37	2	137	368
Austin tunnel,	1	25	22	4	9	1	62	1	3	27	22	...	53	115
Totals,	33	1,999	1,771	634	932	253	5,622	21	171	1,159	973	7	2,331	7,953
Grand totals,	56	3,490	3,290	1,112	1,544	416	9,908	37	349	2,177	1,766	7	4,525	14,133

TABLE NO. 4.—*List of Accidents resulting in death reported to the Inspector of the Second Anthracite District, including a portion of Lackawanna county, State of Pennsylvania, and the causes as shown by his investigations, for the year ending 31st day of December, A. D. 1892.*

Date, 1892.	NAMES.	Age.	Nationality.	Occupation.	Killed.	Widows.	Orphans.	Colliery where accident occurred.	Nature or cause of death.
Jan. 5.	Patrick Flynn,	60	Irish,	Miner,	Died,	1	7	Brisbin mines, Third ward, Scranton.	Seriously injured by the premature explosion of a blast; died on 13th.
12.	John Andarin,	41	Hungarian,	do.	Killed,	1	1	Green Ridge, Dunmore borough,	Killed instantly; fall of bony coal.
16.	Patrick McGeever,	15½	American,	Driver,	Died,			Spencers, Dunmore borough,	Left leg fractured while in the act of spragging, the car ran over him; died same day.
Feb. 3.	Louis Rosarie,	32	Italian,	Laborer,	Killed,	1		Meadow Brook shaft, Twentieth ward, Scranton.	Killed while in the act of cleaning road after firing blast; a piece of top coal fell on him; died shortly after.
4.	Francis Levey,	30	Irish,	do.	Died,	1	4	Dickson, Second ward, Scranton,	Seriously injured by a fall of rock and top coal while in the act of pulling it down; died shortly after.
4.	Michael McHugh,	26	American,	Miner,	do.			Old Forge No. 2, Old Forge township.	Seriously injured; fall of coal and rock; died in office after being taken out of mines
5.	William Burns,	18	do.	Driver,	do.			Taylor drift, Lackawanna township.	Seriously injured; was waiting for his car to be loaded at face of chamber when a piece of rock roof fell on him injuring him so badly that he died next morning at 10 o'clock.
15.	Mick Argavick,	23							
18.	James Knott,	14	Hungarian, English,	Laborer, Driver's helper,	Killed, Died,			Jermyn No. 2, Old forge township, Continental, Lackawanna township.	Killed; fall of rock. Fatally injured; was riding on bumper of first car in trip, he slipped and fell in front of car, it run over his leg mashing it into a jelly, it was amputated; he never rallied; died same day.
22.	Peter Sweet,	56	American,	Miner,	Killed,	1	8	Pyne, Lackawanna township,	Killed by fall of top coal; was in the act of cutting a prop from under the top coal when it fell killing him.
Apr. 6.	Michael C. Mahon,	20	Irish,	Laborer,	do.			Meadow Brook tunnel, Twentieth ward, Scranton.	Killed fall of top coal.
20.	William Jones,	21	American,	do.	do.			Taylor shaft, Lackawanna township.	Killed; fall of roof; there was a slip in the roof that was not visible, which fell causing his death.
May 13.	John Brogan,	55	Irish,	Head man,	do.			Providence Coal Company, Second ward, Scranton.	Fell down the shaft a distance of 100 feet; has a wife and three children in Ireland.
June 4.	John Healy,	28	do.	Miner,	do.			Mount Pleasant, Fourteenth ward Scranton.	Killed; fall of slate and roof.
10.	Thomas Motyka,	30	Polish,	Laborer,	do.			Dodge, Lackawanna township,	Killed; fall of rock roof; wife and family in Poland.

18,	David Day,	56	Welsh,	Miner,	Died,		5	Archbald, Lackawanna township.	Fatally injured fall of coal; died two hours after.
24,	Andrew ——,	30	Polish,	Laborer,	Killed,			do. do.	Killed; premature explosion of a blast. NOTE.—Could not find what his surname was.
27,	Andrew Baster,	35	do.	do.	do.	1	2	Meadow Brook shaft, Twentieth ward, Scranton.	Killed; fall of top coal.
July 2,	George Lewis,	17	Welsh,	Driver,	do.			Von Storch shaft, Second ward, Scranton.	Killed; head was caught between two mine cars.
5,	William Freese,	18	German,	Laborer,	Died,			Greenwood No. 1, Lackawanna township.	Leg badly fractured; run over by wheel of mine car; died on 11th.
Aug. 6,	John Washa,	45	Russian,	Outside laborer,	do.			Green Ridge, Dunmore borough,	Squeezed between cars at breaker; died on his way home; has a wife and three children in Russia.
10,	John Danethour,	35	English,	Miner,	Killed,	1	4	Jermyn No. 1, Old Forge township.	Killed; was taking down top coal when a piece of rock fell on him.
23,	Patrick Sheridan,	17	American,	Driver,	do.			Cayuga, Third ward, Scranton,	Killed by a fall of roof on main gangway as he was driving through it.
24,	Andrew Lomonisky,	30	Hungarian,	Miner,	Died,	1		William A., Old Forge township,	Seriously injured; fall of top coal; died a short times after.
25,	Charles Kattil,	30	English,	Laborer,	do.			Capouse, Twenty-first ward Scranton.	Injured seriously; fall of roof; both legs and both hips fractured; died same night.
Sept. 6,	Mike Stockage,	28	Hungarian,	do.	Killed,	1		Green Ridge, Dunmore borough,	Killed instantly; fall of roof.
Oct. 3,	Henry Gill,	38	Irish,	do.	do.	1	6	Capouse, Twenty-first ward, Scranton.	Killed by a fall of roof, while in the act of re-standing a prop which was knocked out by a blast.
8,	Daniel Davis,	35	Welsh,	Miner,	Died,	1		Continental, Lackawanna township.	Seriously injured; fall of roof; died same afternoon.
15,	Michael Costello,	50	Irish,	do.	do.	1	2	Greenwood No. 2, Lackawanna township.	Spinal chord severed; fall of bony coal; died November 15th.
22,	William Johnt,	13	American,	Slate picker,	Killed,			National breaker, Twentieth ward, Scranton.	Suffocated; got into coal chutes in breaker; ten minutes after which he came through dead
Nov. 30,	Luke Botogofski,	24	Polish,	Miner,	do.			Greenwood No. 1, Lackawanna township.	Killed; was in the act of sounding the roof when it fell on him killing him instantly.
Dec. 5,	Peter Regan,	52	Irish,	do.	do.	1	4	Cayuga shaft, Third ward, Scranton	Killed while at work in his chamber; fall of roof.
23	Michael Chunersky,	45	Polish,	Laborer	do.		2	Hampton shaft, Lackawanna township.	Instantly killed; fall of roof.
		33				13	45		

There were 6,013,537.19 tons of coal produced.
There was one death for every 182,228.4 tons of coal produced.
There was one widow for every 462,581.06 tons of coal produced.
There was one orphan for every 133,634.5 tons of coal produced.

TABLE 5.—*List of Serious Non-Fatal Accidents reported to the Inspector of the Second Anthracite District of Lackawanna county, State of Pennsylvania, and the causes as shown by his investigation, for the year ending 31st day of December, A. D. 1892.*

Date, 1892.	NAMES.	Age.	Nationality.	Occupation.	Colliery where accident occurred.	Nature of accident.
Jan. 7.	John Worthington,	50	English,	Miner.	Old Forge mines, Old Forge township,	Leg fractured; a piece of coal fell on it.
7.	John Cawley,	45	Irish,	do.	Capouse mines, 21st ward, Scranton,	Slightly injured; fall of rock.
8.	Williams Stevens,	22	American,	Runner.	Manville mines, 13th ward, Scranton,	Leg supposed to be fractured; caught between cars.
12.	Stevo Andarin,	21	Hungarian,	Laborer,	Green Ridge slope, Dunmore borough,	Injured by a fall of bony coal.
16.	David Phillips,	15	Welsh,	Drivers' helper.	Capouse mines, 21st ward, Scranton,	Ankle dislocated; caught between bumpers of cars, caused by cars jumping the track.
16.	William Lander,	47	English,	Miner.	Pyne mine, Lackawanna twp.,	Two ribs fractured; fell over a fall of coal.
16.	James Snooks,	16	American,	Driver.	do. do.	Injured; kicked by a mule on forehead.
18.	Charles Apothecary,	31	English,	Miner.	Bellevue slope mines, Lackawanna twp.,	Slightly injured; fall of slate roof.
20.	George Allen,	14	do.	Drivers' helper.	Hyde Park mines, 5th ward, Scranton,	Seriously injured by trying to jump on a moving truck.
22.	Thomas Noon,	22	Irish,	Runner,	Bellevue slope mines, Lackawanna twp.,	Slightly injured in abdomen by mule walking on him.
23.	Patrick Fox,		do.	Miner,	Dickson shaft, 2d ward, Scranton,	These men were working together; they fired a blast and went back to a place of safety where there was a box containing powder which exploded by a spark from a lamp or from the concussion; both were slightly burned.
23.	James Jones,		Welsh,	Laborer.		
29.	Arnold Smith,	26	German,	do	Taylor Rock mines, Lackawanna twp.,	Small bone of ankle broken; a piece of rock slid on it.
29.	George Edgerton,	16	English,	Driver,	William A. mines, Old Forge twp.,	Riding on bumper of car, fell in front, wheels ran on him, breaking his collar bone and two ribs.
30.	William Bates,	16	American,	do.	William A. mines, Old Forge twp.,	Collar bone broken; was riding on bumper of car sliding his foot along rail, was caught and fell in front of car.
Feb. 1.	Samuel Van Struck,	58	Irish,	Miner.	Capouse shaft mines, 21st ward, Scranton.	Shoulder dislocated; fall of rock.
2.	John Wills,	47	English,	do.	Bellevue shaft mines, Lackawanna twp.,	Injured about hands, arms and abomen; premature explosion of a blast while in the act of tamping a hole. Murphy was also slightly injured.
2.	Patrick Murphy,	45	Irish,	Laborer,		
5.	George Harris,	48	Welsh,	Miner,	Taylor shaft mines, Lackawanna twp.,	Seriously injured; was riding on a truck load of "props" against orders, fell and a car ran over him.
6.	Peter Sultzer,	40	German,	do.	do. do.	Ankle severely cut; fall of blacksmith coal.
9.	Martin Labass,	24	Hungarian,	Laborer.	Green Ridge mines, Dunmore borough,	Leg severely cut; struck by piece of coal from blast in another chamber across two pillars.
12.	John Losson,	32	Swedish,	Miner.	Hyde Park mines, 5th ward, Scranton,	Leg and jaw bone broken and head and face cut; fall of roof.
15.	Michael Powell,	25	Hungarian,	Laborer.	William A. shaft mines, Old Forge twp.,	Foot badly bruised; caught between bumpers of cars.

15,	Joseph Ardomas,	32	Polish,	Miner,	Meadow Brook tunnel, 20th ward, Scranton,	Both legs injured below knees; fall of top coal.
20,	Jacob Worehle,	40	German,	do.	Pine Brook shaft, 7th ward, Scranton,	Hands and face severely burned; was carrying loose powder in his hat when a spark from his lamp fell in it.
22,	Joseph Groukoski,	34	Polish,	do.	Meadow Brook shaft, 20th ward, Scranton,	Slightly injured; fall of bony coal.
23,	John Smearchuek,	30	Hungarian,	Laborer,	Jermyn No. 1 shaft, Old Forge twp.,	Ankle broken; fall of roof
March 4,	Anthony Genmeaski,	23	Polish,	do.	Continental shaft, Lackawanna twp.,	Flesh wound below the knee; caught between cars and rib.
7,	Andrew O'Hara,	16	Irish,	Oil boy,	Taylor breaker, Lackawanna twp.,	Slightly injured; struck on head by nut on belt pully in breaker.
8,	David Davis,	15	Welsh,	Drivers' helper,	Dodge shaft mines, Lackawanna twp.,	Compound fracture of leg above the ankle; caught between car and door.
11,	Dominick Moran,	16	Irish,	Driver,	Capouse shaft mines, 20th ward, Scranton,	Slightly injured; kicked by a mule on the back.
14,	Michael Reap,	45	do.	Miner,	Von Storch shaft mines, 2d ward, Scranton,	Slightly injured on leg; fall of rock.
14,	John Finney,	25	do.	Laborer,	Von Storch shaft mines, 2d ward, Scranton,	Injured slightly by same fall; four slight cuts on head.
19,	Albert Smith,	19	English,	do	Dodge shaft mine, Lackawanna twp.,	Ankle bone fractured; fall of roof.
24,	Patrick Regan,	27	Irish,	Miner,	Pine Brook shaft mines, 7th ward, Scranton,	Both men slightly burned by an explosion of fire-damp.
24,	Peter Madden,	25	do.	Laborer,		
24,	Patrick F. Mangan,	50	do.	Miner,	Meadow Brook shaft mines, 20th ward, Scranton,	Severely injured; caught between car and prop.
24,	Scott Carey,	45	American,	do.	Pyne shaft mines, Lackawanna twp.,	Bruised on face, head and ankle.
28,	Patrick Keeleher,	16	do.	Driver,	Manville shaft mines, 13th ward, Scranton,	Struck in eye by a piece of coal thrown by another boy.
April 2,	John Farry,	15	Irish,	do.	Von Storch slope mines, 2d ward, Scranton,	Right arm fractured; fell from mule between barn and mouth of slope.
6,	Larry Byrns,	13	do.	Slate picker,	Continental breaker, Lackawanna twp.,	Leg fractured; while sliding down a rope he lost his hold and fell.
8,	John Hermans,	63	French,	Miner,	Hyde Park shaft mines, 5th ward, Scranton,	Badly burned about face, body and hands; he set off about a half keg of powder.
8,	James Mahoney,	14	Irish,	Driver,	Green Ridge slope mines, Dunmore borough,	Injured; caught by car and it run on a part of his body
11,	Patrick Walsh,	51	do.	Miner,	Oxford shaft mines, 5th ward, Scranton,	Left knee and left ribs fractured, also scalp wound; fall of top coal.
12,	Paul Poloski,	28	Polish,	Laborer,	Dodge shaft mines, Lackawanna twp.,	Back injured; fell in front of a car and it ran on him.
13,	Michael Serma,	26	do.	Miner,	Old Forge breaker, Old Forge twp.,	Ankle broken; lever on culm dump fell on it.
14,	Andrew Redlington,	20	Irish,	Runner,	Pine Brook shaft mines, 7th ward, Scranton,	Squeezed under car; was eating dinner beside the track when a car jumped it and caught him.
14,	Patrick O'Boyle,	21	do.	Switchman,	Von Storch breaker, 2d ward, Scranton,	Two fingers cut off; caught under car wheel.
15,	Michael Riley,	42	do.	Miner,	Meadow Brook tunnel, 20th ward, Scranton,	Slightly injured; fall of top coal.
15,	Fred Noyle,	60	English,	do.	Brisbin shaft mines, 3d ward, Scranton,	Foot mashed; fall of coal.
15,	Mick Daniels,	25	Polish,	do.	Jermyn No. 2 shaft mines, Old Forge twp.,	Slightly injured; fall of rock roof.
16,	Stanley Perkins	28	do.	Laborer,	Greenwood No. 2 mines, Lackawanna twp.	Leg broken below the knee; caught between car and prop.
18,	John Coggins,	32	Polish,	Laborer,	Cayuga shaft mines, 3d ward, Scranton,	Slightly injured on head and back; fall of slate roof.
19,	Charles Johnson,	17	Swedish,	Driver,	Hampton shaft mine, Lackawanna twp.,	Burned on face and hands by an explosion of gas; his father set it off in an old chamber three chambers off.
20,	John Reap,	16	Irish,	do.	Green Ridge slope, Dunmore borough,	Arm fractured and hip injured; a mule he was leading stumbled and knocked him down in front of car.

TABLE 5.—*Continued.*

Date, 1892.	NAMES.	Age.	Nationality.	Occupation.	Colliery where accident occurred.	Nature of accident.
April 27.	Wm. H. Nicholas. . . .	14	Welsh.	Slate picker. . .	Archbald breaker, Lackawanna twp., . .	Ankle fractured; caught between pony screens and hopper.
28.	Herbert Williams. . . .	15	do.	Door boy. . . .	Capouse shaft, 21st ward, Scranton. . .	Slightly injured; he raised the guard chain deliberately and walked into shaft, fell 37 feet to bottom.
30.	Bartonjoy Vurkivich. . .	39	Polish.	Visitor.	Dodge shaft mines, Lackawanna twp., . .	Four fingers cut off by fall of rock. NOTE.—This was not a mine accident as he was not an employe.
May 4.	Michael Hernskey. . .	30	do.	Laborer. . . .	Hampton shaft mines, Lackawanna twp.,	Leg fractured; when taking a block from car it fell on him.
10.	Richard Lewis.	36	Welsh.	Miner.	Jermyn No. 2 shaft mines, Old Forge twp.,	Injured; fall of soapstone roof.
11.	Henry Nichols.	22	English. . . .	Laborer. . . .	Capouse shaft mines, 21st ward, Scranton,	Hips and stomach injured; fall of rock.
11.	William Seeley.	55	do. . . .	Miner.	Continental shaft mines, Lackawanna twp.,	Four toes cut off; fall of rock.
13.	John W. Griffith. . . .	38	Welsh.	do.	Capouse shaft mines, 21st ward, Scranton,	Struck his foot against a blasting needle and it ran nearly through it.
13.	Patrick McDonnell. . .	16	American. . .	Driver.	Shaft No. 5 shaft mines, Dunmore borough,	Leg badly lacerated; caught by wheel of car on rail.
13.	Edward Riley.	47	Irish.	Miner.	Meadow Brook tunnel, 20th ward, Scranton,	Rib broken and leg injured; fall of roof.
14.	Howard Stevers.	16	American. . .	Driver.	Pyne shaft mines, Lackawanna twp., . .	Slightly squeezed between a loaded car and a log crib.
16.	Stanley Goodlock. . .	26	Polish.	Laborer. . . .	Greenwood No. 1 shaft mines, Lackawanna twp.	Thighs slightly injured; fall of roof.
16.	William Scooping. . . .	27	do.	Water boiler, .	Greenwood No. 1 shaft mines, Lackawanna twp.	Both thighs fractured by same fall.
18.	John Campbell.	27	Scotch.	Miner.	Old Forge shaft No. 2, Old Forge twp. . .	Leg fractured and head injured; fall of rock.
20.	William Griffith.	37	Welsh.	do.	Sloan shaft mines, Lackawanna twp., . .	Both arms slightly burned; explosion of gas.
21.	William Evans.	16	American. . .	Driver.	Taylor shaft mines, Lackawanna twp., .	Side of face injured; kicked by a mule.
21.	Samuel Fidian.	54	English. . . .	Miner.	Dickson shaft mine, 2d ward, Scranton, .	Foot and toes badly bruised; fall of rock roof.
24.	Harry Danvers.	16	American. . .	Driver.	Brisbin shaft mine, 3d ward, Scranton, .	Leg fractured by car jumping the track and catching his leg.
25.	Michael Callahan. . . .	28	do. . . .	Miner.	Old Forge No. 1 mines, Old Forge twp., .	Badly cut about the head; struck by flying coal from premature blast.
25.	Charles Briggs.	14	German. . . .	Hopper cleaner.	Jermyn No. 2 breaker, Old Forge twp., .	Injured slightly; caught by machinery.
25.	Martin Reap.	18	Irish.	Driver.	Green Ridge Slope, Dunmore borough, . .	Right ankle dislocated; empty car was knocked on top of him.
25.	James Smith.	35	do.	Miner.	Pine Brook shaft, 7th ward, Scranton, . .	Chest seriously injured and scalp wound on head; premature explosion of blast.
26.	Martin Early.	30	do.	do.	Cayuga shaft, 3d ward, Scranton, . . .	Dangerously injured about head and back; fall of rock.
27.	Thomas J. Evans. . . .	28	Welsh.	do.	Manville shaft, 13th ward, Scranton, . .	Back injured while in the act of restanding a prop that was knocked out by fall of roof.
June 1.	Patrick Walsh.	16	American. . .	Slate picker. . .	Dickson breaker, 2d ward, Scranton, . .	Hand cut off at wrist; caught in pony rolls under breaker.
11.	Michael McGeever. . .	50	Irish.	Miner.	Sloan shaft, Lackawanna twp.	Slightly injured on head and shoulders; fall of roof.
13.	Daniel Sherron	16	do.	Driver.	Green Ridge slope, Dunmore borough, . .	Slightly injured; left leg squeezed between two cars.

	15.	John Brennan,	38	do.	Miner,	Greenwood No. 1 shaft, Lackawanna twp.,	One bone of leg fractured; fall of slate and rock.
	15.	Thomas James,		American,	Driver,	Capouse shaft, 21st ward, Scranton,	Face slightly injured by being kicked by a mule.
	18.	Thomas R. Lewis,	48	Welsh,	Miner,	Bellevue shaft, Lackawanna twp.,	Collar bone broken; fall of coal and rock.
	21.	William Richards,	50	do.	do.	Taylor shaft, Lackawanna twp.,	Back and arms slightly injured; a prop fell on him.
	22.	John W. Williams,	43	do.	do.	Archbald shaft, Lackawanna twp.,	Hip slightly injured; fell into sump at bottom of shaft, from bottom landing.
	23.	Andrew Oellshsured,	25	Hungarian,	Laborer,	Holden shaft, Lackawanna twp.,	Slipped while lifting a car on the track and cut a gash on his cheek.
	24.	Wm. G. Evans,	35	Welsh,	Miner,	Archbald shaft, Lackawanna twp.,	Was in the act of taming a hole when the cartridge exploded seriously injuring him.
	24.	William Bone,	39	English,	do.	Dickson shaft, 2d ward, Scranton,	Left hip joint dislocated; fall of rock roof in face of chamber.
	25.	John Bzhosky,	27	Polish,	do.	Jermyn No. 2 shaft, Old Forge twp.,	Slightly injured while replacing a prop by fall of roof.
	27.	John Burke,	22	Irish,	Laborer,	Brisbin shaft, 3d ward, Scranton,	Injured slightly; fall of bony coal.
	28.	Martin Petroski,	26	Polish,	Miner,	Jermyn No. 2 shaft, Old Forge twp.,	Ankle dislocated; fall of coal.
	29.	Bryan Healy,	55	Irish,	do.	Shaft No. 5, Dunmore borough,	Injured on back of hand and slight cut on head and body by premature explosion of blast.
	30.	Elias Anthony,	16	Welsh,	Driver,	Continental shaft, Lackawanna twp.,	Hips injured; caught between car and rib.
July	1.	John Howells,	34	American,	Laborer,	Central air shaft, 15th ward, Scranton,	Leg fractured; fall of coal.
	2.	Charles Gallagher,	50	Irish,	do.	Sloan shaft, Lackawanna twp.,	Head severely injured; fall of roof.
	6.	John Johns,		Welsh,	Miner,	Holden shaft, Lackawanna twp.,	Face injured by premature explosion of a blast.
	7.	David G. Morgan,	16	do.	Driver,	Capouse shaft, 21st ward, Scranton,	Leg fractured; fall of rock.
	11.	Joseph Young Rowski,	25	Polish,	Laborer,	Von Storch shaft, 2d ward, Scranton,	Back severely injured by a piece of top rock falling on him.
	11.	Stephen Bornick,	18	Hungarian,	Driver,	Green Ridge slope, Dunmore borough,	Body badly bruised, no bones broken; a mule fell on him.
	20.	Anthony Brain,	23	Polish,	Laborer,	Sloan shaft, Lackawanna twp.,	Severely cut on head, back and one leg; fall of rock and coal.
	21.	John James,	60	Welsh,	do.	Oxford shaft, 5th ward, Scranton,	Injured by roof falling on him.
	26.	John Nealon,	33	Irish,	do.	Manville shaft, 13th ward, Scranton,	Flesh wound on back and leg; struck by flying coal from blast.
	28.	Peter N. Nelson,	32	Scotch,	Laborer,	Hyde Park shaft, 5th ward, Scranton,	Breast injured; caught between car and prop.
	28.	Mike Skelly,	28	Italian,	Culm dumper,	Jermyn No. 2 breaker, Old Forge twp.,	Leg fractured; slipped and leg was caught by car on culm dump.
	29.	Steve Matlock,	28	Russian Pole,	Laborer,	Jermyn No. 1 shaft, Old Forge twp.,	These men were working together when a piece of roof in the form of a bell fell on them, injuring them on the body; not seriously.
	29.	Mike Peontack,	28	Austrian Pole,	do.	do. do. do.	
	30.	William Niger,	20	Swedish,	do.	Pyne shaft, Lackawanna twp.,	Head badly cut; struck by coal flying from blast.
Aug	3.	Frank Bernski,	25	Polish,	do.	Jermyn No. 2 shaft, Old Forge twp.,	Cap of knee split by a fall of top rock.
	5.	Steve Hartshorn,	14	English,	Driver,	Dickson breaker, 2d ward, Scranton,	Calf of leg badly cut; slipped and car wheel caught his leg.
	6.	Michael Callahan,	26	American,	Miner,	Old Forge shaft No. 1, Old Forge twp.,	Both were injured at face of chamber by a fall of bony coal; Callahan's hip was dislocated, and Shannahan's leg was fractured above the knee.
	6.	Jos. Shannahan,	26	Irish,	Laborer,	do. do. do.	
	6.	John Lucas,	26	Polish,	do.	Stafford shaft, Lackawanna twp.,	Slightly injured; fall of top coal in No. 3 vein.
	6.	James Black,	32		do.	Capouse shaft, 21st ward, Scranton,	Back severely injured; fall of rock.
	8.	Frank Pataloni,	46	Polish,	Miner,	William A. shaft, Old Forge twp.,	Jaw bone broken; fall of soapstone roof.
	9.	William Weaver,	16	American,	Driver,	Spencer's shaft, Dunmore borough,	Head slightly injured; kicked by a mule.
	10.	Robert Kerr,	16	do.	do.	Old Forge No. 1 shaft, Old Forge twp.,	Arm broken at wrist; caught between car and prop.

TABLE NO. 5.—*Continued.*

Date, 1892.	NAMES.	Age.	Nationality.	Occupation.	Colliery where accident occurred.	Nature of accident.
Aug. 11.	William Powell,	32	Welsh,	Miner,	Green Ridge slope, Dunmore borough,	Hand badly cut and leg bruised by being struck by coal flying from blast.
15.	Charles Kozlofsky,	17	Hungarian,	Driver,	Austin Tunnel mines, Old Forge twp.,	Cut on forehead and back of head; caught between car and lump coal schute.
19.	John Sovkowesk,	22	Polish,	Laborer,	Bellevue mines, Lackawanna twp.,	Foot slightly injured; a piece of coal fell off car and rolled on his foot.
23.	William Donovan,	16	English,	Helper, D.,	Cayuga shaft mines, 3d ward, Scranton,	Seriously injured by a fall of roof in main gangway.
24.	Isaac Gard,	51	do.	Miner,	Jermyn No. 2 shaft mines, Old Forge twp.,	Two ribs fractured; run over by cars.
26.	Andrew Gavelasky,	35	Polish,	do.	Meadow Brook shaft mines, 20th ward, Scranton.	Slightly burned by explosion of gas.
27.	Samuel Peadly,	33	American,	Laborer,	Cayuga shaft mines, 3d ward, Scranton,	Leg fractured; caught between car and prop.
Sept. 1.	James Kane,	13	do.	Slate picker,	Dickinson breaker, 2d ward, Scranton,	Had three fingers cut off by being caught in screens.
1.	Peter Warwick,	32	Polish,	Laborer,	Von Storch shaft mines, 2d ward, Scranton.	Face cut and badly bruised; fall of top coal.
2	Patrick O. Boyle,	16	American,	Driver,	Spencer's shaft mines, Dunmore borough,	Was riding on front bumper of car; fell off and was injured.
9.	Jacob Ruddy,	35	Irish,	Miner,	Von Storch shaft mines, 2d ward, Scranton,	Slightly bruised on hands by powder.
9.	Joseph Mitchel,	35	Polish,	do.	Manville shaft mines, 7th ward, Scranton,	Flesh wounds on left arm and side of face; struck by coal from a blast.
9.	Reese Reese,	35	Welsh,	do.	Pine Brook shaft mines, 7th ward, Scranton.	Arms, hands and face severely burned by an explosion of gas.
10.	Mike Hungarian,	35	Hungarian,	Laborer,	Jermyn No. 2 shaft mines, Old Forge twp.,	Leg fractured and otherwise injured; fall of roof.
12.	John Hughes,	15	Irish,	Driver's helper,	Oxford shaft mines, 5th ward, Scranton,	Kicked on the temple by a mule.
13.	John B. Williams,	50	Welsh,	Lumberman,	Sloan shaft mines, Lackawanna twp.,	Compound fracture of jaw; fall of roof.
15.	A. Ross Kelley,	23	do.	Miner,	Brisbin shaft mines, 3d ward, Scranton,	Back and sides injured; fall of bony coal.
20.	Patrick McNulty,	22	Irish,	Laborer,	Cayuga shaft mines, 3d ward, Scranton,	Abdomen injured; fell from a mule.
27.	James Ford,	30	do.	do.	do. do. do.	Back slightly injured. Fall of roof.
28.	John Evan Jones,	27	Welsh,	Runner,	Sloan shaft mines, Lackawanna twp.,	Head seriously cut; fell in front of car, which ran on him.
Oct. 1.	Levi Davis,	41	do.	Miner,	Central shaft mines, 15th ward, Scranton,	Seriously injured on head, back and legs; fall of rock.
1.	John Regan,	28	Irish,	do.	Oxford shaft mines, 5th ward, Scranton,	These men were slightly burned by an explosion of gas; it was caused by a canvas door which hung across a gangway having been left open.
1.	Wm. John Bynon,	24	Welsh,	Laborer,	do. do. do.	
3.	Pat Rowlands,	56	Irish,	Comp'y dumper,	Dodge breaker, Lackawanna twp.,	Head slightly injured; the body of culm car dropped back and caught him.
3.	Joseph Howells,	42	Welsh,	Miner,	Pine shaft mines, Lackawanna twp.,	Pelvis fractured; fall of blacksmith coal in new county vein.
3.	James Evans,	48	do.	do.	Capouse shaft mines, 21st ward, Scranton.	Arm fractured; was in the act of placing a prop when a fall of roof came down and caught him.
8.	Frank Webster,	37	English,	Rockman,	Manville shaft mines, 13th ward, Scranton.	Injured on top of head; a piece of rock fell on it.

	8,	Anthony English,	27	Irish,	Team driver,	Hyde Park shaft mines, 5th ward, Scranton.	Compound fracture of leg; caught between cars.
	12,	Patrick Horne,	27	Irish,	Miner,	Von Storch shaft mines, 2d ward, Scranton.	Back slightly cut; fall of rock while in the act of barring it down.
	13,	James Loughney,	15	do.	Runner,	Diamond breaker, 21st ward, Scranton,	Head slightly injured; caught between culm ear and mine car.
	14,	Thomas Tigue,	42	do.	Miner,	Meadow Brook tunnel, 20th ward, Scranton,	Shoulder bone fractured; fall of top coal.
	15,	Edward Geraty,	18	do.	Door-boy,	Sloan shaft mines, Lackawanna twp.,	Shoulder and right foot injured; caught by runaway trip of cars.
	15,	Michael Costello,	50	do.	Miner,	Greenwood No. 2 mines, Lackawanna twp.,	Spinal chord dislocated; fall of bony coal.
	17,	A. J. Morgan,	14	Welsh,	Door-boy,	Hyde Park shaft mines, 5th ward, Scranton.	Arm fractured; caught between door and frame.
	22,	John Howard,	18	English,	Driver,	Pyne shaft mines, Lackawanna twp.,	Skull fractured; kicked by a mule on forehead.
	24,	William Frances,	15	Welsh,	Driver's helper,	Dodge shaft mines, Lackawanna twp.,	Left arm fractured; kicked by a mule.
	27,	Patrick McDonnell,	50	Irish,	Miner,	Jermyn No. 2 shaft mines, Old Forge twp.	Collar bone fractured; struck by coal from premature blast.
	28,	Charles Bartush,	17	German,	Driver,	Holden shaft mines, Lackawanna twp.,	Seriously bruised; was riding up plane on trip of cars and fell off.
	28,	Orlando Ives,	15	American,	Outside driver,	Dodge breaker, Lackawanna twp.,	Bone of nose broken; kicked by a mule at breaker.
	29,	John Robinson,		English,	Miner,	Dickson shaft mines, 2d ward, Scranton,	Leg fractured; a large piece of loose coal rolled on it.
	29,	John Harrington,	16	American,	Driver,	do. do. do.	Left leg slightly bruised below the knee; caught between cars.
Nov.	4,	John Faraday,	51	English,	Miner,	Old Forge No. 1 shaft mines, Old Forge twp.	Leg fractured; fall of rock roof. The roof was sounded a few minutes before the fall came.
	7,	Michael Regan,	25	Irish,	Footman,	Dodge shaft mines, Lackawanna twp.,	Instep badly injured; a timber he was taking off the carriage fell on him.
	9,	Richard Bray,	17	American,	Driver,	Taylor shaft mines, Lackawanna twp.,	Head squeezed between car and gob; caused by a car running off the track.
	11,	—— Thomas,	17	do.	do.	Spencer's mines, Dunmore borough,	Bone in forearm fractured; fell from mule he was riding.
	14,	James Grier,	66	Italian,	Slate picker,	Dickson breaker, 2d ward, Scranton.	Large flesh wound on thigh; caught in machinery in breaker.
	14,	George Barnie,	31	Hungarian,	Laborer,	Pyne shaft, Lackawanna twp.,	Thigh fractured; fall of top coal and loose falling roof.
	14,	John W. Thomas,	52	Welsh,	Miner,	Austin drift, Old Forge twp.,	One rib fractured and bruised on back and left shoulder; fall of roof.
	18,	David J. Thomas,	19	do.	Laborer,	Archbald shaft, Lackawanna twp.,	Right arm fractured; fall of roof.
	19,	Thomas Butler,	27	do.	Track layer,	Austin drift, Old Forge twp.,	Leg fractured above the instep; fall of roof.
	19,	August Peffer,	23	Austrian,	Laborer,	Brisbin shaft, 3d ward, Scranton.	Hand mashed. Was riding on car with hand on top; was caught by fall of roof.
	21,	John Petruska,	23	Polish,	Miner,	Jermyn No. 2 shaft, Old Forge twp.,	Face slightly injured; struck by flying coal from blast.
	28,	Handel Jones,	18	Welsh,	Driver,	Continental shaft, Lackawanna twp.	Leg slightly bruised below the knee; fell in front of car.
Dec.	1,	William Block,	38	Polish,	Miner,	Providence Coal Company's mines,	Injured by jumping on moving loaded car on slope; slightly squeezed.
	7,	Thomas Conrey,	15	Irish,	Driver,	Manville shaft mines,	Leg seriously injured; fell in front of car and it ran on it.
	8,	Phillip Davis,	18	Welsh,	do.	Continental shaft mines,	Slightly injured; caught between car and pillar.
	9,	Francis Jones,	16	do.	do.	Von Storch 14-foot vein slope mines,	Right foot cut off above the ankle joint; fell in front of a trip of cars and they run over his foot.
	10,	William Miller,	15	German,	do.	Sloan shaft mines,	Arm fractured between elbow and wrist; caught between car and breaker.
	15,	Andrew Marrie,	17	do.	do.	Dodge shaft mines,	Slightly injured; fell under car.

TABLE NO. 5.—*Continued.*

Date, 1892.	NAMES.	Age.	Nationality.	Occupation.	Colliery where accident occurred.	Nature of accident.
Dec. 16,	Mike Thunnish,	19	Irish,	Runner,	Mount Pleasant shaft, Scranton,	Three fingers of hand mashed; caught by car wheel.
27,	Joseph Seidliskie,	25	Polish,	Laborer,	Capouse shaft, Scranton,	Slight scalp wound; fall of rock.
28,	Mike Hopkins,	18	Irish,	Runner,	Mt. Pleasant shaft, Scranton,	Right leg fractured above the knee; caught between car bumpers.
29,	George Ball,	16	do.	Driver,	Manville shaft,	Injured on hip by being kicked by a mule.

Total number of accidents,	181
Legs fractured,	33
Arms fractured,	12
Other bones fractured,	17
	62
Slight accidents,	119

TABLE NO. 6.—*Showing the condition of ventilation in all the collieries in Number 2 (or Scranton) District, now including the larger portion of Lackawanna County, Pennsylvania, for year ending 31st day of December, A. D. 1892.*

NAME OF COLLIERIES.	LOCAL NAME, NUMBER OR LETTER OF EACH SPLIT OF AIR.	Mode of ventilation.	DIMENSIONS OF FAN.		Revolution of fan per minute.	Pressure as shown by water gauge, in inches.	AMOUNT OF VENTILATION PER MINUTE.			Condition of ventilation.	No. of persons working in each split.	No. of horses and mules in each split.	Remarks.
			Diameter in feet.	Width of face in feet.			At intake.	At face of workings.	At outlet or upcast.				
Archbald	Thomas Butler	Fan	12	3½	160	...	110,676	28,626	.....	....	45	8	
Do.	William G. Jones	.....	...	...	...	...	.....	30,528	.....	....	58	10	
Do.	Rees Williams	.....	...	...	...	...	.....	23,182	.....	....	75	12	
Do.	James Stevens	.....	...	...	...	...	.....	20,132	114,031	....	39	6	
Do.	Rock vein	.....	...	...	...	...	21,432	20,623	21,623	....	45	8	
							132,108	123,091	135,654		262	44	
Bellevue shaft	A. E.	Fan	16	4½	105	...	132,160	16,416	.....	....	46	10	
Do.	B.	do.	14	4	105	...	.....	31,620	.....	....	57	7	
Do.	J. M. N	.....	...	...	...	...	.....	22,496	.....	....	73	9	
Do.	S. C.	.....	...	...	...	...	.....	30,362	.....	....	44	10	
Do.	D. V.	.....	...	...	...	...	.....	14,185	.....	....	11	1	
Do.	L.	.....	...	...	...	...	.....	10,532	155,103	...	9	2	
							132,160	125,611	155,103		240	39	
Bellevue slope	J. H. F.	Fan	14	4	100	...	59,215	10,000	.....	....	...	...	
Do.	G. E.	.....	...	...	...	...	.....	31,280	.....	....	66	14	
Do.	K. L.	.....	...	...	...	...	.....	13,300	59,859	....	25	5	
							59,215	54,580	59,859		91	19	
Brisbin	John Watkins (C.)	Fan	14	4	138	...	.....	56,868	19,440	....	58	6	
Do.	William C. Davis (C.)	.....	...	...	...	...	.....	18,075	.....	....	15	2	
Do.	B. Hughes (C.)	.....	...	...	...	...	.....	16,128	.....	....	26	2	
Do.	B. Williams (C.)	.....	...	...	...	...	.....	18,564	17,325	....	25	3	
Do.	Michael Kelly (C.)	.....	...	...	...	...	.....	18,720	17,752	....	26	3	

TABLE NO 6.—*Continued.*

NAME OF COLLIERIES.	LOCAL NAME, NUMBER OR LETTER OF EACH SPLIT OF AIR.	Mode of ventilation.	DIMENSIONS OF FAN.		Revolution of fan per minute.	Pressure as shown by water gauge, in inches.	AMOUNT OF VENTILATION PER MINUTE.			Condition of ventilation.	No. of persons working in each split.	No. of horses and mules in each split.	Remarks.
			Diameter in feet.	Width of face in feet.			At intake.	At face of workings.	At outlet or upcast.				
Brisbin	James H. Davis (C.)						21,008	20,000	118,440		42	8	
Do.	John Watkins (G.)						9,780	8,640			26	2	
Do.	James Roberts (G.)						19,521	18,880	34,080		36	2	
							144,461	136,240	152,520		254	35	
Cayuga	Straight gangway	Fan,	12	3½	140		80,570	24,300			66	9	
Do.	No. 1, east							19,172			32	6	
Do.	No. 2, east							7,680			26	3	
Do.	N. W. gangway							25,596	85,100		56	8	
Do.	G. vein						11,000	7,972	11,781		1	1	
Do.	Diamond vein						19,320	15,920	21,020		26	12	
							110,890	100,640	118,204		207	42	
Central, now called Sloan	Foot of shaft	Fan,	14	4	135								
Do. Do.	West, on side	do.	14	4	150		98,560	4,000					
Do. Do.	D. Clark						4,600	10,527			40	4	
Do. Do.	E. Clark							13,308			31	3	
Do. Do.	G., big vein							15,906			53	10	
Do. Do.	B., A. and E.							16,240			37	4	
Do. Do.	S. and W.							3,429	103,044				
Do. Do.	Locomotive						13,237	17,280			35		
Do. Do.	X., F. and G.						30,689	10,000	52,938		20	3	
Do. Do.	P., T. and R.						7,970	13,237	59,232		16	3	
Do. Do.	Rock vein							18,486			68	10	
Do. Do.	C., F. and R.							9,093			12	2	
Do. Do.	Hampton							7,970					
							155,056	140,166	215,274		280	39	

Central	C.						34,335	14,200			33	3	
Do.	L., A. and K.							9,765			26	3	
Do.	Hampton,							5,840	47,712				
							34,335	29,805	47,712		59	6	
Continental	Christ Jones,	Fan,	14	4	122		112,850	7,200					
Do.	William E. Rees,							12,200			7	1	
Do.	Pat. Cannon,							18,200			38	6	
Do.	John Evans,							16,000			38	5	
Do.	William J. Thomas,							20,280			45	6	
Do.	William Jermyn,							15,080			15	2	
Do.	David Hughes,							13,750	101,000		29	3	
Do	New county and Big vein,						39,050	23,046	64,500		50	6	
							151,900	125,750	165,500		225	29	
Dodge	B.,	Fan,	14	4	88			9,555					
Do.	G. K.,						47,773	38,187			51	9	
Do.	E. H.,							27,744			33	5	
Do.	F.,						76,191	12,032					
Do.	New county,							22,016			33	4	
Do.	A.,						57,888	20,880			34	7	
Do.	C.,							26,424			36	6	
Do.	S.,							24,276	203,085		25	8	
							181,852	181,114	203,085		212	39	
Diamond No. 2	No. 1,	Fan,	14	4	105		18,000	17,000			3	1	
Do.	No. 2,						18,000	17,000			19	3	
Do.	No. 3,						14,900	14,250			17	2	
Do.	Old works and scattering,						30,000	29,000	88,050				
							80,900	77,250	88,050		39	6	
Diamond (Tripp shaft)	Robinson,	Fan,	14	4	120		33,300	30,550			35	8	
Do.	Brisbin,	Fan,	14	4	118		28,560	27,300			29	4	
Do.	Grogan,						49,000	22,500	166,400		30	3	
Do.	Hughes,						27,060	26,000			28	5	
Do.	Barn,						9,000	8,500			1		
Do.	Rees,						42,480	36,000			54	7	
Do.	Phillips,						29,617	28,400	147,000		50	5	
Do.	Cummings,						42,000	59,800			36	4	
							261,017	219,050	313,400		263	36	
Hodden	Gangway A.,	Fan,	25	8	48		18,480	17,820			50	7	
Do.	Rock vein, (C.),						17,640	17,400	35,220		35	5	
Do.	Gangway E., new,						26,845	25,920			18	3	
Do.	County vein, old workings,						34,160	34,160	67,200				
Do.	Clark. No work there. (C.),						35,100	33,000					
Do.	D. Clark. No work there.						26,180	24,500	64,800				
Do.	A. Dunmore vein,						12,000	11,600	12,200		3		
							170,405	164,400	179,420		106	15	

The difference shown in the amount of air is in going through the old workings of No. 2 Diamond.

TABLE NO. 6.—*Continued.*

NAME OF COLLIERIES.	LOCAL NAME, NUMBER OR LETTER OF EACH SPLIT OF AIR.	Mode of ventilation.	DIMENSIONS OF FAN.		Revolution of fan per minute.	Pressure as shown by water guage, in inches.	AMOUNT OF VENTILATION PER MINUTE.			Condition of ventilation.	No. of persons working in each split.	No. of horses and mules in each split.	Remarks.
			Diameter in feet.	Width of face in feet.			At intake.	At face of workings.	At outlet or upcast.				
Hyde Park.	R. T. Edwards,	Fan.	14	4	104		64,115	11,720	81,935		24	12	
Do.	Rock vein,						17,025	13,970			64	9	
Do.	H. Thomas' Diamond vein,						16,844	14,325	19,380		34	11	
Do.	Clark vein,							15,775			54	7	
Do.	New county vein,							16,800			32	5	
Do.	New tunnel, N. co., vein,							10,190			14	2	
							97,984	82,780	101,315		222	46	
Mannville.	Clark vein,	Fan.	20	5	65		53,175		58,696				
Do.	No. 4 vein,	do.	14	4	108		11,900		12,225		12	1	
Do.	No. 1 split,						94,783	23,490	98,760		53	9	
Do.	No. 2 split,							24,795			63	7	
Do	No. 3 split,							17,792			33	3	
							159,858	66,077	169,681		161	20	
Oxford.	Hitchings,	Fan.	14	4	130		150,895	6,380					
Do.	Hayes,							18,570			24	5	
Do.	Dyers,							23,645			44	9	
Do.	Gleasons,							25,375			34	4	
Do.	B. Griffiths,							16,090			44	8	
Do.	A.,							13,784			11	2	
Do.	B. and C.,							18,326			51	9	
Do.	D.,							15,530			46	7	
Do.	E.,							9,435	156,638				
							150,895	147,135	156,638		254	44	
Pyne.	R. and H. gangways,	Fan.	11	4	120		12,036	16,150			49	9	
Do.	P. and J. gangways,							44,064	2,685		9	1	
Do.	W. and J. gangways,						46,756	11,934			23	4	

	J. and D. gangways,							21,060			54	6	
Do.	W. and R., east slope,						33,850	10,152			8	1	
Do.	North east slope,							8,448	105,293		22	2	
Do.	W. and D. N. C., east slope,							19,174			53	7	
Do.	E. and C.,							14,405	34,713		34	5	
							136,526	104,048	140,006		252	35	
Taylor shaft,	S. split,	Fan,	14	4	138		54,220	31,210			45	7	
Do.	B. split,						28,642	31,260			68	4	
Do.	J. split,						55,160	32,976			71	4	
Do.	R. split,							28,100	142,610		44	7	
							138,022	123,546	142,610		228	22	
Taylor drift,	M. split,	Fan,	12	3½	100		28,610	27,420	60,320		47	12	
Dickson,	East side,	Fan,	20	4½	70	.98	77,750			Good,			
Do.	West side,						55,230			do.			
Do.	Plane heading,							30,420		do.	68	10	
Do.	Loftus heading,							9,370		do.	14	3	
Do.	Flynns dip,							31,710		do.	73	6	
Do.	Goldens' heading,							24,510		do.	64	5	
Do.	Browns' heading,							14,380		do.	50	5	
Do.	West slope heading,							9,100		do.	19	3	
Do.	Barn heading,							4,086	161,550	do.	6	1	
							132,980	123,576	161,550		294	33	
Von Storch slope,	Diamond vein, / Rock split,	New fan,	17	5	100	.1	18,200	15,310	21,300	Good,	58	9	
Do.	Plane split,						13,200	10,090	16,400	do.	33	6	
Do.	Foot split, 14 foot vein,						21,170	18,060	24,300	do.	50	8	
Do.	Dickson split,						20,500	17,400	23,640	do.	48	7	
							73,070	60,860	85,640		189	30	
Von Storch Clark vein,	North side,	Fan,	20	5	85	1.75	62,480	31,855	42,410	Good,	90	13	Twenty-two worked on night shift.
Do.	North split,							17,460	22,300	do.	75	8	Twenty working on night shift.
Do.	South side,						31,395	22,295	42,185	do.	61	9	
Do.	New split,							13,295	17,265	do.	49	6	
							93,875	84,905	124,160		275	36	
Austin drift,	Southwest gangway,	Fan,	14	4	42	.4	34,000	20,000			48	5	Eight persons working on night shift.
Do.	Southwest gangway No. 2,							10,000			20	2	Ten persons working on night shift.
Do.	Southwest gangway No. 3,							1,000	39,000		8		Four persons working on night shift.
							34,000	31,000	39,000		76	7	

TABLE NO. 6—*Continued.*

NAME OF COLLIERIES.	LOCAL NAME, NUMBER OR LETTER OF EACH SPLIT OF AIR.	Mode of ventilation.	DIMENSIONS OF FAN. Diameter in feet.	DIMENSIONS OF FAN. Width of face in feet.	Revolutions of fan per minute.	Pressure, as shown by water guage, in inches.	AMOUNT OF VENTILATION PER MINUTE. At intake.	AMOUNT OF VENTILATION PER MINUTE. At face of workings.	AMOUNT OF VENTILATION PER MINUTE. At outlet or upcast.	Condition of ventilation.	No. of persons working in each split.	No. of horses and mules in each split.	REMARKS.
Church slope	Abandoned												
Greenwood new No. 1 shaft	New county vein	Fan			60	.3	7,400	6,000	7,900		12	2	
Greenwood new No. 1 shaft	No. 2 Dunmore vein						15,800	14,200	18,000		50	14	
Greenwood No. 2 shaft	No. 3 Dunmore vein	Fan			50		10,800	9,200	11,080		36	6	Seven persons working on night shift.
Greenwood No. 8 drift	No. 8 drift	Furnace					9,600	7,200	10,120		20	3	
Greenwood No. 12 drift	No. 12 drift	do.					8,400	7,150	9,860		38	12	
Greenwood No. 1 old shaft	West heading	Fan			140	.4	21,150	15,800	30,150		48	12	Ten persons working on night shift.
Greenwood No. 1 old shaft	East heading						28,180	21,850	29,750		90	16	Twenty persons working on night shift.
							49,330	37,600	59,900			28	
Green Ridge slope	No. 2 gangway	Fan	12	4	100		50,460	8,280	7,440		35	3	Nine persons working on night shift.
Do.	No. 3 gangway							7,200	7,820		38	6	
Do.	No. 4 gangway							4,750	8,430		41	5	
Do.	No. 4 and Durkins' vein							14,400	15,201		75	10	
							50,460	34,630	38,891		189	24	
Do.	Lost air in mines								14,459				
									53,350				
Jermyn No. 1	South split	Fan	5	75	80		30,234	21,764	30,962		65	15	
Do.	Northeast split						22,465	18,726	22,648		60	12	
Do.	Southeast split						10,582	9,678	10,732		40	6	

Jermyn No. 1,	East split,						14,626	13,839	14,976		30	7
Do.	West split,						12,749	11,946	12,872		30	4
							90,636	75,953	92,190		225	44
Jermyn No. 2,	South split,	Fan,	20	5	70		21,300	20,584	21,572	Good.	47	4
Do.	Southeast split,						15,346	14,683	15,596	do.	60	10
Do.	East split,						17,640	16,239	17,786	do.	50	7
Do.	West split,						19,185	18,326	19,372	do.	44	6
Do.	North split,						20,060	19,268	20,204	do.	44	5
							93,531	89,100	94,530		245	32
Shaft No. 5, Dunmore,	First vein S. W. side,	Fan,	17½	5	75	.4	3,000	2,000	3,200		12	2
Do.	Second vein N. E. side,						24,500	17,200	48,500		73	8
Do.	Second vein S. W. side,						24,000	17,500			75	9
Do.	Third vein N. E. side,						30,000	17,300	44,850		74	8
Do.	Third vein S. W. side,						15,600	10,100			25	3
Do.	Fourth vein,						14,800	9,650	15,750		5	2
							111,900	73,750	112,300		264	32
Old Forge No. 1 shaft,	Murdocks' heading,	Fan,			70	.5	18,340	15,880			64	7
Do.	Whites' heading,						16,550	11,780			55	6
Do.	Browns' heading,						16,660	13,480			47	6
Do.	C. H. heading,						12,350	10,430	41,780		43	5
Do.	Faradays' heading,						41,780	9,880	65,340		36	5
							75,680	61,450	107,120		245	29
Old Forge No. 2 shaft,	East heading, 5 foot vein,	Fan,			50	.4	29,445	23,050			63	8
Do.	East heading lower vein,							27,692				
Do.	Campbells heading vein,						33,337	30,528			55	7
Do.	West heading,						18,625	16,401			22	2
Do.	Intake from No. 13 shaft,						43,600		129,000			
							125,007	97,671	129,000		138	17
Capouse shaft,	G, Big vein No. 1 split,	Fan,	18	5	60	.7	28,500	28,000	30,000		94	5
Do.	G, Big vein No. 2 split,						27,000	26,000	28,000		60	7
Do.	R, Rock vein split,						18,000	14,000	24,400		52	8
Do.	C, Continental split,						19,500	16,000	17,100		24	3
Do.	D, Diamond No. 5,	Fan,	20	5	80	.9	27,500	24,000	26,800		39	5
Do	D, Diamond No. 6,						17,000	16,000	20,100		40	5
Do.	D, Diamond No. 7,						16,200	15,000	23,000		20	3
Do.	D, Diamond No. 8,						21,600	20,000	22,000		30	4
Do	R, Rock No. 2,						28,000	24,000	31,000		38	6
							203,300	183,000	222,400		352	46

5-12-02

TABLE NO. 6.—*Continued.*

NAME OF COLLIERIES.	LOCAL NAME, NUMBER OR LETTER OF EACH SPLIT OF AIR.	Mode of ventilation.	DIMENSIONS OF FAN.		Revolutions of fan per minute.	Dimension or area of furnace grate.	Pressure as shown by water gauge, in inches.	AMOUNT OF VENTILATION PER MINUTE.			Condition of ventilation.	No. of persons working in each split.	No. of horses and mules in each split.	REMARKS.
			Diameter in feet.	Width of face in feet.				At intake.	At face of workings.	At outlet or upcast.				
Pine Brook shaft,	A, Gangway third vein,	Fan,	17½	4	98	...	.20	33,100	31,400	33,830	....	84	19	Twelve persons working on night shift.
Do.	B, Gangway third vein,	Fan,	20	6	75	...	.20	30,720	29,840	31,624	....	91	10	Twenty-one persons working on night shift.
Do.	C, Gangway third vein,	.....	...	...	...	...	...	35,180	32,430	36,326	....	75	14	Four persons working on night shift.
Do.	D, Gangway third vein,	.....	...	...	...	...	...	31,472	29,724	32,760	....	82	11	Fourteen persons working on night shift.
Do.	E, Gangway Clark,	.....	...	...	...	...	...	45,500	43,940	45,730	....	69	17	Five persons working on night shift.
Do.	F, Gangway third vein,	.....	...	...	...	...	...	20,130	19,010	21,360	....	4	...	
Do.	G, Gangway third vein,	.....	...	...	...	...	...	27,240	26,862	27,542	....	33	4	Five persons working on night shift.
								230,101	215,080	236,082		438	75	
Providence Coal Company,	Shaft east side,	Fan,	10	3⅝	135	...	...	31,110	6,405	29,981	....	66	12	Three persons working on night shift.
Do. Do.	Drift twelfth vein,	Fan,	2⅔ / 2½	8⅝ / 8⅝	110 / 110	...	...	18,110	4,680	16,740	....	44	9	Four persons working on night shift.
Meadow Brook shaft,	Nos. 5 and 6 lifts in slope,	Fan,	14	3½	120	...	1	73,970	15,983	.....	Good,	53	6	
Do.	East side counters,	.....	...	...	...	...	...	.....	15,400	.....	do.	55	7	
Do.	West side outside split,	.....	...	...	...	...	...	.....	20,670	.....	do.	64	7	
Do.	West side inside split,	.....	...	...	...	...	...	.....	19,900	75,600	do.	65	7	
								73,970	71,953	75,600		237	27	

Meadow Brook Tunnel,	Counter gangway,	Furnace,				6x6	.3	41,500	21,100		Good,	14	2	
Do.	Lower gangway,								19,200	42,400	do.	26	7	
								41,500	40,300	42,400		40	9	
National shaft,	East side of slope and shaft,	Fan,	14	3½	120		1.2	69,950	16,500			31	5	
Do.	West side of shaft,								22,000			60	4	
Do.	Evans west counter and No. 4 vein,								12,870			17	2	
Do.	No. 3 vein,								15,900	71,500		25	2	
								69,950	67,270	71,300		133	13	
Stafford shaft,	No. 2 vein,	Fan,	9	3	120			41,080	17,900			5	1	
Do.	No. 3 vein,								21,600	41,860		58	4	Ten persons working on night shift.
								41,080	39,500	41,860		63	5	
Mount Pleasant shaft,	Isaac Williams' gangway	Fan,	20	6	55		.9	113,740	14,815			40	6	
Do.	Thos. Jones' gangway,	Fan,	15	5½	75				14,020			65	8	
Do.	Henry Davis' gangway,								14,735			68	8	
Do.	East side,								16,025			60	6	
Do.	New county vein,								14,870			38	3	Nineteen persons working on night shift.
Do.	Bigor 14 foot vein,								8,946			6	2	
Do.	Rock vein,								9,890	114,078		25	4	
								113,740	93,301	114,078		303	37	
Spencer shaft middle vein,	South east workings,	Fan,	14	5	120			45,700	12,520	12,880		66	10	
Do. Do.	Slope workings,								10,480	10,720		53	7	
Spencer shaft bottom vein,	Slope, south east workings,								10,500	10,670		50	11	
Do. Do.	Northeast workings,								10,600	10,860		54	5	
								45,700	44,100	45,220		223	33	
Sibley shaft,	Top vein, W. gangway,	Fan,	15	4	120		1.3	17,200	11,980	16,080		75	8	Thirty-nine persons working on night shift.
Do.	Top vein, N. W. gangway,							16,500	14,140	20,000		75	12	
Do.	2nd vein E. and W. gangway,							22,300	25,000	28,420		75	14	
								56,000	41,120	64,500		225	34	

TABLE No. 7.—*Machinery, boilers and steam power used at each colliery in the Second Anthracite Mining District in Lackawanna county, Pennsylvania, for year ending December 31, A. D. 1892.*

NAME OF COLLIERY.	Number of boilers.	DIMENSIONS.		Pressure per square inch.	Have you a steam gauge and safety valve.	Date of last examination.	Condition when last examined.
		Length in feet.	Diameter in inches.				
Archbald colliery	4	38	34	85	Both.	July 1, 1892	Good.
Do.	6	30	34	85	do.	July 6, 1892	do.
Do.	4	40	34	85	do.	July 10, 1892	do.
Bellevue Shaft and Slope colliery	12	36	34	85	do.	July 24 and 26, 1892	do.
Do. Do.	12	38	34	85	do.	July 24 and 26, 1892	do.
Brisbin colliery	9	30	34	85	do.	October 5, 6 and 9, 1892	do.
Do.	3	36	34	85	do.	October 11, 1892	do.
Do.	3	40	34	85	do.	October 15, 1892	do.
Cayuga colliery	6	30	34	85	do.	Not now in use.	
Do.	6	40	34	85	do.	October 28 and 30	do.
Do.	12	40	34	85	do.	November 14 and 15	do.
Central colliery	12	30	34	85	do.	August 27 and 28	do.
Do.	4	40	34	85	do.	December 1	do.
Do.	3	40	34	85	do.	August 29	do.
Central Flue Boiler colliery	1	. . . .	. . . .	. . .	do.	December 8	do.
Continental colliery	9	40	34	85	do.	October 14, 16 and 18	do.
Do.	6	40	34	85	do.	November 12	do.
Diamond colliery	10	40	34	85	do.	September 21, 24 and 27	do.
Diamond Breaker colliery	4	36	30	85	do.	November 19	do.
Do. Do.	10	36	34	85	do.	November 7, 8 and 16	do.
Diamond Air Shaft colliery	9	30	34	85	do.	November 13 and 14	do.
Do. Do.	3	40	34	85	do.	November 14	do.
Diamond Tripp Shaft colliery	12	40	34	85	do.	August 1 and 8	do.
Diamond Tripp Slope colliery	4	30	30	85	do.	December 13	do.
Do. Do.	3	40	34	85	do.	December 14	do.
Dodge Shaft colliery	15	36	34	85	do.	December 1, 4 and 6	do.
Dodge Air Shaft colliery	6	40	34	85	do.	November 2, 4 and 6	do.
Holden Shaft colliery	12	40	34	85	do.	September 27 and 30	do.
Hampton Shaft colliery	12	36	34	85	do.	November 12 and 19	do.
Hampton Locomotive Boilers	3	. . . .	. . . .	50	do.	December 8	do.
Hyde Park Shaft colliery	6	36	34	85	do.	December 8	do.
Do.	6	40	34	85	do.	December 8	do.

Manville Shaft colliery,	18	36	34	85	do.	October 21 and 28 and November 12,	do.
Oxford Shaft colliery,	9	40	34	85	do.	December 8,	do.
Do.	4	40	34	85	do.	August 1,	do.
Do.	6	40	34	85	do.	September 21 and 24,	do.
Pyne Shaft colliery,	12	36	34	85	do.	August 1 and 4,	do.
Do.	12	40	34	85	do.	August 1 and 4,	do.
Sloan Shaft colliery,	12	30	34	85	do.	December 1, §	do.
Do.	6	40	34	85	do.	December 1,	do.
Sloan Flue Boilers colliery,	2	. . . .	. . . .	. . . .	do.	December 8,	do.
Taylor Shaft colliery,	12	30	34	85	do.	August 5 and 12,	do.
Do.	10	40	34	85	do.	August 1 and 29,	do.
Delaware, Lackawanna and Western Railroad Company,*	30	. . . .	. . . .	. . . .	do.	December 8,	do.
Dickson colliery,	18	40	34	80	do.	September 25,	do.
Von Storch Slope colliery,	15	36	34	80	do.	October 30,	do.
Von Storch Shaft colliery,	14	36	34	80	do.	October 30,	do.
Bunker Hill Screens and Plane,	6	46	30	90	do.	July 3, ‖	do.
Shaft No. 5, Dunmore,	10	46	30	80	do.	October 3,	do.
Capouse Shaft colliery,	15	30	36	75	do.	October 15,	do.
Pine Brook Shaft colliery,	15	. . . .	. . . .	80	do.	October 15,	do.
Meadow Brook Shaft colliery,	4	32	32	70	do.	September 5 and 8,	do.
Do.	4	36	30	70	do.	September 11 and 16,	do.
Do.	2	30	30	70	do.	September 18,	do.
Do.	3	32	32	60	do.	September 4,	do.
Do.	4	36	30	65	do.	September 25,	do.
Meadow Brook Tunnel colliery,	1	32	32	60	do.	September 17,	do.
National Shaft colliery,	4	32	32	70	do.	September 4,	do.
Do.	12	. . . .	. . . .	70	do.	September 10 and 12,	do.
Do.	8	32	32	70	do.	September 8 and 18,	do.
Stafford Shaft colliery,	3	34	36	70	do.	September 11,	do.
Jermyn No. 1, Shaft colliery,	15	36	34	65	do.	November 1,	do.
Jermyn No. 2, Shaft colliery,	15	40	34	65	do.	October 1,	do.
Green Ridge Slope colliery,	15	40	34	75	do.	August 12,	do.
Church Slope colliery,	2	34	32	80	do.	Abandoned.	
Providence Coal Company's colliery,	4	40	34	85	do.	October and November,	do.
Do. Do.	2	28	32	80	do.	October and November,	do.
Mount Pleasant Shaft colliery,	12	34	30	80	do.	August 6,	do.
Do.	2	14	60	80	do.	August 6,	do.
Austin Breaker colliery,	4	36	34	60	do.	August 25,	do.
Austin Tunnel colliery,	1	23	54	80	do.	August 26,	do.
Do.	§1	. . . .	. . . .	120	do.	August 25,	do.
Shaft No. 1, Old Forge colliery,	5	36	30	75	do.	September 18,	do.
Shaft No. 2, Old Forge colliery,	5	36	30	80	do.	September 25,	do.
Old Forge Breaker colliery,	3	60	30	75	do.	September 25,	do.
William A. colliery,	15	40	34	65	do.	October,	do.
Spencer's colliery,	6	36	34	80	do.	July 25,	do.
Spencer's Breaker colliery,	5	36	34	80	do.	July 25,	do.
Greenwood No. 1, colliery,	6	34	34	80	do.	September 3 and 26,	do.
Greenwood No. 1, Breaker colliery,	2	30	30	80	do.	September 3 and 26,	do.
Greenwood No. 2, colliery,	3	40	34	80	do.	December 18 and 22,	do.
Do.	3	30	30	80	do.	December 18 and 22,	do.
Sibley colliery,	12	30	30	70	do.	December 4,	do.
Do.	‡1	. . . .	. . . .	70	do.	December 4,	do.
Totals,	587	. . . .	. . . .	. . . .			

*Thirteen locomotive boilers cleaned and examined. †Tubular boilers. ‡Tubular. §Locomotive boiler. ‖Idle most of year, 1892.

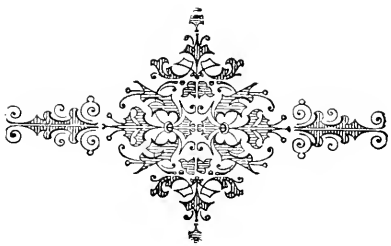
TABLE NO. 7.—*Continued.*

NAME OF COLLIERY.	Number of hoisting engines.	Horse power.	Number of breaker engines.	Horse power.	Number of fan engines.	Horse power.	Number of pumping engines.	Horse power.	Number of donkey pumps.	Horse power.	Number of holding engines in mines.	Horse power.	Total number of engines.	Total horse power.	Number of mine locomotives.	Horse power.
Archbald colliery,	2	148	1	74	1	63	..	..	4	168	..	..	8	453	..	..
Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bellevue Shaft and Slope colliery,	9	767	1	74	3	226	..	..	15	420	..	..	28	1,487	1	94
Do. Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brisbin colliery,	2	149	1	60	1	60	..	..	12	466	..	..	16	735	1	74
Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cayuga colliery,	2	280	1	60	1	60	2	440	7	201	..	..	13	1,240	1	94
Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Central colliery,	10	786	1	60	3	188	2	1,190	26	1,015	..	..	42	3,239	2	168
Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Central Flue Boiler colliery,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Continental colliery,	3	392	1	42	1	57	1	94	7	284	..	..	13	869	..	..
Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diamond colliery,	11	771	1	74	3	188	1	140	14	466	..	..	30	1,639	3	262
Diamond Breaker colliery,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diamond Air Shaft colliery,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diamond Tripp Shaft colliery,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diamond Tripp Slope colliery,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dodge Shaft colliery,	4	172	1	57	1	94	1	128	7	152	..	..	14	603	1	94
Dodge Air Shaft colliery,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Holden Shaft colliery,	5	363	1	80	1	80	..	..	6	118	..	..	13	641	..	..
Hampton Shaft colliery,	3	163	1	94	1	49	1	128	5	121	..	..	11	555	..	..
Hampton Locomotive Boilers,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hyde Park Shaft colliery,	3	207	1	94	1	57	..	..	1	33	..	..	6	391	..	..
Do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Manville Shaft colliery,	8	360	1	74	2	234	..	..	8	251	..	..	19	919	..	..

Oxford Shaft colliery	5	216	1	42	1	153			7	155			14	566	1	94
Do.			1	15	1	20							2	55		
Do.																
Pyne Shaft colliery	3	406	1	60	1	60	1	242	4	53			10	821	1	92
Do.																
Sloan Shaft colliery															1	74
Do.																
Sloan Flue Boilers colliery																
Taylor Shaft colliery	9	428	1	57	3	204	1	128	7	156			21	973		
Do.																
Delaware, Lackawanna and Western Railroad Company,*																
Dickson colliery	5	375	1	58	2	117			6	193			14	743		
Von Storch Slope colliery	2	179	1	61	1	49			1	105			5	394		
Von Storch Shaft colliery	2	139			1	49			2	47			5	235		
Bunker Hill Screens and Plane																
Shaft No. 5, Dunmore	4	260	1	82	1	53	1	104	1	24			8	523		
Capouse Shaft colliery	4	312	1	90	2	103	1	65	3	51	2	136	13	757		
Pine Brook Shaft colliery	8	576	1	80	2	216	1	348	5	166			17	1,386		
Meadow Brook Shaft colliery	2	160	1	76					6	230			10	542		
Do.																
Do.																
Do.																
Do.																
Meadow Brook Tunnel colliery	1	15											1	15	1	92
National Shaft colliery	6	269	1	45	1	40			4	145			12	499	1	92
Do.																
Do.																
Stafford Shaft colliery	1	77			1	25			1	20			3	122		
Jermyn No. 1, Shaft colliery	4	100	1	100	1	100			7	150			13	450		
Jermyn No. 2, Shaft colliery	6	100	1	100	2	100			2	40			11	340		
Green Ridge Slope colliery	2	120	1	75	1	40			5	120			9	355		
Church Slope colliery																
Providence Coal Company's colliery	3	95	1	45	1	20	1	43	2	18			7	221		
Do. Do.	8	375	1	75	2	128			4	80			15	658	1	94
Mount Pleasant Shaft colliery																
Do.																
Austin Breaker colliery			1	45	1	30							2	75		
Austin Tunnel colliery																
Do.																
Shaft No. 1, Old Forge colliery	6		1		2		1						10		1	74
Shaft No. 2, Old Forge colliery	2				1		1						4		1	90
Old Forge Breaker colliery	1		1										2			
William A. colliery	4	545	2	200	1	†80		10	2	105			10	940		
Spencer's colliery	8	225	1	80	1	40	1	90	1	6	2	56	14	497		
Spencer's Breaker colliery																
Greenwood No. 1, colliery	3	160	1	30	2	70			7	185			13	445	1	90
Greenwood No. 1, Breaker colliery																
Greenwood No. 2, colliery	1	40	1	30	1	35			1	25			4	130		
Do.																
Sibley colliery	2	90	1	45	2	80			7	184			12	359		
Do.																
Totals	164	9,820	37	2,334	54	5,060	18	3,150	197	5,953	4	192	474	24,852	18	1,578

* Thirteen locomotive boilers cleaned and examined.

† Dynamo.



THIRD ANTHRACITE DISTRICT.

(LUZERNE AND SULLIVAN COUNTIES.)

OFFICE OF INSPECTOR OF MINES,
PITTSTON, PA., *February 11, 1893.*

HON. THOMAS J. STEWART,
Secretary of Internal Affairs:

SIR: I have the honor herewith of presenting my annual report as Inspector of Mines of the Third Anthracite District for the year 1892. The number of lives lost was 50, leaving 20 widows and 54 orphans. The number of non-fatal accidents was 163; the injuries of a number of these were of a very slight character. The total production of coal was 5,659,730.09 tons.

The average number of days worked by the breakers was 205.60.

The report contains besides the usual tables, a description of the dams built in the Hillman and Forty Fort shafts. Also of the burning of the Barnum breaker and tower of the "Twin shaft."

Yours, very respectfully,

H. M. MCDONALD,
Inspector of Mines.

CONDITION OF THE COLLIERIES.

The condition of the underground workings of this district for the year 1892 has been somewhat improved in regards safety in respect to roof crushing and ventilation.

In the first place, three of the largest collieries have been busy for the year, flushing or filling in the old abandoned workings with culm from their breakers, where there were indications of the pillars weakening and roof crushing. A full account of which is given in this report. I find that the mine foremen to a great extent are enforcing their orders to the miners to pay more attention to the standing of props and timber than heretofore, which I believe will have a good effect in reducing the number of accidents from falls of roof close to the working places, which I am sorry to say is one of the most frequent causes of accidents to which the miner and his laborer is subjected and the Inspector is called to investigate.

The quantity of air circulating through the workings is somewhat larger this year than last, on account of some of the colliery officials substituting larger ventilators on the openings of their mines, where the

former fans were small and inadequate to do the work required of them, therefore the change.

I am happy to report that this district has been free from any unusual disaster, other than the usual casualities which take place from day to day to the employe in his hazardous occupation.

There have been several destructive fires this year at outside structures which caused considerable expense and loss of time to the companies to have them rebuilt and placed in working order again.

EXAMINATION OF APPLICANTS FOR CERTIFICATES OF QUALIFICATION FOR THE POSITION OF MINE FOREMAN AND ASSISTANT MINE FOREMAN.

The annual examination of applicants for certificates of qualification for mine foreman and assistant mine foreman was held in Pittston, Pa., July 8 and 9, 1892.

The examining board was composed of the following persons: H. McDonald, Inspector of mines; S. B. Bennett, superintendent of the Butler Mine Company, Patrick A. Sweeney, miner, Pittston, Pa., and John F. Evans, miner, Parsons, Pa.

The following named persons having passed a satisfactory examination were recommended to have certificates given them qualifying them for the position of mine foreman and assistant mine foreman under the law.

	P. O. Address.
John D. Reese,	Parsons.
William A. Jones,	Parsons,
Lewis P. Hughes,	Avoca.
David W. Brown,	do.
James J. McCarty,	do.
George P. Allen,	do.
John M. Philips,	do.
James Y. Bryden,	Pittston.
Patrick J. Walsh,	do.
James A. Murphy,	do.
Thomas Pierce,	do.
George O. Thomas,	do.
Abel Bynon,	do.
John McGrath,	do.
Thomas J. Collins,	do.
James Heslin,	Inkerman.
Patrick J. Stanton,	Luzerne Borough.
Patrick Cullen,	do. do.
Luke Nankiville,	Plains.
David J. Scurey,	Forty Fort.
John B. M'Ginley,	Wyoming.
Thomas H. Price,	Miners' Mills.
James B. Lewis,	Duryea.
David B. Emanuel,	do.

COLLIERY IMPROVEMENTS DURING THE YEAR 1892.

Pennsylvania Coal Company.

In Barnum No. 1 shaft, a new Guibal fan 18 feet in diameter, has been erected on the site of the one which was destroyed by the fire, which occurred on the evening of July 22, 1892. The old air-shaft of No. 2 Barnum has been enlarged from the surface to the depth of 150 feet, and a pair of double engines placed to hoist the coal through it from the 7 and 14 foot seams.

Lehigh Valley Coal Company.

In the Maltby shaft a rock tunnel was driven from the bottom of the 11-foot slope to the 6-foot vein, with a sectional area 7×14 feet, opening up a large territory of good coal.

Delaware and Hudson Coal Company.

In Laurel Run slope a rock tunnel was driven from the Checker vein to the lower Baltimore, a distance of 220 feet, with an area of 60 feet, to be used for transportation.

In the Pine Ridge shaft an air-shaft was sunk a distance of 22½ feet, from the upper to the lower Baltimore seam, to be used for ventilation.

In the Delaware shaft three rock tunnels, 8×10 feet area, were driven between the lower and upper Baltimore seams a distance of 40 feet each, to be used for transporting coal, and a new gravity plane was completed, 400 feet long, 8×10 area, with a gradient of 12°.

Butler Mine Company, Limited.

In the Fernwood shaft an inside slope was sunk a distance of 325 feet in the red-ash seam. A new Guibal fan, 12 feet in diameter, was also erected on the second opening to ventilate the workings, exhausting 22,000 cubic feet of air per minute with a water gauge of 3 inches, working speed of 35 revolutions per minute, driven by a horizontal engine, cylinder 10×24 inches.

In the Chapman shaft the second opening has been completed 130 feet in depth, with an area of 10×12 feet. A new fan, 12 feet in diameter, has been placed thereon to ventilate the workings, exhausting 30,000 cubic feet of air, with a water gauge of 2 inches, running 45 revolutions per minute. The fan is driven by a 20-horse power horizontal engine, cylinder 10×30 inches.

Newton Coal Company.

On the twin shaft a large pair of first motion engines were erected in place of the ones which were destroyed by the fire of September 11, 1892. They were built by the Dixon Manufacturing Company, Wilkes-Barre.

A rock tunnel was driven through an anticlinal from the bottom of the shaft in the Red Ash seam, a distance of 300 feet with an area of 7×16 feet which greatly shortens the transportation of coal to the foot of shaft.

Hillside Coal and Iron Company.

This company has sunk a new shaft 12×26 feet on their land southeast of Avoca. The sinking was started in March, 1892, but not being pressed for coal, it was abandoned until May, when the sinking was commenced in earnest and the shaft sunk to the Red Ash seam, a depth of 168 feet, by September 1st. The second opening has been completed connecting with the workings of the Elmwood shaft of the Florence Coal Company. The coal is taken to the Consolidated breaker by a small locomotive over two miles of road.

Avoca Coal Company.

A new fan 12 feet in diameter has been erected on the air shaft of this company, which exhausts 55,000 cubic feet of air with 4 inches water gauge running 120 revolutions per minute, driven by a 20-horse power engine.

Robertson and Laws Colliery.

At the Katydid colliery, two new slopes were sunk from the surface on the Stark seam, a distance of 314 feet, area 6×10 feet on a grade of 8 degrees. The coal is taken 24,000 feet to the breaker by a small locomotive.

Bennett Colliery.

A shaft 8×10 feet was sunk to the Baltimore seam, a distance of 60 feet, as a means of escape for the men who were taking out the pillars at the farthest part of the workings, in case of a sudden caving of the roof.

Annora Coal Company.

A rock tunnel was driven from the upper to the lower split of the Red-Ash seam; area 7×12 feet, a distance of 300 feet. A shaft was also sunk to air the same between the splits, a distance of 20 feet; area 10×12 feet.

Clear Spring Coal Company.

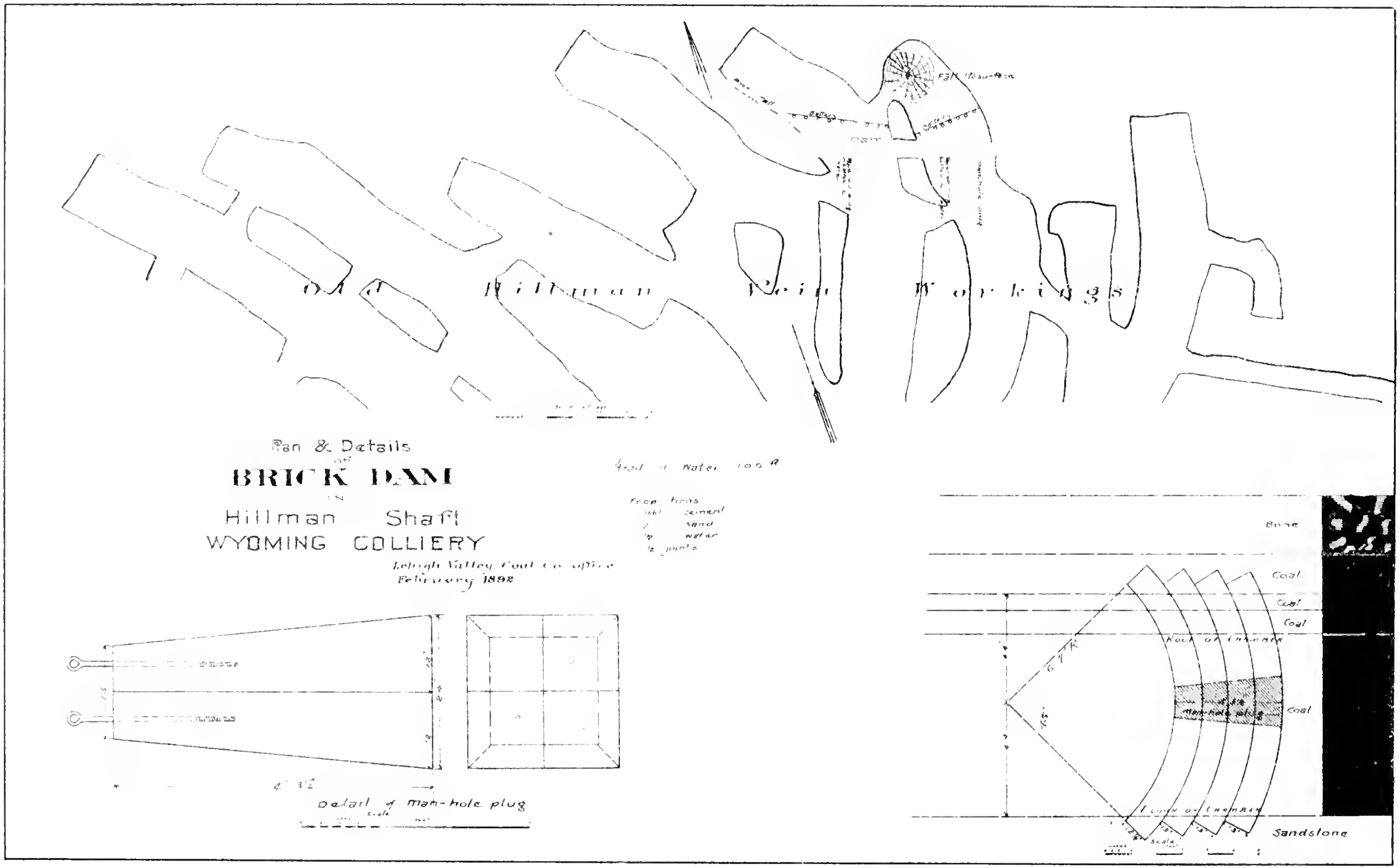
A new Guibal fan twenty feet in diameter was erected on the air shaft to ventilate the workings of the Red Ash seam, driven by a vertical engine cylinder 16×30 inches.

Morning Star Colliery.

A rock tunnel was driven from the Bennett seam to the Ross, a distance of 275 feet; area, 84 feet. A new fan twelve feet in diameter was erected to ventilate the workings, exhasting 45,000 cubic feet of air per minute, driven by a horizontal engine, cylinder 10×20 inches.

Old Forge Coal Company, Limited.

In the Columbia shaft a rock tunnel was driven from the third to the fourth vein, a distance of 90 feet. Sectional area, 98 feet. To be used for transportation of coal.


Old Hillman Vein Workings
Pan & Details
of
BRICK DAM
in
Hillman Shaft
WYOMING COLLIERY
Lehigh Valley Coal Co. office
February 1898
Detail of Man-hole plug
Bone
Coal
Coal
Coal
Roof of Chamber
Coal
Floor of Chamber
Sandstone

Description of dam in the old Hillman shaft of the Lehigh Valley Coal Company.

The Old Hillman shaft which was sunk on the Hillman seam located in Plains township and operated by the Riverside Coal Company, caved to the surface and filled the underground workings with water within a few feet of the top of the shaft July 3, 1874 The shaft remained idle until June 30, 1891, when the present company started to pump out the water preparatory to resuming once more the mining of coal.

The undertaking of pumping the water out was started with considerable anxiety to the officials of the company, as there was no doubt in their minds but that the water which flooded the shaft came through the sand from the Susquehanna river which is only a short distance away. There was only one idea to consider which would enable them to regain the working again, and that was, that in all probability the break in the strata had become somewhat closed up or puddled by the wash and length of time since the cave occurred which would be in there favor. With this consolation and having erected their boilers and placed the pumps in position in the shaft, they were started up to take the water out on the date above mentioned.

The pumps used to accomplish this work were the number 10 Knowles steam pumps, seven in all which ran constantly day and night until April 30, 1892, when the water was reduced sufficiently for the mine foreman to reach the cave. Upon examination the cave was located in a chamber driven from the heading in the inside slope which was advancing to the top of an anticlinal (see sketch accompanying this report). When the cave was properly located a temporary dam was built with timber until a dam could be built with brick. To accomplish this, it was necessary to cut through the pillar of coal to the adjoining chamber, so that the dam could be extended across it to the inside pillar.

The dam is built with brick laid in cement and four feet in thickness. Arching from the floor to the roof on an angle of 45 degrees; length, 87½ feet from the outside pillar of one chamber to inside pillar of adjoining chamber with a wall of brick two feet in thickness from the dam to face of chamber to support the pillar.

The quantity of water discharged by the pumps was an average of 300 gallons per minute, or 432,000 gallons every twenty-four hours.

Considerable improvements are under way since the dam has been built, and the water taken out, to place the inside workings in a safe and secure condition. The coal of this seam is of the very best quality and a large acreage to be mined which will last for a number of years to come.

Dam Erected by the Wyoming Valley Coal Company.

In the Forty Fort colliery, operated by the Wyoming Valley Coal Company, a brick dam has been built this year across a chamber in the

second lift, west heading, in the six foot or lower Baltimore seam to shut off an inflow of water which was coming through the strata in the roof close to the face of the chamber, in such quantities as to almost overcome the pumps. There is a considerable depth of wash over this portion of the vein, and it was thought advisable to abandon, for the present, all mining in this lift until the coal to the dip would be worked out. Therefore a dam was built (see accompanying sketch of dam) close to the break in roof, so that no large quantity of water would be standing behind the dam. The dam is built of brick, five feet thick, laid in cement; length from pillar to pillar, twenty-five feet; arching from bottom top at an angle of forty-five degrees.

Two Breakers and the "Twin Shaft" Tower Destroyed by Fire.

On the evening of July 22, 1892, the Barnum breaker, operated by the Pennsylvania Coal Company, was discovered by the night engineer to be on fire. The flames bursting through the roof of the pump house. From this point it caught the shaft tower which was soon enveloped in flames; then caught the trestling which connects the shaft with the breaker. The water arrangements, which are kept at the colliery for emergencies, not being available on this occasion, the fire companies of Pittston were sent for, and when they arrived at the fire the breaker and other buildings connected with it were so far consumed that nothing could be saved, but the firemen did good service in extinguishing the burning timber which had fallen down the shaft. Preparations were immediately commenced to build a large chute to dump the coal hoisted from No. 2 shaft, and to get the men to work again.

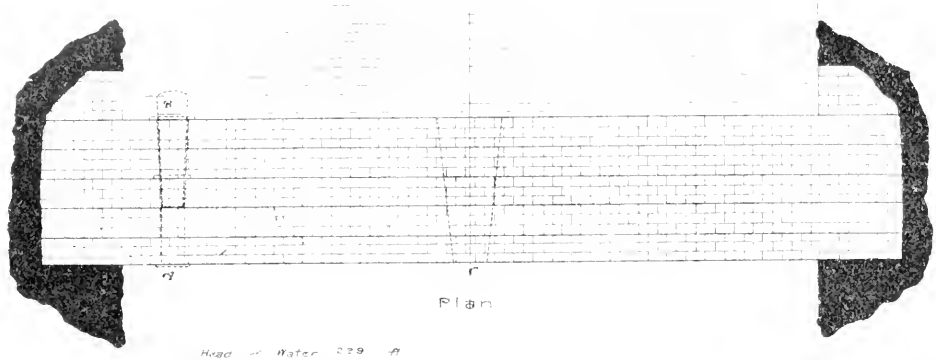
The chute was completed and work resumed on August 1.

The coal is taken to the Bunker Hill breaker, at Dunmore, for preparation for market.

The new breaker, which is in course of erection, is well under way at this writing and is expected to be completed by early spring.

The Burning of the Engine House and Head Frame of the "Twin Shaft."

On Thursday evening, September 11, 1892, the Twin engine house and shaft tower, situated in the borough of Pittston, and operated by the Newton Coal Company, was burned to the ground. The fire was caused by the explosion of a lamp in the engine house. As soon as the engineer found he could not extinguish the flames, he gave the alarm which brought the fire companies of the borough to the scene. Although strenuous efforts were made by the firemen to save the buildings their labor was in vain, as the fire had gained such headway before their arrival as to encompass the tower over the shaft. But the firemen succeeded in saving a portion of the boiler house and adjoining buildings and extinguishing the flames of the burning timbers, which fell down the shaft, thereby saving the mines from being destroyed by an explo-



Plan

Head of Water 23.9 ft

'A' cast iron pipe for water while dam was being constructed

'B' Tapered white pine plug turned to fit pipe

'C' Manhole used in finishing dam from the inside and as an escape after driving plug 'B'

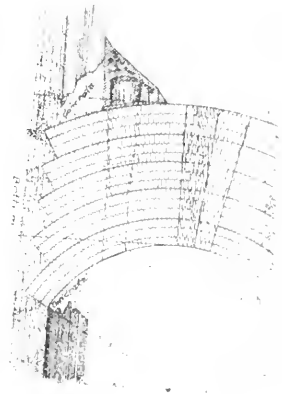
Proportions

1 bbl cement

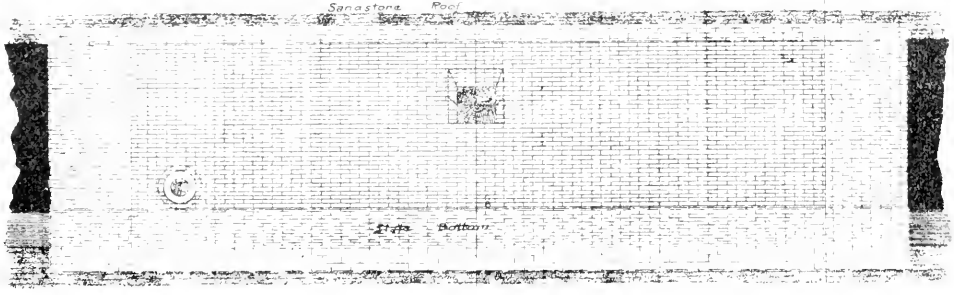
2 sand

½ water

½ lime



Side Elevation



Back Elevation

Plan & Elevation

Brick Dam

FORTY FORT COLLIERY

Scale

Lehigh Valley Coal Co. Office

Wilkes-Barre, Pa. 1901

sion of gas. This is an exceedingly gaseous mine and requires constant care and watchfulness on the part of the officials, as any disarrangement of the ventilating current for a short time would cause the workings of the mine to become filled with explosive gas.

The fans were stopped at 9.30 p. m., immediately after the fire was discovered, as the burning tower caused a current of air up the main shaft. As soon as the fire was extinguished the fan was started again. This was at 2.30 in the morning, when, on an examination of the main shaft, it was discovered that an air compressor which was located close to the shaft had fallen in, carrying to the bottom with it all the cribbing but about four setts with all the buntings in the shaft, and filling it for ninety feet, thereby cutting off the intake air current from the lower or red-ash seam, where forty-three mules were in the barn close to the foot of the shaft. At 8 o'clock the next morning Mr. Langan, general mine foreman, Mr. Lynott, mine boss, and Alex. McCormack, fire boss, proceeded down air the shaft in quest of the mules. When arriving at the bottom they came in contact with a large quantity of gas, and thinking it was not safe to penetrate any farther they came to the surface again.

The same party of men went down the air shaft again at two o'clock the same afternoon and came in contact with the gas coming up the shaft at 145 feet from the bottom They made another attempt at 4.30 p. m. when the gas was encountered at the Marcy seam a distance of 195 feet In this seam the air current was good, as there were no obstructions in the air passages to prevent the circulation of the air to the fan. The next morning the same three men having procured canvas went down to the Marcy seam and divided the air shaft from that seam down to the bottom with it, which caused a current of fresh air to circulate in the Red Ash seam. While placing this temporary brattice in the shaft, Mr. Wilson, of Philadelphia, appeared on the ground with the Shaw gas testing instrument and immediately began making tests of the air of the mine. The following are the results of his investigations: Having brought rubber bags with a capacity of ten gallons each, and a diaphragm pump to fill the same, they were taken into the mine and filled with the return air to the fan; the results are as follows:

Date of tests.	Number of tests.	TIME.	Part of mine from which taken.	Bags filled by.	Standard gas.	C. O^2.	Marsh gas or fire damp.
1892.							
Sept. 15,	1	2.30 p. m.,	Marcy vein	McCormack and Lynott,	8.2	Trace,	1.6
15,	2	2.35 p. m.,	40 feet below,	do. do.	8.2	do.	5.0
15,	3	2.40 p. m.,	75 feet below,	do. do.	8.2	do.	7.6
16,	1	7.20 a. m.,	40 feet below,	Lynott,	8.4	do.	2.8
16,	2	9.23 a. m.,	60 feet below,	do.	8.4	do.	5.9
16,	3	9.25 a. m.,	90 feet below,	McCormack,	8.4	do.	7.7
16,	6	2.15 p. m.,	140 feet below,	do.	8.6	do	16.1
17,	2	9.12 a. m.,	100 feet below,	do.	8.5	do.	7.2
17,	3	9.15 a. m.,	165 feet below,	do.	8.5	do.	14.5
17,	8	4.00 p. m.,	180 feet below,	do.	8.5	do.	7.0
18,	1	9.00 a. m.,	40 feet below,	do.	8.5	do.	6.2
18,	3	9.05 a. m.,	Bottom of air shaft,	do.	8.5	do.	4.2
18,	6	4.05 p. m.,	do. do.	do.	11.0	do.	15.0
19,	1	3.50 p. m.,	Return at fan,	Langan,	8.1	do.	2.2
20,	1	3.00 p. m.,	Marcy vein,	McCormack,	8.5	do.	4.0
20,	3	3.05 p. m.,	Bottom of air shaft.	do.	8.5	do.	1.2

Several other tests were made by Mr. Wilson, but sufficient has been shown to prove that the underground workings were in a deplorable condition from gas, and that the greatest care had to be exercised by the men in charge as they proceeded with their work to prevent an explosion of gas.

While Mr. Wilson was making the tests a large force of workmen were busy day and night putting in the buntings and cribbing in the main shaft down to the debris, which was taken out under considerable difficulty, as the workmen were not allowed the use of a light, only the "Clanny safety lamp" which the fire boss, Mr. McCormack, held for them to work by, thereby taking no chances whatever when an opening should be made to the vein for an explosion to occur.

On Saturday morning, four weeks from the time of the fire, the Tower seam was opened and the air current allowed to enter so that an examination for the mules could be made. When the exploring party entered the barn they found seven living and twenty-one dead mules. In a few days they were all found, some having wandered into the abandoned workings. Twenty-five having died and eighteen were alive. The dead ones were immediately taken to the surface and buried.

In three days from the opening of the main shaft, the accumulation of gas was driven out so that the men could work with open lights with safety.

It was very fortunate that the fire took place on Sunday night, as there were no persons in the mines at the time, for there is generally a large number working on the night shift in this shaft, and in all probability an explosion of gas would have taken place from some of the open lights before warning could have reached them to put their lights out. As the inside workings are a considerable distance from the shafts and from a half hour to an hour would have elapsed before they could have been warned of their danger.

Too much credit cannot be given to the officials and men, from the highest to the lowest, whose duty required them to oversee and do the work in repairing the shaft and placing it in working order again. I am happy to state that John B. Law, formerly superintendent of the Pennsylvania Coal Company, having newly been appointed general superintendent of this company's colleries, grasped the situation in a moment, and by giving his orders for the safety of the men, and placing such safeguards around while the repairing was going on, it was done with such rapidity and care that not a single accident occurred.

The shaft resumed operations on November 17, 1892. Almost all of the workingmen who were thrown out of employment by the fire, were given work in this company's Ravine shaft.

The Burning of the Mosier Shaft, Newton Coal Company.

On Friday, April 8, 1892, the Mosier shaft was destroyed by fire. The cause of the fire could not be ascertained. There was both a day and night watchman employed, whose duty it was to look after this breaker, as the works had been abandoned from July 7, 1891, on account of a general settling of the strata at that time, which caused considerable apprehension in the mind of the Inspector as to the safety in allowing the shaft to continue working, therefore the pumps were taken out and the workings allowed to fill with water.

FILLING BY CULM OF THE COOPER VEIN OF THE EAST BOSTON AND BLACK DIAMOND COLLIERIES.

In September, 1889, a large portion of the old and abandoned workings in the Cooper seam of the East Boston and Black Diamond collieries (the former operated by W. G. Payne & Company and latter by J. C. Haddock), began to squeeze along the line of the adjoining property to such an alarming extent that both of these companies proceeded without delay to secure the same by building cogs of timber and standing props to prevent the roof from caving, which fortunately was accomplished after considerable time and expense.

After due deliberation both parties came to the conclusion to fill the old workings with culm, as it would be a more substantial job when done than the propping.

This year both companies commenced filling the old workings with the culm. The East Boston having placed the pipes in position, started flushing the culm into the mines March 21, 1892, and since that time, have satisfactorily filled in four and one-half acres of old workings solid to the roof.

The water used to do the flushing, is pumped from the Bennett seam of same shaft, and is discharged into a barrel connected with culm chute at the breaker which carries the culm down the shaft 170 feet to the vein, by a six inch gas pipe. Continuing from there by the same sized pipe for 400 feet into old workings with a fall of three feet to the

hundred, there discharging from the pipe and flushing 800 feet of abandoned workings on a grade of from three or four degrees.

In filling in where the pillars are solid, instead of driving cross cuts, holes are drilled through, and then enlarged to six inches by reaming, which works very satisfactorily.

About twenty tons of culm per hour are thus disposed of, requiring 250 gallons of water per minute to flush the same through the pipe.

The filling of the old workings with culm in the Black Diamond, is similar to that of the East Boston.

The size of pipe laid in the Black Diamond is as follows: 200 feet of six-inch pipe on a nine degree pitch extending from the buckwheat chute in breaker to top of shaft, with 450 feet of four-inch pipe extending down the shaft to Ross seam, then extending 400 feet along the level to top of inside slope, then by 950 feet of four-inch pipe on a six degree pitch down the slope to face of chambers to be filled.

The flushing system of this company is working very satisfactorily also, as they have filled about twelve acres. There is passing along the pipes 815 pounds of culm and 117 gallons of water per minute. In my opinion there are other benefits to be derived from the filling of old or abandoned workings with culm, other than securing the roofs, which in itself amply repays for the time and expense of so doing.

For instance, it precludes all possibility of the mine becoming a magazine for gas and removes all anxiety in that regard from the minds of the persons in charge, while the air which is required to ventilate these portions of the old workings could be conducted in and around the working faces. It would likewise render it impossible for any person to fall into them as is sometimes the case, thereby diminishing the possibility of accident.

To James B. Davis, the general superintendent of the Black Diamond colliery, belongs the credit of having originated the plan of filling the old and abandoned workings in this inspection district with culm, and, in my opinion, it will give the most satisfactory results wherever adopted.

NUMBER OF FATAL ACCIDENTS AND TONS OF COAL PRODUCED PER LIFE LOST.

NAME OF THE OPERATORS.	Number of lives lost.	Tons of Coal mined per life lost.
Pennsylvania Coal Company,	10	142,027
Lehigh Valley Coal Company,	8	77,548
Delaware and Hudson Canal Company,	5	112,537
Delaware, Lackawanna and Western Railroad Company	9	35,991
Butler Mine Company, Limited,	3	63,923
Newton Coal Company,	1	232,061
Wyoming Valley Coal Company,		
Miscellaneous coal companies,	14	156,942
Total of all coal companies,	50	113,194

There were 20 widows and 54 orphans left by these casualties.

NUMBER OF NON-FATAL ACCIDENTS AND TONS OF COAL PRODUCED PER PERSON INJURED.

NAME OF THE OPERATORS.	Number of persons injured.	Tons of coal produced per person injured.
Pennsylvania Coal Company,	15	94,684
Lehigh Valley Coal Company,	25	24,815
Delaware and Hudson Canal Company,	15	37,512
Delaware, Lackawanna and Western Railroad Company	15	21,595
Butler Mine Company, Limited,	5	38,354
Newton Coal Company,	7	33,151
Wyoming Valley Coal Company,	4	27,858
Miscellaneous coal companies,	77	28,535
Total of all coal companies,	163	34,722

NUMBER OF FATAL AND NON-FATAL INJURIES AND TONS OF COAL PRODUCED PER EACH PERSON KILLED OR INJURED.

NAME OF THE OPERATORS.	Number of killed and injured.	Tons of coal produced per person killed and injured.
Pennsylvania Coal Company,	25	56.811
Lehigh Valley Coal Company,	33	18.799
Delaware and Hudson Canal Company,	20	28.134
Delaware, Lackawanna and Western Railroad Company,	24	13.496
Butler Mine Company, Limited,	8	23.971
Newton Coal Company,	8	29.007
Wyoming Valley Coal Company,	4	27.859
Miscellaneous coal companies,	91	24.145
Total of all coal companies,	213	26.571

CLASSIFICATION OF FATAL AND NON-FATAL ACCIDENTS.

CAUSES OF INJURIES.	Killed or fatally injured.	Seriously and slightly injured.
By explosions of carburetted hydrogen gas,	2	26
By falls of roof and coal,	27	56
By falling down shafts,	2	1
Crushed and run over by mine cars,	6	36
By explosions of powder and blasts,	8	17
Miscellaneous causes under ground,	1	21
Miscellaneous causes on surface,	4	6
Total.	50	163

OCCUPATION OF PERSONS KILLED OR INJURED.

	Killed.	Injured.
Miners,	25	68
Miners' laborers,	16	45
Drivers and runners,	4	22
Door boy and slate pickers,	3	6
Miscellaneous inside,	. .	18
Miscellaneous outside,	2	4
Total,	50	163

NATIONALITY OF PERSONS KILLED OR INJURED.

	Irish.	Welsh.	American.	English.	Scotch.	German.	Swedes.	Hungarian.	Polish.	Italian.	Total.
Killed or fatally injured,	10	3	8	5	2	2	. .	7	13	. .	50
Injured,	33	14	15	20	3	22	. .	19	37	. .	163
Total,	43	17	23	25	5	24	. .	26	50	. .	213

NAME OF COLLIERY.	Total number of boilers.	Number in each nest.	DIMENSIONS.		MAXIMUM PRESSURE PER SQUARE INCH.		Kind of steam gauge.
			Length.	Diameter.	Needed to do the work as at present.	That may be carried with safety.	
Pennsylvania Coal Company.			*Feet.*	*Inches.*	*Lbs.*	*Lbs.*	
Laws shaft	17		36	30	75	80	Crosby.
No. 13 shaft	10		36	30	75	80	do.
Central breaker	5		46	30	80	80	Bellfield.
No. 1 shaft	5		36	30	75	80	Cary.
No. 8 shaft	5		36	34	65	80	Crosby.
No. 9 shaft	4		36	30	80	80	Cary.
No. 10 shaft	6		36	30	75	80	do.
No. 10 shaft, Jr.	11		36	30	75	80	Crosby.
Barnum No. 1 shaft	10		36	30	75	80	Carey.
Barnum No. 2 shaft	6		36	30	75	80	do.
No. 8 breaker	3		70	30	75	80	Crosby.
No. 8 fan	5		36	30	75	80	do.
No. 3 shaft	3		36	30	65	80	do.
No. 4 shaft	12		46	30	75	80	do.
No. 5 shaft	3		36	30	75	80	Cary.
No. 6 shaft	6		36	30	80	80	do.
No. 7 shaft	10		36	30	75	80	Crosby.
No. 14 shaft	16		46	30	80	80	do.
Hoyte shaft	12		46	30	75	80	do.
Abbott shaft	6		46	30	75	80	do.
No. 6 breaker	3		36	30	80	80	do.
No. 14 breaker	6		46	30	75	80	do.
Ewen breaker	5		46	30	75	80	do.
No. 1 slope	3		36	30	75	80	Carey.
No. 4 slope, Jr.	3		36	30	75	80	do.
No. 11 tunnel fan	4		46	30	75	80	Crosby.
No. 11 shaft, Jr.	3		36	30	75	80	do.
Lehigh Valley Coal Company.							
Prospect shaft	10	2	30	34	60	100	Williams & Cassady.
Prospect breaker	6	3	30	36	60	100	Bellfield.
Midvale new slope	6	3	30	36	60	100	Williams & Cossady.
Henry shaft	21	3	30	36	65	65	Blake & Bellfield.
Wyoming shaft	18	3	30	32	65	65	American.

Maltby shaft	20	3	36	32	65	80	Utica.
Baxter shaft	19	3	30	30	60	60	Ashcroft.
Oakwood shaft	12	3	30	36	60	100	J. E. Waters.
Heidelburg shaft	12	3	30	36	60	70	Ashcroft.
Midvale slope and breaker	12	3	30	36	60	70	do.
Delaware and Hudson Canal Company.							
Pine Ridge	21	3	36	34	75	80	do.
Delaware	15	3	36	34	75	80	do.
Mill Creek	23	3	36	34	75	80	do.
Laurel Run	12	3	36	33	75	80	do.
Delaware, Lackawanna and Western Railroad Company.							
Hallstead	23	3	40	34	85	100	Utica.
Pettibone	24	3	36	34	80	100	do.
Butler Mine Company, Limited.							
Butler	10	3	34	36	70	100	Vulcan.
Chapman	2	2	32	36	65	80	do.
Fernwood	6	3	36	36	60	80	Utica.
Schooly	21	3	36	32	65	90	Utica & Crosby.
Wyoming Valley Coal Company.							
Harry E	16	3	30	30	50	80	.....
Forty Fort	18	3	30	30	70	80	American.
Miscellaneous Coal Companies.							
Bernice	2	2	15	50	65	90	Buffalo.
Bennett	8	3	45	40	60	80	Belfield & Crosby.
Mill Hollow	17	3	30	30	75	90	Ashcroft.
Black Diamond	32	3	30	33	75	90	Farrell.
Clear Spring	21	3 & 2	34	34	65	80	Spring.
Consolidated	9	3	36	34	75	90	Crosby.
Elmwood	12	3	30	34	70	130	Spring.
East Boston	27	3	30	34	65	90	Utica.
Fairmount	6	3	23	30	70	80	Ashcroft.
Keystone	8	2	30	34	60	90	Wisnor.
Columbia	8	2	36	34	75	100	Buffalo.
Phœnix	8	2	48	34	70	100	Philadelphia.
Avoca	6	2	36	36	70	100	Crosby.
Stevens	13	3	32	32	70	100	Buffalo.
Annora	6	2	36	30	60	70	Rochester.
Langcliffe	6	3	40	34	70	100	Belfield.
Katydid	2	2	20	36	70	.....	Ashcroft.
Babylon	12	3	50	34	80	100	Spring.
Mount Lookout	18	3	50	34	80	95	do.
Morning Star	2	2	30	30	50	100	Bonhart.

REPORT *of the condition of all steam boilers, etc.—Continued.*

NAME OF COLLIERY.	Date when gauge was tested.	The differences between safety valve and gauge if any, in lbs. per square inch.	Area of heating surface in each nest of boilers in square feet.	Area of safety valve to each nest of boilers in square inches.	Date of boiler examination.	Present condition of boilers—safe or not safe.
Pennsylvania Coal Company.	*1892.*	*Lbs.*	*Square Feet.*	*Square Ins.*	*1892.*	
Laws shaft	June 3.				September 15 and 16.	Good and safe.
No. 13 shaft	September 15.				September 15.	do.
Central breaker	June 3.				September 11.	do.
No. 1 shaft	June 3.				September 4.	do.
No. 8 shaft	June 3.				September 3.	do.
No. 9 shaft	June 3.				September 22.	do.
No. 10 shaft	June 3.				September 24.	do.
No. 10 Jr.	June 3.				September 23.	do.
Barnum No. 1 shaft	June 3.				September 20.	do.
Barnum No. 2 shaft	June 3.				September 19.	do.
No. 8 breaker	June 3.				September 11.	do.
No. 8 fan	June 3.				September 18.	do.
No. 3 shaft	June 2.				September 15.	do.
No. 4 shaft	June 2.				September 16.	do.
No. 5 shaft	June 2.				September 18.	do.
No. 6 shaft	June 2.				September 9.	do.
No. 7 shaft	June 2.				September 8.	do.
No. 14 shaft	June 2.				September 17.	do.
Hoyte shaft	June 2.				September 22.	do.
Abbott shaft	June 2.				September 20.	do.
No. 6 breaker	June 2.				September 18.	do.
No. 14 breaker	June 2.				September 28.	do.
Ewen breaker	June 2.				September 11.	do.
No. 4 slope	June 2.				September 25.	do.
No. 4 slope Jr.	June 2.				September 18.	do.
No. 14 tunnel fan	June 2.				September 30.	do.
No. 11 shaft, Jr.	June 2.				September 25.	do.
Lehigh Valley Coal Company.	*1893.*				*1893.*	
Prospect shaft	January 11.	None.	250	10½	January 3 to 8.	Good and safe.
Prospect breaker	January 11.	do.	375	10½	January 8.	do.
Midvale new slope	January 11.	do.	375	10½	January 8.	do.

Henry shaft,	*1892.* December	15.	do.	438	12½	*1892.* November 27 to December 18,	do.
Wyoming shaft,	December	29.	do.	42	9	December 1 to 18,	do.
Maltby shaft,	December	31.	do.	585	15½	November 20 to December 18,	do.
Exeter shaft,	July	29.	do.		12½	July 29,	do.
Oakwood shaft,	June	28.	do.	375	10½	June 24,	do.
Heidelburg shaft,	July		do.	375	10½	July,	do.
Mildvale slope and breaker,	June	28.	do.	375	10½	May 10,	do.
Delaware and Hudson Canal Company.							
Pine Ridge,	November	24.	10	58½	12½	September 25,	Safe.
Delaware,	November	24.	10	58½	10	September 15 to 25,	do.
Mill Creek,	November	24.	10	58½	12½	September 29,	do.
Laurel Run,	November	24.	10	58½	7	September 25,	do.
Delaware, Lackawanna and Western Railroad Company.							
Hallstead,	June	12.				October 12 and 14,	Good.
Pettibone,	June	12.				October 12 and 14,	do.
Butler Mine Company, Limited.							
Butler,			None.	30	7	July 17,	do.
Chapman,			do.	30	7	July 17,	do.
Fernwood,	July		do.		7	November,	do.
Schooly,	December	17,	8	540	12.5	December 4,	Safe.
Wyoming Valley Coal Company.							
Harry E,	Monthly,					Monthly,	Fair.
Forty Fort,	Monthly,					Monthly,	Good.
Miscellaneous Coal Companies.							
Bernice,	January,					May 1892,	Good.
Bennett,	Daily,		10	63	9½	December 6,	Safe.
Mill Hollow,			5	67		November 6,	do.
Black Diamond,	July,		None.	57	9	November,	do.
Clear Spring,	June,		do.			June 3,	Good.
Consolidated,	December	18,	do.	347	9½	December 18,	do.
Elmwood,	August	23,	10	480	9½	August 23,	Safe.
East Boston,	July	13.	None.	60	7	July 10,	do.
Fairmount,	April	15.	do.	42	12	April 13,	Good.
Keystone,	July,		do.	272	12½	July,	Safe.
	1893.						
Columbia,	January	1.	do.	36	8	December,	do.
Phœnix,	January	1.	do.	36	7¾	October,	do.
Avoca,	November,		do.		12	November,	do.
Stevens	November,		do.	897	12½	November,	do.
Annora,	September	29.	10	227½	7	September 29,	do.
Langcliffe,	November	15.	None.	456	7	November 13,	do.
Katydid,	New,		do.			December,	do.
Babylon,	May	14.	do.	60	12½	May 14,	do.
Mount Lookout,	December	30.	do.	712½	12½	December 30,	do.
Morning Star,	July,		do.			June,	do.

TABLE A.—*Showing the quantity of air circulating through the mines of the Third Anthracite District at the end of the year 1892.*

Number.	NAME OF MINES.	Name of the operators.	Number of fans or furnaces.	Number of persons in the mines.	Number of separate splits of air.	Cubic feet of air at the intake.	Cubic feet of air at or near the face of workings.	Cubic feet of air at the outlet.
1	Barnum Nos. 1 and 2 shafts.	Pennsylvania Coal Company.	2	190	4	65,000	62,400	67,100
2	Laws shaft.	do. do.	1	153	4	63,610	45,400	79,200
3	No. 13 shaft.	do. do.	1	148	3	48,940	47,290	40,200
4	No. 9 shaft.	do. do.	1	157	4	59,300	50,700	59,300
5	Nos. 10 and 10 Junior shafts.	do. do.	1	169	5	60,500	52,100	66,000
6	Nos. 1 and 8 shafts.	do. do.	2	223	3	139,300	126,270	157,255
7	Slope No. 4.	do. do.	1	84	2	29,890	24,210	28,560
8	Hoyte and No. 7 shafts.	do. do.	1	193	6	141,589	129,270	181,405
9	No. 5 shaft.	do. do.	1	101	3	37,500	36,340	37,660
10	No. 6 shaft.	do. do.	1	95	2	29,000	24,000	33,000
11	No. 11 shaft.	do. do	1	47	1	13,700	13,140	13,870
12	No. 14 shaft.	do. do.	1	121	4	56,700	54,115	55,300
13	Tunnels Nos. 1, 2, 3 and 4.	do. do.	1	188	5	81,234	76,370	90,086
14	No. 4 shaft.	do. do.	1	104	5	109,300	100,600	116,600
15	Prospect shaft.	Lehigh Valley Coal Company.	2	142	8	113,956	94,277	139,884
16	Oakwood shaft.	do. do.	1	57	4	54,076	43,216	54,848
17	Midvale slope.	do. do.	1	70	4	77,749	73,025	77,920
18	Wyoming shaft.	do. do.	1	145	6	124,350	109,750	132,650
19	Henry shaft.	do. do.	1	247	6	221,370	150,910	234,630
20	Exeter shaft.	do. do.	2	125	4	128,910	63,040	99,820
21	Heidelburg shaft.	do. do.	1	104	2	26,215	20,120	28,000
22	Maltby shaft.	do. do.	1	173	4	78,800	59,000	80,000
23	Mill Creek slope.	Delaware and Hudson Canal Company.*	1	. . .	. . .	. . .	. . .	. . .
24	Delaware shaft.	do. do.	1	203	5	55,570	52,035	55,145
25	Pine Ridge shaft.	do. do.	2	255	6	163,580	82,510	170,980
26	Laurel Run slope.	do. do.	2	195	4	103,192	72,014	108,544
27	Pettibone shaft.	Delaware, Lackawanna and Western Railroad Company.	1	189	7	206,500	154,200	208,800
28	Hallstead shaft.	do. do. do. do.	2	310	6	147,400	142,710	185,350
29	Forty Fort shaft.	Wyoming Valley Coal Company.	1	157	3	52,550	46,580	56,200
30	Harry E. shaft.	do. do. †	1	. . .	. . .	. . .	. . .	. . .
31	Butler shaft.	Butler Coal Company.	1	60	2	33,300	29,500	55,440
32	Schoody shaft.	do. do.	2	115	6	107,330	100,810	115,980
33	Fernwood shaft.	do. do.	1	74	2	25,600	14,600	25,600
34	Chapman shaft.	do. do.	1	53	3	34,720	22,300	35,000
35	Twin shaft.	Newton Coal Company.	2	268	6	238,400	189,200	284,700
36	Ravine shaft.	do. do.	1	70	2	90,275	78,080	103,010
37	Bennett shaft.	Waddell & Co.	1	81	3	53,260	43,970	48,342

38	Mill Hollow shaft,	do.	1	217	4	55,732	42,708	62,922
39	Bernice drift,	State Line and Sullivan Railroad Company,	1	120	2	66,400	26,000	68,000
40	Black Diamond shaft,	John C. Haddock,	1	319	4	69,250	53,900	78,590
41	Clear Spring shaft,	Clear Spring Coal Company,	1	403	6	102,000	64,350	102,300
42	Consolidated slope,	Hillside Coal and Iron Company,	1	198	6	86,645	75,535	90,020
43	Elmwood shaft,	Florence Coal Company,	1	152	3	54,075	39,050	65,000
44	East Boston shaft,	W. G. Payne & Co.,	1	259	4	100,500	75,000	101,200
45	Fairmount shaft,	Abbott Coal Company,	1	21	2	17,000	6,000	19,000
46	Keystone slope,	Keystone Coal Company,	1	243	6	95,310	48,605	95,434
47	Columbia shaft,	Old Forge Coal Company,	1	153	2	52,600	49,880	50,875
48	Phœnix shaft,	do. do.	1	146	2	116,678	103,130	125,672
49	Annora slope,	Annora Coal Company,	1	180	3	62,925	28,075	64,050
50	Katydid slope,	John M. Robertson & Co.,	Nat'l	58	1	31,390	20,120	32,950
51	Langcliffe shaft,	Langcliffe Coal Company,	1	225	5	49,000	42,000	56,300
52	Stevens slope,	Stevens Coal Company,	1	67	3	25,450	16,600	23,900
53	Babylon shaft,	Babylon Coal Company,	1	212	3	44,800	42,000	45,150
54	Mount Lookout shaft,	Mount Lookout Coal Company,	1	274	4	70,150	65,600	70,200
55	Morning Star tunnel,	John A. Huehins & Co.,	1	38	2	32,850	10,000	33,160
56	Avoca shaft,	Avoca Coal Company,	1	143	2	44,700	39,652	52,800
	Total,		64	8,494	208	4,245,151	3,372,257	4,351,002

* Robbing pillars, ventilation cannot be accurately measured.
† Not working this year.

TABLE 1.—*Showing Location, etc., of Collieries in the Third Anthracite District.*

NAME OF COLLIERY.	Name of Operator.	Location—Luzerne county.	Name of Superintendent.	Post office Address.
Barnum No. 1.	Pennsylvania Coal Company.	Mercy township,	John B. Smith, general superintendent.	Pittston, Pa.
Barnum No. 2.	do. do.	do.	Andrew Bryden, superintendent.	
Law's shaft.	do. do.	Pittston township,	Alex. Bryden, ass't superintendent.	
Shaft No. 13.	do. do.	Old Forge township,	Anthony Horan, ass't superintendent.	
Shaft No. 9.	do. do.	Hughestown,		
Shafts No. 10 and 10 Jr.,	do. do.	do.		
Abbott's slope.	do. do.	do.		
Shafts No. 1 and 8.	do. do.	do.		
Slope No. 4.	do. do.	Jenkins township.		
Shaft No. 4.	do. do.	do.		
Shaft No. 7.	do. do.	do.		
Shaft No. 5.	do. do.	do.		
Shaft No. 6.	do. do.	do.		
Shaft No. 11.	do. do.	do.		
Shaft No. 14.	do. do.	do.		
Tunnels Nos. 1, 2, 3 and 4. No. 14.	do. do.	do.		
Hoyte shaft.	do. do.	do.		
Prospect shaft.	Lehigh Valley Coal Company,	Plains township,		
Oakwood shaft.	do. do.	do.		
Henry shaft.	do. do.	do.		
Mineral Spring slope.	do. do	Parsons,		
Coal Brook slope.	do. do.	do.		
Exeter shaft.	do. do.	Exeter,	W. A. Lathrop, general superintendent.	Wilkes-Barre, Pa.
Heidelburg shaft.	do. do.	Pittston township.		
Heidelburg slope.	do. do.	do.		
Midvale slope.	do. do.	Plains township,		
Maltby shaft.	do. do.	Kingston township,		
Wyoming shaft.	do. do.	Plains township,		
Enterprise shaft and slope	do. do.	do.		
Mill Creek slope.	Delaware and Hudson Canal Company,	do.		
Delaware shaft.	do. do. do.	do.	A. H. Vandling, general superintendent.	Scranton, Pa.
Pine Ridge shaft.	do. do. do.	Miners' Mills		
Laurel Run slope.	do. do. do.	Parsons,		
Pettibone shaft.	Del., Lacka. and Western R. R. Co.,	Kingston township,	W. R. Storrs, general manager,	Scranton, Pa.
Hunt shaft.	do. do. do.	do.		
Hallstead shaft.	do. do. do.	Duryea,		
Butler shaft.	Butler Mine Company, Limited.	Pittston township,		
Schooley shaft.	do. do.	Exeter township,		
Boston drift.	do. do.	Jenkins township,	S. B. Bennett.	Pittston, Pa.
Fernwood shaft.	do. do.	do.		
Chapman shaft.	do. do.	Pittston township.		
Forty Fort shaft.	Wyoming Valley Coal Company,	Kingston township,	W. A. Lathrop,	Wilkes-Barre, Pa.
Harry E. shaft.	do. do.	do.		
Twin shaft.	Newton Coal Company.	Pittston,	John B. Law,	Pittston, Pa.
Ravine shaft.	do. do.	do.		
Bennett shaft.	Thomas Waddell & Co.,	Plains township,	Thomas Waddell,	Pittston, Pa.
Mill Hollow shaft.	do. do.	Luzerne borough,		
Bernice drift.	State Line and Sullivan R. R. Co.	Bernice, Sullivan county,	I. O. Blight,	Towanda, Pa.

Black Diamond shaft	John C. Haddock	Luzerne borough, Luzerne co.	James B. Davis	Plymouth, Pa.
Clear Spring shaft	Clear Spring Coal Company	West Pittston	J. L. Cake	Pittston, Pa.
Consolidated shaft and slope	Hillside Coal and Iron Company	Avoca	W. A. May	Scranton, Pa.
Elmwood shaft	Florence Coal Company	Pittston township	Austin Moore	
East Boston shaft	W. G. Payne & Co.	Kingston township	E. F. Payne	Kingston, Pa.
Fairmount shaft	Abbott Coal Company	Pittston township	P. F. Mallory	Towanda, Pa.
Keystone slope	Keystone Coal Company	Plains township	James H. Hughes	Wilkes-Barre, Pa.
Columbia shaft	Old Forge Coal Company, Limited	Marcy township	John A. Mears	Scranton, Pa.
Phœnix shaft	do.	do.		
Katydid slope	do.	Avoca	John M. Robertson	Moosic, Pa.
Stevens slope	John M. Robertson & Co.	Exeter	A. Rees	Pittston, Pa.
Annora slope	Stevens Coal Company	Laflin	William C. Allen	Wilkes-Barre, Pa.
Langcliffe shaft	Annora Coal Company	Avoca	John A. Mears	Scranton, Pa.
Avoca shaft	Langcliffe Coal Company	do.	W. H. Hollister	Avoca, Pa.
Babylon shaft	Avoca Coal Company	Duryea	J. L. Crawford	
Mount Lookout shaft	Babylon Coal Company	Wyoming	D. R. Morgan	Scranton, Pa.
Morning Star tunnel	Mount Lookout Coal Company	do.		Wyoming, Pa.
	John A. Hutchins & Co.			

TABLE 2.—*Giving the total number of tons of coal mined in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the Third Anthracite District for the year ending December 31, 1892.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number of days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.
Pennsylvania Coal Company.											
Barnum, two shafts.	Marcy township,	191,618	185,912	207.25	535	3	...	6,446	19	65	...
No. 13 shaft, Central breaker.	Old Forge township,	...	...	...	...	...	1	...	...	...	...
Laws shaft, Central breaker.	Pittston township,	260,681	252,475	234.75	472	1	...	6,059	32	46	1
No. 9 shaft, No. 10 breaker.	Hughestown,	...	...	...	...	1	1	...	...	...	...
No. 10 shaft, No. 10 breaker.	do.	181,672	175,259	116.75	523	...	...	7,012	24	62	...
Shafts No. 1 and 8.	do.	128,912	126,057	218.75	334	...	1	3,265	18	35	...
Slope No. 4, Ewing breaker.	Jenkins township.	...	...	...	...	...	1	...	...	...	...
Shaft No. 7, Ewing breaker.		...	...	...	...	...	1	...	...	...	...
Shaft No. 4, Ewing breaker.		280,721	268,581	229	705	1	1	8,089	45	62	...
Hoyte shaft, Ewing breaker.		...	...	...	...	...	3	...	...	...	...
Shaft No. 5, No. 6 breaker.		...	...	...	...	...	1	...	...	...	...
Shaft No. 6, No. 6 breaker.	do.	148,781	143,747	215.25	393	...	1	4,797	24	61	...
Shaft No. 11, No. 6 breaker.		...	...	...	...	...	...	...	...	...	...
Shaft slope and tunnel No. 14.	do.	227,883	220,088	237	467	2	4	6,838	26	56	1
Total Pennsylvania Coal Company,		1,420,271	1,372,119	222.68	3,429	10	15	42,536	188	387	2
Lehigh Valley Coal Company.											
Prospect two shafts and slope,	Plains township.	222,772.13	222,772.13	196.45	534	1	5	5,050	30	74	2
Midvale slope,*	do.	...	...	...	...	...	2	...	...	...	...
Wyoming shaft and slope,	do.	75,619	75,619	166.25	154	...	4	3,090	18	44	...
Henry shaft,	do.	116,262	112,205	195.90	342	...	1	4,093	21	58	...
Maltby shaft,	Kingston,	86,239	85,030	183.05	312	2	5	3,764	20	36	...
Mineral Spring, two slopes,*	Parsons,	...	...	...	...	...	...	...	...	...	...
Exeter shaft,	Exeter,	87,105	81,835	193.70	248	4	8	3,078	19	48	1

Heidelburg shaft,	Pittston township,	32,387	32,208	78.10	198	1	...	708	12	21	...
Heidelburg slope, *	do.	...	...	...	...	...	...	...	...	...	...
Total Lehigh Valley Coal Company,		620,384.13	609,669.13	187	1,788	8	25	19,783	120	281	3
Delaware and Hudson Canal Company.											
Mill Creek slope,	Plains township,	74,452.07	74,452.07	207.50	123	1	2	1,027	23	17	...
Delaware shaft,	do.	193,028.01	192,655.07	223.75	563	4	10	5,343	15	38	...
Pine Ridge shaft,	Miner's Mills,	193,845.19	188,168.01	248.75	472	...	1	5,710	21	54	...
Laurel Run slope,	Parsons,	101,359.03	101,359.03	210.50	396	...	2	4,565	12	63	...
Total Delaware and Hudson Canal Company,		562,685.10	556,634.18	225.10	1,354	5	15	16,645	71	172	...
Delaware, Lackawanna and Western Railroad Co.											
Hunt shaft, *	Kingston township,	...	...	...	...	...	...	...	...	...	...
Hallstead shaft,	Duryea,	196,389	179,423.10	192 40	481	2	4	6,407	23	66	...
Pettibone shaft,	Kingston township,	127,534.13	106,071.13	200	403	7	11	3,635	24	41	...
Total Delaware Lackawanna and Western Railroad Company,		323,923.13	285,495.03	196.20	884	9	15	10,042	47	107	...
Butler Mine Company, Limited.											
Fernwood shaft,	Jenkins township,	17,413	16,177	84	147	1	...	1,007	6	9	...
Chapman shaft,	do.	73,820	68,402	222	336	1	1	3,783	13	19	1
Butler shaft,											
Schooley shaft,	Exeter,	100,536	90,565	180	306	1	4	4,307	21	28	1
Total Butler Mine Company, Limited,		191,769	175,144	201	789	3	5	9,097	40	56	2
Newton Coal Company.											
Twin shaft,	Pittston,	232,061.16	204,904.05	191	699	1	6	9,810	36	57	4
Ravine shaft,	do.	...	...	...	...	...	1	...	...	...	...
Total Newton Coal Company,		232,061.16	204,904.05	191	699	1	7	9,810	36	57	4
Wyoming Valley Coal Company.											
Harry E. shaft, *	Kingston township,	...	...	...	...	...	...	...	16	...	...
Forty Fort shaft,	do.	111,435	96,308	216.75	329	...	4	3,840	18	35	...
Total Wyoming Valley Coal Company,		111,435	96,308	216.75	329	...	4	3,840	18	35	...
Miscellaneous Coal Companies.											
Bernice drifts,	Bernice, Sullivan county,	76,009.13	71,859.11	222.75	261	...	...	1,323	2	40	1
Bennett shaft,	Plains township,	76,259.14	72,461.14	237.50	161	...	2	2,564	8	26	...
Mill Hollow shaft,	Luzerne borough,	110,390.07	99,677.01	205.06	312	2	4	2,990	17	26	...
Black Diamond shaft,	do.	240,961.10	223,319.11	223.65	492	1	8	7,790	23	44	...
Clear Spring shaft,	West Pittston,	189,391.15	175,510.14	220.65	417	1	5	6,372	21	71	...
Consolidated shaft and slope,	Avoca,	112,009.10	102,835	193	338	...	...	3,995	9	25	1
Elmwood shaft,	Pittston township,	90,985	79,637	181.20	250	...	...	2,844	12	34	...
East Boston shaft,	Kingston township,	203,285.07	198,101.06	225.60	457	2	14	5,922	27	43	...
Fairmount shaft,	Pittston township,	7,000	6,000	214	42	...	...	500	6	5	...
Keystone slope,	Plains township,	107,256	106,387	187.20	320	...	6	6,849	8	40	...

* Idle all the year.

TABLE NO. 2.—*Continued.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.
Columbia shaft,	Marcy township,	116,887	110,178	210.50	322	. . .	1	4,063	8	40	. . .
Phœnix shaft,	do.	55,342	51,342	147.30	326	. . .	1	2,461	8	30	. . .
Avoca shaft,	Avoca,	78,930.07	77,677.15	237	241	1	5	3,509	6	28	. . .
Stevens' slope,	Exeter,	42,752	41,000	250.50	284	3	1	2,841	13	15	. . .
Aurora slope,	Laflin,	108,345.06	107,744.08	178.35	237	. . .	8	2,640	7	42	1
Langcliffe shaft,	Avoca,	85,445	79,534	139.80	369	1	6	9,537	6	38	. . .
Katydid slope,	do.	32,661	30,937	202.25	100	. . .	1	1,075	3	10	1
Babylon shaft,	Duryea,	222,414.16	208,804.01	174.50	321	. . .	3	6,307	12	42	. . .
Mount Lookout shaft,	Wyoming,	206,953.12	193,399.01	193.20	389	3	12	8,048	20	49	1
Morning Star tunnel,	do.	35,940	21,940	180	109	. . .	. . .	1,150	2	6	. . .
Total miscellaneous coal companies,		2,197,199.17	2,058,335.02	205.13	5,748	14	77	82,780	218	654	5

Recapitulation.

Pennsylvania Coal Company,	1,420,271	1,372,119	222.68	3,429	10	15	42,536	188	387	32
Lehigh Valley Coal Company,	620,384.13	609,669.13	187	1,788	8	25	19,783	120	281	3
Delaware and Hudson Canal Company,	562,684.30	556,634.18	225.10	1,354	5	15	16,645	71	172	. . .
Delaware, Lackawanna and Western Railroad Company,	323,925.13	285,495.03	196.20	884	9	15	10,042	47	107	. . .
Butler Mine Company, Limited,	191,769	175,141	201	789	3	5	9,097	40	56	2
Newton Coal Company,	232,061.16	204,904.05	191	699	1	7	9,810	36	57	4
Wyoming Valley Coal Company,	111,435	96,308	216.75	329	. . .	4	3,840	18	35	. . .
Miscellaneous coal companies,	2,197,199.17	2,058,335.02	205.13	5,748	14	77	82,780	218	654	5
Total of all coal companies,	5,659,730.09	5,358,610.01	†205.60	15,020	50	163	194,533	738	1,749	16

† Average time.
There were 7,796 tons of coal shipped to market from the Raub Coal Company screened from culm bank which is not included in this report.

TABLE NO. 3.—*Showing the number of each class of employes at each colliery in the Third Anthracite District during the year 1892.*

7-12-92

NAMES OF COLLIERIES.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand total inside and outside.
	Inside foremen.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door-boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All other company men.	Superintendents, bookkeepers and clerks.	Total outside.	
Pennsylvania Coal Company.															
Barnum 2 shafts,	2	144	144	26	56	31	403	1	4	11	61	51	4	132	535
Shaft No. 13, Central breaker,	3	121	127	21	40	19	331	2	5	18	56	59	1	141	472
Laws shaft, Central breaker,	2	148	126	34	53	24	387	1	4	14	66	50	1	136	523
Shafts No. 9 and 10,	2	93	93	17	33	7	245	1	3	8	57	19	1	89	334
Shafts No. 1 and 8, Slope No. 4, Shaft No. 7, Shaft No. 4, Hoyte shaft, Ewing breaker,	4	175	169	42	53	21	464	2	10	21	118	88	2	241	705
Shafts No. 5, 6 and 11,	3	91	106	28	48	8	284	1	4	12	58	33	1	109	393
Shaft and tunnels No. 14,	2	115	121	25	42	11	316	1	3	16	75	55	1	151	467
Total Pennsylvania Coal Company,	18	887	886	193	325	121	2,430	9	33	100	491	355	11	999	3,429
Lehigh Valley Coal Company.															
Prospect, 2 shafts and slope,	3	101	101	44	73	10	332	1	9	22	103	63	4	202	534
Midvale slope,*															
Wyoming shaft and slope,	1	40	25	18	26	7	117	1	6	10		18	2	37	154
Henry shaft,	1	59	39	42	54	15	210	1	6	12	70	39	4	132	342
Maltby shaft,	1	33	15	36	25	4	174	1	4	9	86	36	3	138	312
Exeter shaft,	2	50	40	30	22	3	147	1	5	8	49	35	3	101	248
Heidelburg slope,*															
Heidelburg shaft,	1	33	33	21	16		104	1	4	7	65	15	2	94	198
Total Lehigh Valley Coal Company,	9	376	253	191	216	39	1,084	6	34	68	373	206	17	704	1,788

* Idle all the year.

TABLE NO. 3.—*Continued.*

NAMES OF COLLIERIES.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand total inside and outside.
	Inside foremen.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door-boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All other company men.	Superintendents, bookkeepers and clerks.	Total outside.	
Delaware and Hudson Canal Company.															
Mill Creek slope,	1	13	24	11	9	3	61	1	3	8	30	20	. . .	62	123
Delaware shaft,	1	67	67	30	39	20	224	1	4	10	84	39	1	139	363
Pine Ridge shaft,	1	90	98	42	48	10	289	1	5	15	115	45	2	183	472
Laurel Run slope,	1	67	68	30	50	15	231	1	5	7	102	49	1	165	396
Total Delaware and Hudson Canal Company,	4	237	257	113	146	48	805	4	17	40	331	153	4	549	1,354
Delaware, Lackawanna and Western Railroad Company.															
Hunt shaft,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Hallstead shaft,	2	125	115	38	55	7	342	1	18	9	74	36	1	139	481
Pettibone shaft,	1	83	83	43	28	11	249	1	22	10	88	33	. . .	154	403
Total Delaware, Lackawanna and Western R. R. Co.. . .	3	208	198	81	83	18	591	2	40	19	162	69	1	293	884
Butler Mine Company, Limited.															
Fernwood shaft,	1	37	37	6	11	3	95	1	2	2	37	9	1	52	147
Chapman shaft,	1	78	70	30	22	3	204	1	4	10	74	42	1	132	336
Butler shaft,															
Schooley shaft,	1	72	52	28	23	16	192	1	4	8	67	33	1	114	306
Total Butler Mine Company, Limited,	3	187	159	64	56	22	491	3	10	20	178	84	3	298	789
Newton Coal Company.															
Twin shaft,	1	150	150	38	47	10	396	2	12	16	110	60	5	205	601
Ravine shaft,	1	35	35	8	15	4	98	. . .	. . .	. . .	. . .	. . .	. . .	. . .	98
Total Newton Coal Company,	2	185	185	46	62	14	494	2	12	16	110	60	5	205	699

Wyoming Valley Coal Company.															
Harry E. shaft	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Forty Fort shaft	2	70	70	33	29	11	215	1	5	8	47	51	2	114	329
Total Wyoming Valley Coal Company	2	70	70	33	29	11	215	1	5	8	47	51	2	114	329
Miscellaneous Coal Companies.															
Bernice drifts	1	130	. . .	4	18	4	157	1	3	5	64	30	1	104	261
Bennett shafts	1	29	29	12	29	2	102	2	3	4	31	16	3	59	161
Mill Hollow shaft	2	100	45	20	45	6	218	2	4	8	38	40	2	94	312
Black Diamond shaft	1	130	100	25	57	9	322	1	7	14	110	35	3	170	492
Clear Spring shaft	2	93	93	52	47	37	324	1	4	7	44	34	3	93	417
Consolidated shaft and slope	2	73	70	12	28	8	193	1	8	10	70	53	3	145	338
Elmwood shaft	1	50	50	14	27	3	145	1	3	4	65	28	4	105	250
East Boston shaft	3	100	63	54	50	12	282	1	5	13	93	59	5	175	457
Fairmount shaft	1	12	10	4	2	. . .	29	1	1	1	4	6	. . .	13	42
Keystone slope	1	65	75	11	41	7	200	. . .	5	6	80	26	3	120	320
Columbia shaft	2	65	65	15	36	8	191	1	7	4	85	30	4	131	322
Phœnix shaft	1	65	65	15	22	10	178	1	7	5	100	30	4	147	325
Avoca shaft	1	60	40	20	20	7	148	1	4	4	52	29	3	93	241
Stevens slope	1	58	58	12	22	4	155	1	4	9	85	28	2	129	284
Annora slope	1	53	63	22	25	3	167	1	6	10	36	21	3	71	238
Langcliffe shaft	2	100	100	24	38	11	275	1	5	6	50	30	2	94	369
Katydid shaft	1	25	23	3	4	1	57	1	2	5	19	14	2	43	100
Babylon shaft	1	90	86	10	36	9	232	1	8	7	29	42	2	89	321
Mount Lookout shaft	2	106	100	27	41	16	292	2	7	11	48	25	4	97	389
Morning Star tunnel	1	40	15	4	3	1	64	1	1	2	15	23	3	45	109
Total miscellaneous coal companies	28	1,444	1,150	360	591	158	3,731	22	94	135	1,112	599	55	2,017	5,748

Recapitulation.

Pennsylvania Coal Company	18	887	886	193	325	121	2,430	9	33	100	491	355	11	999	3,429
Lehigh Valley Coal Company	9	376	253	191	216	39	1,084	6	34	68	373	206	17	704	1,788
Delaware and Hudson Canal Company	4	237	257	113	146	48	805	4	17	40	331	153	4	549	1,354
Delaware, Lackawanna and Western Railroad Company	3	208	198	81	83	18	591	2	40	19	162	69	1	293	884
Butler Mine Company, Limited	3	187	159	64	56	22	491	3	10	20	178	84	3	298	789
Newton Coal Company	2	185	185	46	62	14	494	2	12	16	110	60	5	205	699
Wyoming Valley Coal Company	2	70	70	33	29	11	215	1	5	8	47	51	2	114	329
Miscellaneous coal companies	28	1,444	1,150	360	591	158	3,731	22	94	135	1,112	599	55	2,017	5,748
Total of all coal companies	69	3,594	3,158	1,081	1,508	431	9,841	49	245	406	2,804	1,577	98	5,179	15,020

TABLE NO. 4.—*List of Fatal Accidents which occurred in and about the Mines of the Third Anthracite Mine District, for the year ending December 31, 1892.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 28.	1	Anthony Madden, ...	Laborer, ...	26	S.	. .	No. 4 shaft, ...	Luzerne county, ...	Fatally injured by being crushed between car and door; died February 1, 1892.
29.	2	Joseph Stephens, ...	Miner, ...	55	M.	. .	Mount Lookout shaft, . .	do.	Fatally injured by fall of rock; died while being taken home.
Feb. 4.	3	Michael Farley, ...	Miner, ...	45	M.	3	Pettibone shaft, ...	do.	Killed by fall of bony coal at face of chamber.
5.	4	Peter Eckroth, ...	Slate picker, . .	14	S.	. .	Mill Hollow breaker, . . .	do.	Killed by being caught by line shaft in breaker.
15.	5	Lawrence Morahan, . . .	Miner, ...	57	M.	8	No. 13 shaft, ...	Lackawanna county, . .	Instantly killed by fall of coal in an entrance he was driving.
29.	6	Geo. Juginski, ...	Laborer, ...	29	S.	. .	Mount Lookout shaft, . .	Luzerne county, ...	Juginski and his miner by the name of Sartin were taking down roof rock, the miner telling Juginski to get back out of the way, but the laborer could not understand him; the rock fell on Juginski killing him and severely injuring Sartin, the miner.
Mar. 3.	7	Geo. Varga, ...	Miner, ...	24	S.	. .	Twin shaft, ...	do.	Instantly killed by a blast fired in an entrance blowing through.
11.	8	Martin Clonan, ...	Driver, ...	15	S.	. .	Barnum breaker, ...	do.	Crushed to death by being caught between culm chute and railroad cars.
15.	9	Eagen McCaffery, ...	Laborer, ...	32	S.	. .	Mill Creek slope, ...	do.	Killed by fall of roof while taking out pillars.
Apr. 6.	10	Patrick Loftus, ...	Door tender, . .	14	S.	. .	Barnum shaft, ...	do.	Killed by a runaway car in a chamber while leading a mule.
8.	11	Geo. Henderson, Jr., . . .	Miner, ...	25	M.	2	East Boston shaft, . . .	do.	Fatally injured by fall of rock; died after being taken home.
20.	12	Michael McManus, ...	Driver, ...	14	S.	. .	Delaware breaker, ...	do.	Fatally injured by being crushed between mine cars; died next day.
23.	13	Frank Letkouski, ...	Laborer, ...	27	M.	. .	Stevens slope, ...	do.	Killed by a blast; he went back thinking it had missed.
May 9.	14	Patrick Griffin, ...	Miner, ...	40	M.	6	Hallstead shaft, ...	do.	Fatally injured by fall of rock; died same day.
14.	15	Daniel Pugh, ...	Miner, ...	19	S.	. .	Maltby shaft, ...	do.	Instantly killed by fall of rock in a rock-tunnel where he was working.
25.	16	Richard Thomas, ...	Laborer, ...	35	S.	. .	Exeter shaft, ...	do.	Fatally injured by falling and striking his head against the rib, fracturing his skull; died same evening.

28,	17	Joseph Catoach,	Laborer,	28	M.	1	Clear Spring shaft,	do.	Instantly killed by a blast fired in another chamber.
June 7,	18	Shutes Thomas,	Laborer,	35	M.	2	Schooley shaft,	do.	Killed by a fall of rock.
9,	19	Joseph Butcotski,	Miner,	33	M.		Delaware shaft,	do.	Killed by a fall of top coal.
15,	20	Charles Williams,	Headman,	22	S.		Barnum No. 2 shaft,	do.	Killed by falling down shaft.
20,	21	James Kiely,	Miner,	34	M.	3	Langelille shaft,	do.	Fatally injured by blast blown through the pillar; died, June 22.
30,	22	Joseph Smith,	Laborer,	25	S.		Exeter shaft,	do.	Fatally injured by fall of rock; died when taken home.
July 1,	23	Edward Lancaster,	Driver,	16	S.		Pettibone shaft,	do.	Fatally injured by his head being caught between cars; died, July 5.
5,	24	Angle Gascoblitz,	Laborer,		S.		Chapman shaft,	do.	Killed by a fall of rock.
14,	25	Silas Manley,	Miner,	43	M.	1	No 9 shaft,	do.	Fatally crushed by fall of rock; died same evening.
22,	26	Wm. Lester,	Miner,	35	S.		Pettibone shaft,	do.	Fatally burned by an explosion of gas; died, Aug. 6.
25,	27	Geo. Jaeck,	Footman,	30	S.		Central breaker,	do.	Fatally injured by getting under cage at breaker; died, Aug. 10.
27,	28	Anthony Miller,	Miner,	30	S.		Stevens slope,	do.	Instantly killed by runaway car on the slope.
29,	29	Frank Javinski,	Laborer,	30	M.		Mount Lookout shaft,	do.	Killed by a fall of rock.
Aug. 4,	30	James Conroy,	Miner,	40	S.		Pettibone shaft,	do.	Fatally burned by an explosion of gas; died, August 7.
23,	31	Patrick Rowan,	Miner,	28	S.		Heidleburg shaft,	do.	Killed by fall of coal while robbing pillars.
24,	32	Anthony Cahuski,	Laborer,	30	S.		Stevens slope,	do.	Fatally injured by a premature blast; died, August 27.
Sept. 9,	33	Patrick Nolan,	Laborer,	16	S.		No. 13 shaft,	Lackawanna county,	Killed by a fall of rock while working with his father in a chamber.
14,	34	Mike Brickawich,	Miner,	35	M.	1	Exeter shaft,	Luzerne county,	Killed by a fall of rock.
14,	35	Patrick Murray,	Miner,	21	S.		No. 14 tunnel,	do.	Killed by a fall of rock in face of heading.
26,	36	Geo. Frank,	Miner,	45	M.	5	Hallstead shaft,	do.	Killed by a fall of top coal.
26,	37	Joseph Pryor,	Miner,	26	M.		Delaware shaft,	do.	Fatally burned by an explosion of powder; died next day.
Oct. 6,	38	Geo. Skurch,	Miner,	25	S		Prospect shaft,	do.	Killed while standing a prop, by a fall of roof rock.
7,	39	Alex. Bell,	Miner,	33	M.	2	Avoca shaft,	do.	Killed by a blast blown through pillar
20,	40	Emrow Cymko,	Miner,	34	M.	5	Maltby shaft,	do.	Killed by a fall of rock; he was working at it to take it down.
21,	41	Joseph Abbott,	Miner,	48	S.		Black Diamond shaft,	do.	Killed by a premature blast in an entrance he was driving.
25,	42	Patrick Reip,	Slate picker,	16	S.		Fernwood breaker,	do.	Smothered in the Buckwheat coal chute.
25,	43	Chas. Roberts,	Laborer,	36	M.	5	East Boston shaft,	do.	Killed by a fall of rock.
Nov. 5,	44	Wm. Evans,	Driver,	19	S.		Pettibone shaft,	do.	Killed by a car striking the head-block causing rear end to leave the track and coming on him.
4,	45	Anthony Septko,	Miner,	28	S.		Exeter shaft,	do.	Killed by a fall of rock.
7,	46	Peter Rudor,	Laborer,	24	S.		Pettibone shaft,	do.	Killed by falling down shaft from the Bennett seam while trying to get on the cage
22,	47	Wm. Simmons,	Laborer,	30	S.		Delaware shaft,	do.	Killed by a fall of rider coal.
28,	48	David Griffith,	Miner,	58	S.		Pettibone shaft,	do.	Killed by a fall of top coal.
Dec. 12,	49	Anthony Mumley,	Miner,	57	M.	5	No. 14 shaft,	do.	Fatally injured by a fall of rock he was taking down; died, December 14.
30,	50	George Rolko,	Laborer,	33	M.	2	Mill Hollow shaft,	do.	Instantly killed by a fall of rock in a chamber.

TABLE NO. 5.—*List of Non-fatal accidents which occurred in and about the mines of the Third Anthracite Mine District for the year ended December 31, 1892.*

Date of accident.	No. of accident.	NAME OF PERSON	Occupation.	Age.	Married.	Name of Colliery.	Location County.	Nature and Cause of Accident.
Jan. 4.	1	Dennis Connell.	Driver.	17	S.	Prospect shaft.	Luzerne county.	Face severely cut and bruised by a kick from a mule.
7.	2	John Samuel.	Miner.	40	M.	Pettibone shaft.	do.	Face painfully bruised by a cap piece of a prop which he was standing.
7.	3	Benjamin Sanders.	Miner.	33	S.	Wyoming shaft.	do.	Painfully injured by the premature explosion of a blast.
8.	4	Frank Hoodack.	Miner.	28	S.	Babylon shaft.	do.	Foot and knee painfully injured by a fall of rock.
12.	5	William Hart.	Laborer.	45	S.	Laurel Run slope.	do.	Leg fractured by slipping on rail.
15.	6	George Skaurak.	Miner.	22	S.	Exeter shaft.	do.	Leg broken by fall of rock in the adjoining chamber.
15.	7	John Adelman.	Footman.	40	M.	Delaware shaft.	do.	Leg badly crushed by being caught between cars at foot of shaft.
16.	8	James Boylon.	Runner.	30	S.	Delaware shaft.	do.	Toe crushed, necessitating amputation, by being caught under car wheel.
21.	9	John W. Williams.	Miner.	25	M.	Stevens' slope.	do.	Leg broken by blast; he thought the blast had missed; went back and the shot exploded.
23.	10	Andrew Kelley.	Driver.	19	S.	Mill Hollow shaft.	do.	Hip seriously bruised by being thrown by a mule under moving cars.
27.	11	Richard Bly.	Miner.	35	M.	Clear Spring shaft.	do.	Head and body seriously bruised by falling fourteen feet down shaft.
27.	12	Frank Bliss.	Footman.	22	S.	Twin shaft.	do.	Head severely cut by coal falling down shaft.
29.	13	Anthony Lokeliski.	Miner.	26	M.	Delaware shaft.	do.	Hand painfully cut by slipping on ice and falling.
Feb. 1.	14	Martin Kresge.	Miner.	30	M.	Keystone slope.	do.	Arm broken by a car running out of his chamber.
1.	15	Robert Thompson.	Helper.	15	S.	Clear Spring shaft.	do.	Kicked in the face by the mule he was driving.
5.	16	Michael Corcoran.	Runner.	19	S.	Keystone slope.	do.	Teeth knock out by a kick from a mule.
11.	17	William Boyd.	Miner.	32	M.	Hoyte shaft.	do.	Two ribs broken; squeezed between car and pillar.
11.	18	Joseph Savage.	Laborer.	16	S.	Annora tunnel.	do.	Painfully injured by fall of rock.
16.	19	John Thomas.	Footman.	35	S.	Mount Lookout shaft.	do.	Badly bruised by getting in front of moving car.
17.	20	Mike Ryder.	Driver.	18	S.	Prospect shaft.	do.	Hips squeezed by being caught between empty car and prop.
18.	21	John Whitely.	Footman.	22	S.	Mount Lookout shaft.	do.	Leg broken; he got into the carriage pit by some means and the cage came down on him.

18,	22	Richard James	Miner	33	M.	Pettibone shaft	do.	These three men were painfully burned by an explosion of gas, caused by their own negligence in closing a door where they were working, at the end of a brattice, which caused gas to accumulate above them.
18,	23	Patrick Degan	Trackman	42	M.	Pettibone shaft	do.	
18,	24	John Reilly	Laborer	35	M.	Pettibone shaft	do.	
19,	25	Daniel O'Brian	Co. laborer	63	M.	Bennett shaft	do.	While Rawlings was running a trip of cars down the run he missed his sprags, the trip of cars jumped the track, knocking out three props and letting the roof down on them while working to get the cars on the track again, breaking O'Brian's leg and Rawling's arm.
19,	26	Patrick Rawlings	Runner	24	S.	Bennett shaft	do.	
22,	27	William Lewis	Miner	50	M.	Twin shaft	do.	Head severely injured by a premature blast.
22,	28	Patrick Joyce	Co. laborer	20	S.	Delaware shaft	do.	Small bone in leg broken by a rail falling from a car on him.
29,	29	Isaac Sartin	Miner	28	M.	Mount Lookout shaft	do.	Sartin and Overet were seriously injured by fall of rock which they were trying to take down; Sartin told Overet to go back, but he could not understand him.
29,	30	Stanley Overet	Laborer	29	S.	Mount Lookout shaft	do.	
Mar. 5,	31	Mike Lawbaugh	Laborer	30	M.	Keystone slope	do.	Back severely cut and bruised by a fall of rock.
8,	32	William Niso	Laborer	25	S.	Avoca shaft	do.	Side and back injured by a fall of rock.
9,	33	John Wallon	Driver	15	S.	Twin shaft	do.	Leg broken by falling under an empty trip of cars.
9,	34	Anthony Roach	Miner	35	S.	Mount Lookout shaft	do.	Seriously injured by going back to his blast, which he thought had missed.
14,	35	Charles Grillz	Door boy	15	S.	East Boston shaft	do.	Fingers crushed by being caught between stretcher hook and coupling.
16,	36	John Markes	Laborer	42	M.	Exeter breaker	do.	Hand badly crushed by being caught in elevator.
21,	37	James Clune	Miner	33	M.	Wyoming shaft	do.	Painfully injured by going back to a shot which he thought had missed fire.
23,	38	William Robertson	Miner	42	M.	Hoyte shaft	do.	Seriously injured by fall of rock.
23,	39	Mike Martin	Miner	37	M.	Wyoming shaft	do.	Face and hands burned by gas.
29,	40	Joseph Kryzan	Miner	24	S.	Mount Lookout shaft	do.	Face and hands burned by gas.
April 4,	41	John Gavin	Miner	35	S.	Wyoming shaft	do.	Leg broken and head injured by fall of coal.
4,	42	Daniel Hagarty	Slate picker	15	S.	Prospect breaker	do.	Arm broken by falling from a plank in the breaker.
18,	43	John Adamshick	Laborer	40	M.	Mill Hollow shaft	do.	Head cut and body bruised by a blast blown through the pillar.
25,	44	Adam Beechere	Miner	48	M.	Mount Lookout shaft	do.	Painfully burned by gas.
25,	45	Henry R. Jones	Miner	33	M.	Babylon shaft	do.	Hip and thigh bruised by being caught between cars and pillar on plane.
25,	46	Mike Booring	Miner	30	M.	Twin shaft	do.	Severely injured while mining out some coal by a fall of rock.
27,	47	Patrick Joyce	Miner	28	M.	Slope No. 4	do.	Large toe broken by fall of coal.
29,	48	Mathew Scott	Rockman	20	S.	Black Diamond shaft	do.	Seriously injured by being squeezed between car and pillar.
30,	49	Mike Sale	Laborer	41	M.	East Boston shaft	do.	Head and back bruised by fall of rock.
May 4,	50	George Matchaco	Laborer	36	S.	Annora slope	do.	Leg broken by fall of top coal.
4,	51	Frank Julinski	Laborer	28	S.	Annora slope	do.	Slightly injured by the same fall of coal.
6,	52	W. R. Evans	Miner	44	M.	Pettibone shaft	do.	Evans and his laborer, Watiski, were painfully burned on face and hands by gas which had accumulated in their chamber.
6,	53	Frank Watiskie	Laborer	35	M.	Pettibone shaft	do.	
7,	54	Thomas Brown	Miner	32	S.	Pettibone shaft	do.	Brown and his laborer were seriously burned on face and hands by gas in their chamber.
7,	55	Samuel Jones	Laborer	36	M.	Pettibone shaft	do.	
7,	56	Mathew Christian	Miner	51	M.	East Boston shaft	do.	Eye and ear cut by fall of slate he was taking down.
10,	57	James Curley	Miner	20	S.	Avoca shaft	do.	Those three men were severely bruised by a fall of top rock, while taking a rest in their chamber.
10,	58	John O'Brien	Miner	53	M.	Avoca shaft	do.	
10,	59	James O'Brien	Laborer	19	S.	Avoca shaft	do.	

TABLE NO. 5.—*Continued.*

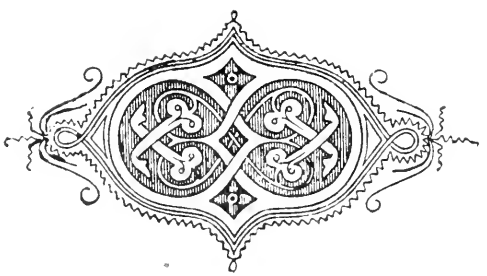
Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	Name of Colliery.	Location—County.	Nature and Cause of Accident
May 12.	60	Jacob Bitner	Miner,	28	S.	Mount Lookout shaft.	Luzerne county.	Head and back bruised by fall of top rock.
13.	61	Fred. Bose,	Driver,	16	S.	Chapman shaft,	do.	Both legs broken by falling under cars.
14.	62	Daniel Williams	Miner,	34	M.	Maltby shaft,	do.	Leg broken by fall of rock.
14.	63	Joseph Callgallion.	Miner,	40	M.	Forty Fort shaft,	do.	Face and hands painfully burned by gas.
19.	64	Thomas Lewis,	Miner.	48	S.	Mill Creek slope,	do.	Leg broken in three places and hip severely bruised by a fall of rock.
25.	65	Frank Block.	Laborer,	27	M.	Hallstead shaft,	do.	Severely injured by fall of rock.
26.	66	John Laughney,	Foot boy,	17	S.	No. 9 shaft,	do.	Large toe broken by being caught by cage in shaft.
27.	67	Thomas Phillips,	Driver,	16	S.	Hallstead breaker,	do.	Severely bruised by falling under a culm car.
June 2.	68	Stephen Lloyd.	Runner.	18	S.	Keystone slope,	do.	Fingers crushed while coupling cars, necessitating amputation.
11.	69	W. J. Stephens.	Laborer,	60	M.	Mount Lookout shaft,	do.	Leg broken by being caught between car and prop.
13.	70	Benjamin Jenkins,	Driver,	16	S.	Hoyte shaft,	do.	Leg seriously lacerated by falling under cars.
15.	71	Joseph Bigger.	Miner.	33	M.	East Boston shaft,	do.	Head and nose severely cut by fall of slate.
20.	72	Vitchlus Carades.	Laborer.	25	S.	Langcliffe shaft,	do.	Painfully injured by blast blown through pillar.
21.	73	John Bonrard.	Laborer,	40	M.	Forty Fort shaft,	do.	Head cut and bruised by fall of rock.
22.	74	Sampson Nankivell	Miner,	49	M.	Henry shaft,	do.	Arm cut off and leg broken by fall of rock.
23.	75	William M. Mitchell.	Driver.	18	S.	Annora slope.	do.	Severely injured on back by being thrown from rear end of car.
23.	76	Peter Gray.	Fire-boss,	49	M.	Mill Creek shaft,	do.	Burned by gas while making examination of the workings.
24.	77	William G. Pritchard.	Miner,	40	M.	East Boston shaft,	do.	Ankle painfully bruised by coal sliding down on him.
27.	78	Julian Rigiler.	Laborer.	36	M.	Delaware shaft.	do.	Severely injured by fall of rock.
28.	79	John Green.	Miner,	35	S.	Annora slope.	do.	Green and his laborer, Saushock, were severely injurnd by a fall of coal they were taking down.
28.	80	Peter Soushock.	Laborer.	29	M.	Annora slope,	do.	
29.	81	Edwin Crevis,	Laborer,	18	S.	East Boston shaft,	do.	Painfully cut and bruised by coal thrown from a blast.
29.	82	George Christanky.	Miner,	40	M.	Keystone slope.	do.	Leg bruised and cut by fall of top coal.
July 2.	83	George Cadwalader,	Miner.	41	M.	East Boston shaft,	do.	Leg fractured by coal thrown from a blast.
6.	84	George Zianze.	Laborer,	25	M.	Langcliffe shaft,	do.	Seriously injured by a fall of rock.
8.	85	Richard James,	Miner,	36	M.	Pettibone shaft,	do.	Richard James and his laborer, Thomas, were painfully burned on their faces and hands by an explosion of gas.
8.	86	William H. Thomas,	Laborer,	35	M.	Pettibone shaft,	do.	
12.	87	William Burnside,	Miner.	40	M.	Katydid slope,	do.	Leg broken by fall of roof rock.

13,	88	Mike Lewis,	Laborer,	18	S.	Black Diamond shaft,	do.	Foot painfully bruised by a car wheel passing over it.
13,	89	Joseph Highstrike,	Miner,	30	M.	Twin shaft,	do.	Face and hands severely burned by gas.
14,	90	John Hillk,	Miner,	23	S.	Prospect breaker,	do.	Collar bone and arm broken by being crushed between cars.
14,	91	John Legins	Laborer,	31	M.	Maltby shaft,	do.	Severely bruised on back by a fall of rock.
18,	92	Thomas Moran,	Laborer,	34	M.	No. 14 tunnel,	do.	Skull fractured by a piece of coal thrown from a blast.
18,	93	Mike Sullivan,	Miner,	48	M.	Delaware shaft,	do.	Painfully injured by a prop falling on him while standing it.
18,	94	Peter Bunk,	Laborer,	42	M.	Delaware shaft,	do.	Hand seriously bruised by being caught between car and rib.
18,	95	John Brennen,	Driver,	17	S.	Delaware shaft,	do.	Foot bruised by a mule stepping on it.
20,	96	Mike Walling,	Laborer,	30	S.	Exeter shaft,	do.	These four men were laboring for a miner by the name of Kelly who, in the course of his day's work, cut a feeder of gas which accumulated while they were waiting for a car. The miner going home at the time notified the fire-boss in regard to the feeder who went to put up some brattice, the car came at this time when the fire-boss told Walling to keep out until he had got the brattice up to take the gas out. The laborers being anxious to finish their day's work disobeyed the fire-boss' orders, going into the face of the chamber and igniting the gas, severely burning all four of them.
20,	97	Andrew Pastro,	Laborer,	25	S.	Exeter shaft,	do.	
20,	98	Andrew Condit,	Laborer,	28	S.	Exeter shaft,	do.	
20,	99	Paul Megeto,	Laborer,	25	S.	Exeter shaft,	do.	
25,	100	Thomas Nemetz,	Miner,	39	M.	East Boston shaft,	do.	Toes cut off by a rock falling on them.
28,	101	George Wallskus,	Laborer,	32	S.	Clear Spring shaft,	do.	Head cut and ankle sprained by a fall of rock.
Aug. 1,	102	William Wovage,	Laborer,	32	M.	Schooly shaft,	do.	Painfully bruised by a fall of rock.
3,	103	John Steed,	Miner,	38	M.	Schooly shaft,	do.	Steed and Termuley were seriously injured by
3,	104	John Termuley,	Laborer,	28	S.	Schooly shaft,	do.	fall of rock in the face of their chamber.
4,	105	John Horchavitch,	Miner,	45	M.	Mount Lookout shaft,	do.	Back bruised by fall of rock.
6,	106	William Jellery,	Driver,	15	S.	Maltby shaft,	do.	Back painfully bruised. His clothes caught on latch of car door pulling him between the car and a pillar.
8,	107	Pat Gibbons,	Laborer,	25	S.	Clear Spring shaft,	do.	Face painfully burned by gas.
9,	108	Lucas Cosheska,	Miner,	48	M.	East Boston shaft,	do.	Head cut and back bruised by a fall of bone.
11,	109	Mike McLaughlin,	Miner,	45	M.	Phœnix shaft,	do.	Severely injured by coal thrown from a blast.
16,	110	John Smith,	Driver,	16	S.	Black Diamond shaft,	do.	Fingers crushed while coupling cars necessitating amputation.
17	111	Fred. Barrett,	Timberman,	27	M.	Black Diamond shaft,	do.	Painfully burned; his clothing caught fire from his lamp.
17,	112	Mike Valko,	Miner,	33	M.	Midvale slope,	do.	Face and hands severely burned by gas.
19,	113	Mike Hunt,	Laborer,	38	S.	Black Diamond shaft,	do.	Leg severely bruised by rock sliding from the gob on him.
22,	114	Frank Cornuski,	Miner,	28	S.	Delaware shaft,	do.	Back bruised by fall of rock.
26,	115	John Breckenridge,	Door boy,	15	S.	Black Diamond shaft,	do.	Leg broken while playing at the dinner hour.
29,	116	Pat Dougherty,	Driver,	16	S.	Delaware shaft,	do.	Arm crushed by being run over by car necessitating amputation.
30,	117	Isaac Rothery,	Driver,	18	S.	Exeter shaft,	do.	Three ribs broken by a runaway car.
Sept. 1,	118	Louis Mahodil,	Laborer,	20	S.	Hallstead shaft,	do.	Both legs broken by a fall of roof.
5,	119	Ralph Chapman,	Slope footman,	17	S.	No. 7 shaft,	do.	Head seriously bruised, supposed to have been caught between cars.
8,	120	Edward Stetler,	Driver,	17	S.	Langcliffe shaft,	do.	Head bruised by being caught between cars and rib.
12,	121	Jacob Schrebble,	Miner,	44	M.	Mill Hollow shaft,	do.	Leg broken by fall of slate.

TABLE NO. 5.—*Continued.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	Name of Colliery.	Location County.	Nature and Cause of Accident.
Sept. 12.	122	Thomas Labrick,	Miner,	47	M.	Maltby shaft,	Luzerne county,	Head painfully cut by a fall of coal.
14.	123	John Newton,	Miner,	42	M.	Langcliffe shaft,	do.	Painfully cut and bruised by being run over by cars on gravity plane.
11.	124	James Gallagher,	Miner,	34	M.	No. 14 tunnel,	do.	Severely bruised by a fall of rock.
15.	125	Peter Hustlipeek,	Laborer,	17	S.	Clear Spring shaft,	do.	Painfully bruised by a fall of rock.
22.	126	Peter Hogan,	Miner,	27	S.	Annora slope,	do.	Leg broken by a fall of rock.
30.	127	John O'Donnell,	Miner,	29	M.	No. 1 shaft,	do.	Severely bruised by a fall of rock.
Oct. 3.	128	Mike Varnavski,	Miner,	30	M.	East Boston shaft,	do.	Head and shoulder bruised by a premature blast.
3.	129	George Smith,	Footman,	22	M.	Maltby shaft,	do.	Thumb and fingers cut off by coal falling down shaft.
4.	130	George Gevocearwich,	Laborer,	33	S.	Keystone slope,	do.	Painfully bruised; while pushing car up his chamber, his feet slipped and the car came back on him.
7.	131	John Eichorn,	Miner,	32	M.	East Boston shaft,	do.	Face and hands painfully burned by gas.
8.	132	John Sheridan,	Company lab.,	18	S.	Black Diamond shaft,	do.	Severely squeezed between car and pillar.
12.	133	Andrew Tincho,	Miner,	36	M.	Exeter shaft,	do.	Foot painfully bruised by a fall of rock.
12.	134	Morgan Kanlatkis,	Laborer,	27	S.	East Boston shaft,	do.	Severely burned by gas.
15.	135	George Fulton,	Slate picker,	16	S.	East Boston breaker,	do.	Hand seriously bruised while trying to couple cars.
20.	136	Mike Besuko,	Laborer,	25	S.	Pettibone shaft,	do.	Face and arms cut and bruised by fall of coal.
27.	137	Stephen Kasteuski,	Driver,	21	S.	Hallstead shaft,	do.	Leg and thigh bruised by falling under cars.
Nov. 1.	138	John Callaghan,	Mine carpenter,	61	M.	No. 13 shaft,	Lackawanna county,	Hip dislocated by being struck by a mine car while repairing the track.
2.	139	Frank Carroll,	Miner,	26	M.	Mount Lookout shaft,	Luzerne county,	Carroll and Cush, his laborer, were severely injured by a premature blast caused by the miner cutting the squib too short.
2.	140	John Cush,	Laborer,	28	M.	Mount Lookout shaft,	do.	
2.	141	Anthony Boltruziter,	Laborer,	27	S.	Babylon shaft,	do.	Arm broken and otherwise injured by fall of rock.
7.	142	John Austin,	Engineer,	24	M.	Prospect shaft,	do.	Ankle sprained by jumping from the cage before it had landed.
7.	143	John Mishnelly,	Miner,	27	S.	Schooley shaft,	do.	Severely injured by a premature blast.
9.	144	George Thompson,	Miner	31	S.	Pine Ridge shaft,	do.	Hip fractured by a fall of top coal.
11.	145	Valentine Gorograntz,	Miner,	40	M.	Mill Hollow shaft,	do.	Leg painfully bruised by a car jumping the track on him.
12.	146	Michael Callahan,	Company lab.,	58	M.	Langcliffe breaker,	do.	Leg broken by being caught between bumpers of cars under the breaker.
17.	147	James Hosey,	Miner,	50	M.	Forty Fort shaft,	do.	Leg broken by fall of rider coal.
18.	148	Frank Bolish,	Driver,	17	S.	Twin shaft,	do.	Leg broken by mule falling on him.
21.	149	John Sunday,	Breaker oiler,	18	S.	Midvale breaker,	do.	Finger cut off while oiling the machinery in the breaker.

26	150	William Houser,	Loader,	16	S.	Laurel Run breaker,	do.	Arm broken by falling from the cars at breaker.
28.	151	Martin Walsh,	Miner,	54	S.	No. 4 shaft,	do	Neck painfully burned and leg bruised by an explosion of powder.
Dec. 3.	152	John Shober,	Miner,	45	M.	Black Diamond shaft,	do.	Painfully burned by gas, was forbidden by the fire-boss to go into his chamber on account of gas.
5.	153	John P. Bose,	Miner,	36	M.	Langcliffe shaft,	do.	Head injured by a prop falling on him.
6.	154	John Farington,	Company lab.,	60	M.	Forty Fort shaft,	do.	Hip broken by a fall of rock on heading road while taking up track.
6.	155	George Bolses,	Laborer,	24	S.	Ravine shaft,	do.	Head cut by a fall of rock.
7.	156	Morgan Kaniapkiski,	Laborer,	27	S.	East Boston shaft,	do.	Face and hands burned by gas.
12.	157	Patrick Quinn,	Company lab.,	56	M.	No. 5 shaft,	do.	Collar bone broken by being caught between cars while coupling.
15.	158	John Melvin,	Driver,	17	S.	Annora tunnel,	do.	Painfully bruised by being caught between car and prop.
19.	159	William Evans,	Miner,	45	M.	Columbia shaft,	do.	Back and arm severely cut and bruised by a fall of top coal.
19.	160	John Harrison,	Laborer,	25	M.	No. 14 shaft,	do.	Arm broken by being kicked by a mule.
20.	161	Patrick Marrich,	Door boy,	15	S.	No. 14 shaft,	do.	Arm broken by falling on track in front of cars.
28.	162	John Scott,	Miner,	38	M.	Avoca shaft,	do.	Seriously injured by falling in front of loaded car in his chamber.
30.	163	James Hefferan,	Miner,	29	M.	No. 6 shaft,	do.	Head cut and otherwise bruised by coal thrown from a blast.



FOURTH ANTHRACITE DISTRICT.

(LUZERNE COUNTY.)

OFFICE OF INSPECTOR OF MINES,
WILKES-BARRE, PA., *February 6, 1893.*

HON. THOMAS J. STEWART,
Secretary of Internal Affairs:

SIR: In accordance with the requirements of section ten, article two, of the act of June 2, 1891, I have the honor of presenting my annual report as Inspector of Mines for the Fourth Anthracite District, for the year 1892.

It contains tabulated statements of the condition of the ventilation and of the fatal and non-fatal accidents; also tables of the production of coal and number of employes working in and about the mines.

It also contains articles on the condition of the mines and on the improvements effected during the year 1892.

The quantity of coal produced was 7,549,605 tons, being 89,645 tons less than the production of 1891. The number of fatal accidents was 83, being 13 less than those of 1891.

The number of serious non-fatal injuries was 180, being twelve more than the number injured in 1891.

The number of widows was 42, and the number of children under 21 years of age was 137.

Yours very respectfully,

G. M. WILLIAMS,
Inspector of Mines.

TONS OF COAL MINED DURING THE YEAR 1892.

Lehigh and Wilkes-Barre Coal Company,	2,062,536.08
Delaware and Hudson Canal Company,	1,208,908.02
Susquehanna Coal Company,	1,404,351.11
Kingston Coal Company,	764,384.19
Delaware, Lackawanna and Western Railroad Company,	404,980.17
Lehigh Valley Coal Company,	225,474.00
Red Ash Coal Company,	269,237.13

Alden Coal Company,	245, 722.04
Parrish Coal Company,	194, 691.03
Plymouth Coal Company,	201, 144.00
West End Coal Company,	196, 237.12
Hanover Coal Company,	111, 116.10
Hillman Vein Coal Company,	91, 325.13
Newport Coal Company,	52, 800.10
A. J. Davis,	116, 694.00
Total,	7, 549, 605.02

NUMBER OF FATAL ACCIDENTS AND TONS OF COAL PRODUCED PER LIFE LOST.

NAMES OF OPERATORS.	Number of lives lost.	Tons of coal produced per life lost.
Lehigh and Wilkes-Barre Coal Company,	25	82,501
Delaware and Hudson Canal Company,	6	201,484
Susquehanna Coal Company,	25	56,174
Kingston Coal Company,	5	152,876
Delaware, Lackawanna and Western Railroad Co.,	4	101,245
Lehigh Valley Coal Company,	3	75,158
Red Ash Coal Company,	2	134,618
Alden Coal Company,	4	61,430
Parrish Coal Company,	1	194,691
Plymouth Coal Company,	1	201,144
West End Coal Company,	5	39,247
Hanover Coal Company,	.....	.....
Hillman Vein Coal Company,	1	91,325
Newport Coal Company,	1	52,800
A. J. Davis,	.....	.....
Total,	83	90,959

NUMBER OF NON-FATAL ACCIDENTS AND TONS OF COAL PRODUCED PER PERSON SERIOUSLY INJURED.

NAMES OF OPERATORS.	Number of persons injured.	Tons of coal produced per person injured.
Lehigh and Wilkes-Barre Coal Company,	62	33,266
Delaware and Hudson Canal Company,	14	86,350
Susquehanna Coal Company,	45	31,207
Kingston Coal Company,	10	76,438
Delaware, Lackawanna and Western Railroad Co.,	10	40,498
Lehigh Valley Coal Company,	10	22,547
Red Ash Coal Company,	.....	.....
Alden Coal Company,	4	61,430
Parrish Coal Company,	5	38,938
Plymouth Coal Company,	2	100,572
West End Coal Company,	10	19,623
Hanover Coal Company,	1	111,116
Hillman Vein Coal Company,	3	30,441
Newport Coal Company,	1	52,800
A. J. Davis,	3	38,898
Total,	180	41,942

NUMBER OF FATAL AND NON-FATAL SERIOUS INJURIES, AND TONS OF COAL PRODUCED PER EACH PERSON KILLED OR INJURED.

NAMES OF OPERATORS.	Number killed and injured.	Tons of coal produced per person killed or injured.
Lehigh and Wilkes-Barre Coal Company,	87	23,707
Delaware and Hudson Canal Company,	20	60,445
Susquehanna Coal Company,	70	20,062
Kingston Coal Company,	15	50,959
Delaware, Lackawanna and Western Railroad Co.,	14	28,927
Lehigh Valley Coal Company,	13	17,344
Red Ash Coal Company,	2	134,618
Alden Coal Company,	8	30,715
Parrish Coal Company,	6	32,448
Plymouth Coal Company,	3	67,048
West End Coal Company,	15	13,082
Hanover Coal Company,	1	111,116
Hillman Vein Coal Company,	4	22,831
Newport Coal Company,	2	26,400
A. J. Davis,	3	38,898
Total,	263	28,705

CLASSIFICATION OF FATAL AND NON-FATAL ACCIDENTS.

CAUSES OF ACCIDENTS.	Killed or fatally injured.	Severely injured.
By explosions of carburetted hydrogen gas,	25	43
By falls of roof and coal,	33	51
By falling down shafts,		
Crushed and run over by mine cars,	12	32
By explosions of powder and blasts,	4	16
By miscellaneous causes underground,	3	18
By miscellaneous causes on surface,	6	20
Totals,	83	180

In additional to the number of non-fatal accidents, there were sixty-three reported as having been very slight injuries, which were not included in the list of serious accidents.

One additional fatal accident was reported that was not attributable to the mining and preparing of coal, and it was not entered in the list of fatal accidents.

The number of widows was forty-two, and one hundred and thirty-seven children under twenty-one years of age.

CONDITION OF THE MINES.

There is nothing particularly new to report regarding the condition of the mines. Changes take place continually in all mines, requiring close attention and unceasing work to keep them in good condition. Perusal of Table A, in this report, shows an improvement in the ventila-

tion. The aggregate quantity of air entering the mines, exclusive of that ventilating, abandoned mines, was 6,264,250 cubic feet per minute, being 492,965 cubic feet per minute greater than it was at the same period of last year. This was divided into 260 separate currents, in which 10,385 persons were employed in day time, and 1,624 persons at night. Of this quantity, 4,464,217 cubic feet per minute is reported to be circulating at the face of the workings, showing a loss by leakages of 1,840,033 cubic feet per minute. In the gaseous mines a large portion of the leakages is designed in order to keep cross-headings and cavities free from accumulations of explosive gas, but in non-gaseous mines, leakage of air is invariably an unnecessary loss.

The mines of this district are nearly all very dry and dusty, and especially so are the workings below tide level, therefore we have no cause to complain regarding the drainage of the mines. The dust in the face of dry workings is a source of more or less annoyance, and is a detriment to the circulation of the air currents. We have not yet found that the dust of anthracite coal promotes explosions, but it may assist to intensify the heat of the gases in an explosion, and if it does, the expansion is enhanced and a greater force is developed, increasing its destructive power.

The accessible parts of abandoned workings throughout the district are reported to be in safe condition. Accumulations of fire-damp are not allowed to exist longer than possible. All the superintendents and mine foremen agree that it is not safe nor economical to have a body of standing gas anywhere in a mine, and when such is discovered, provisions is immediately made to have it removed.

Some of the breakers are exceedingly dusty, notwithstanding the fact that fans are used to carry the dust away. Where the coal is dry and cannot be washed, it appears to be impossible to prevent the floating of dust in the air, and at some points it is very dense, despite every effort to prevent it.

The machinery is well protected by coverings and railings in all the breakers.

8-12-92.

TABLE A.—*Showing method of ventilating and volume of air in circulation in each colliery.*

Number.	NAME OF MINE.	Name of Operator.	Number of fans.	Number of persons in the mine in daytime.	Number of persons in the mine at night.	Number of splits of air-currents.	Cubic feet of air per minute at the inlet.	Cubic feet of air per minute at the face.	Cubic feet of air per minute at the outlet.
1	Diamond,	Lehigh and Wilkes-Barre Coal Company,	‡3						
2	Hollenback,	do. do. do.	‡3						
3	Hollenback,	do. do. do.	1	239	56	6	199,020	121,760	200,330
4	Empire,	do. do. do.	1	438	76	7	239,800	135,750	231,900
5	Stanton,	do. do. do.	1	300	78	8	262,200	190,780	288,740
6	South Wilkes-Barre, Nos. 3 and 5,	do. do. do.	‡4	272	76	6	180,552	133,166	209,846
7	Jersey No. 8,	do. do. do.	‡2	222	35	6	121,128	59,157	102,761
8	Sugar Notch No. 9,	do. do. do.	3	436	31	11	276,600	215,960	285,700
9	Lance No. 11,	do. do. do.	‡2	354	57	8	202,395	160,880	223,520
10	Nottingham No. 15,	do. do. do.	2	657	122	10	260,400	193,700	280,920
11	Reynolds No. 16,	do. do. do.	1	308	37	6	95,800	67,700	98,200
12	Wanamie No. 17,	do. do. do.	1	201	30	4	46,700	31,300	87,630
13	Wanamie No. 18,	do. do. do.	1	182	16	6	69,950	51,600	76,650
14	Baltimore tunnel,	Delaware and Hudson Canal Company,	1	170	12	4	231,000	122,500	234,000
15	Baltimore shaft No. 2,	do. do. do.	1	126	7	2	89,520	76,412	96,445
16	Baltimore shaft No. 3,	do. do. do.	1	115	5	3	63,050	26,000	67,220
17	Baltimore slope,	do. do. do.	*1						
18	Conyngham, Baltimore vein,	do. do. do.	‡1						
19	Conyngham, Hillman vein,	do. do. do.	1	95	19	2	95,914	93,437	96,134
20	No. 2 Plymouth,	do. do. do.	1	176	25	3	50,300	45,200	49,800
21	No. 3 Plymouth,	do. do. do.	1	180	21	4	80,810	68,580	78,475
22	No. 4 Plymouth,	do. do. do.	1	168		2	36,850	27,050	36,800
23	No. 5 Plymouth,	do. do. do.	1	194	8	6	105,000	98,920	101,400
24	Boston,	do. do. do.	1	123	20	4	50,595	46,488	53,905
25	No. 2 slope,	Susquehanna Coal Company,	2	139	58	5	104,500	82,000	115,000
26	West Nanticoke,	do. do.		39	11	2	45,200	34,250	46,480
27	No. 4 slope,	do. do.	3	139	55	7	184,116	101,997	186,988
28	No. 4 tunnel,	do. do.	‡1						
29	No. 1 shaft, George vein,	do. do.	1	70	5	1	23,920	14,370	24,200
30	No. 1 shaft, Forge vein,	do. do.	2	252	85	6	203,580	95,288	253,875
31	No. 1 shaft, Lee vein,	do. do.	1	386	148	6	130,750	121,350	164,700
32	No. 2 shaft,	do. do.	2	271	126	7	145,770	86,410	170,400

* Ventilating abandoned workings.

† One of each are auxiliary fans to be used when the others are being repaired.

‡ Mine filled with water to extinguish a fire.

TABLE A.—*Continued.*

Number.	NAME OF MINE.	Name of Operator.	Number of fans.	Number of persons in the mine in day-time.	Number of persons in the mine at night.	Number of splits of air-currents.	Cubic feet of air per minute at the inlet.	Cubic feet of air per minute at the face.	Cubic feet of air per minute at the outlet.
33	No. 6 shaft,	Susquehanna Coal Company,	1	208	104	3	93,000	67,000	96,000
34	No. 6 slope,	do. do.	1	117	29	3	61,000	54,000	63,000
35	No. 6 tunnel,	do. do.	1	178	17	3	60,854	55,850	61,235
36	No. 1 shaft,	Kingston Coal Company,	1	98	12	4	83,065	76,986	102,288
37	No. 2 shaft,	do. do.	1	190	2	5	77,200	62,000	94,200
38	No. 3 shaft,	do. do.	1	79	8	3	49,500	23,000	48,300
39	No. 4 shaft,	do. do.	1	78	15	7	110,906	75,441	128,820
40	Gaylord shaft and slope,	do. do.	2	380	36	8	136,500	123,600	148,400
41	Avondale,	Delaware, Lackawanna and Western Railroad Company,	1	288	. . . . .	8	120,650	109,460	133,060
42	Woodward Nos. 1 and 2,	do. do. do. do.	2	353	. . . . .	12	348,345	294,680	398,090
43	Dorrance,	Lehigh Valley Coal Company,	2	109	6	8	270,201	158,039	293,609
44	Franklin (three slopes),	do. do.	3	206	15	8	158,162	71,726	168,844
45	Red Ash No. 1,	Red Ash Coal Company,	1	149	11	5	67,981	65,336	69,509
46	Red Ash No. 2,	do. do.	1	222	6	4	37,311	36,219	38,491
47	Alden,	Alden Coal Company,	2	281	20	5	145,275	102,735	188,245
48	Dodson,	Plymouth Coal Company,	1	240	. . . . .	5	99,510	81,220	102,860
49	Hillman vein,	Hillman Vein Coal Company,	†2	110	13	4	139,080	133,330	141,680
50	Maffet,	Hanover Coal Company,	1	173	13	6	150,500	70,800	155,000
51	Parrish (two slopes),	Parrish Coal Company,	2	264	25	7	185,060	139,000	185,000
52	West End No. 1,	West End Coal Company,	1	120	20	2	65,740	21,280	79,500
53	West End No. 2,	do. do.	1	58	13	1	40,450	22,330	58,000
54	Warrior Run,	A. J. Davis,	1	145	24	4	101,940	49,480	75,620
55	Lee,	Newport Coal Company,	. . .	86	16	3	66,600	38,700	85,800
			77	10,385	1,624	260	6,264,250	4,464,217	6,777,570

† One of each are auxiliary fans to be used when the others are being repaired.

EXAMINATION OF APPLICANTS FOR CERTIFICATES OF QUALIFICATION FOR THE POSITIONS OF MINE FOREMAN AND ASSISTANT MINE FOREMAN.

The annual examination of applicants for certificates of qualification for mine foremen was held in this district August 5 and 6 at the Union street school building, Wilkes-Barre. The board of examiners was G. M. Williams, Inspector of mines, of Wilkes-Barre; Elmer H. Lawall, superintendent of mines, of Wilkes-Barre; Patrick McGrane, miner, of Sugar Notch, and David W. Thomas, miner, of Plymouth.

Thirty-one applicants appeared for examination, fourteen of whom were recommended for certificates, viz:

David Lloyd Richards,	Wilkes-Barre.
Thomas C. Lewis,	Wilkes-Barre.
William S. Rodgers,	Wilkes-Barre.
John Kelley,	Wilkes-Barre.
John Hunt,	Wilkes-Barre.
Daniel P. James,	Wilkes-Barre.
George Kramer,	Plymouth.
William Benson,	Nanticoke.
George Burleigh,	Nanticoke.
Thomas Ford,	Nanticoke.
Jesse Britten,	Nanticoke.
Frank Thomas,	Plymouth.
John R. Morris,	Plymouth.
Henry H. Beddoe,	Plymouth.

Forty-seven applied for certificates of qualification for assistant fireman and forty-five of them were recommended to have certificates.

The Fire in the Conyngham Colliery.

An account of the fire in the Conyngham mine and of the work done towards extinguishing it to the end of the year 1891, was given in the report of this district for the last year.

The Lehigh and Wilkes-Barre Coal Company filled the two airways parallel with the pillar on their side with culm, and also bored three holes with a view of determining the thickness of the pillar. These three horizontal holes were drilled at points near the one bored from the surface to fill the airways with culm, though the maps show the breadth of the pillar between the workings of the Conyngham and the Hollenback collieries, at this point, to be 95 feet. The first hole was bored a distance of 95 feet in coal, when it entered a bed of slate, and was bored in that again a distance of 59 feet, making total length of 154 feet. The second hole was drilled a distance of 97 feet in coal, and 28 feet in slate. The third was bored a distance of 125 feet all in coal. Neither of the three holes broke through to the water on the Conyngham side, but they satisfied everyone that the pillar is fully as large as

it is represented on the maps. These test-holes were at an elevation of 240 feet higher than the bottom of the Conyngham shaft.

The water in the Conyngham workings was filled to a vertical height of 346 $\frac{6}{10}$ feet from the bottom of the shaft, being 106.6 higher than the test holes in the pillar. Considerable water percolates through the pillar into the Hollenback workings, and the cracking noise on that side is supposed to have been caused by the pressure of the water when working its way through the pores of the coal and scaling off the surface. This cracking was moving upwards within a short distance of the level of the water on the other side, and it ceased in a few weeks, so that there was no indication of it. The water is now kept at a height of about 345 feet, and at this height it seals the workings north of the anticlinal running through the workings of the Conyngham mine. When the water was at a height of 310 feet, the fan was started and the mine was cleared of gas as far as practicable, and on March 31, Wm. Armstrong, the mine foreman of the Baltimore slopes, accompanied by his fire-bosses, went in from the Baltimore slope and they were able to go about 200 feet down the No. 7 slope. They found it comparatively clear of noxious gasses, but there was much steam, and a temperature of 110 degrees Fah. Work was started to enlarge the airways and increase the air current. The water has been filled since then to the heighth of 246 feet, and the temperature has been taken every few days since October 17, 1892, when it was found to be over 130 degrees in the sixth lift. The thermometer could not show higher. November 12 they found the thermometer broken, evidently the expansion of the mercury being greater than the space for it in the tube, caused it to break. November 25 the temperature of the air was 100 degrees, and of the water 98 degrees. The latter part of December the air was 94 degrees, and the water 88, showing that it cools slowly. It is believed now that the fire is submerged or at least confined and sealed in high spaces by the water. The roof and surrounding material had been so intensely heated that it will require a long time for the standing water and the small current of air in circulation to cool it.

EXPLOSIVES USED IN GASEOUS GANGWAYS.

The difficulty of blasting coal and rock in gaseous gangways, so as not to ignite the copious gas-feeders, has been felt in this district for several years. When using the ordinary black powder, which is the best explosive for blasting coal, the gas-feeders are ignited with nearly every blast. In some instances it has caused serious and expensive fires, and this is liable to occur in exceedingly gaseous places, every time a powder blast is exploded.

Dynamite in its various forms is found to be safer and less liable to ignite the gas. It is a mixture of nitro-glycerine with absorbants, such as pulverized silex, silicious ashes, infusorial earth, sawdust or wood

pulp. The pulverulent form prevents to some extent the sudden transmission of shocks except under pressure in a confined space. The presence of the inert constituent serves also to absorb heat, so that a high temperature cannot so easily be imparted to the whole as if the nitro-glycerine was not mixed, but when the heat is imparted the temperature effects a great expansion of the gases and increased effectiveness of explosion. It burns off quietly in air, or even when loosely packed, giving off nitric acid fumes, which if inhaled by those who handle it, causes severe headaches and colic. When exploded it generates carbonic acid, nitrogen and aqueous vapor with but very little or no smoke. It is not affected by dampness, but it freezes at 40° Fahrenheit and at 30° becomes difficult to ignite. It should not be used at a temperature below 40° because then it is much more liable to ignite the gas. Even when its temperature is proper it should never be exploded when there is a body of fire-damp. If a blast has less work to perform than is necessary to consume the energy of the explosive, it generates heat enough to ignite fire-damp. It performs eight times as much work as powder and does it much more suddenly. It is not considered safe to use dynamite having less than forty per cent. of nitro-glycerine when the main object is to avoid igniting the gas-feeders, and it must be exploded by means of a fulminating fuse or cap.

EXPERIMENTS WITH AMMONITE.

Through the kindness of Mr. W. A. Lathrop, superintendent of the Lehigh Valley Coal Company, I am enabled to present a report of experiments made by their mining engineer, J. R. Moister, assisted by Mr. William Samuel and Col. A. G. Mason, both colliery superintendents. The explosive with which they experimented is called ammonite and the result is shown in the following report:

WILKES-BARRE, PA., *October 6, 1892.*

Mr. W. A. LATHROP, *General Superintendent:*

DEAR SIR: In accordance with your instructions I have carefully examined into the merits claimed for the explosive now being introduced by Mr. Harry Allen, and submit for your consideration the following report of actual tests made with it, both on the surface and in the mines, in company with Mr. William Samuel and Col. A. G. Mason at their respective collieries, and Messrs. Thornton and Eastlake, who operated the explosive:

It is a yellowish substance not unlike sulphur in appearance, emits a rather pleasant odor, and is made up for use in perfectly air-tight cartridges of very thin lead, and of any length and diameter required. In our experiments, cartridges of $1\frac{3}{8}$ inch and $1\frac{3}{4}$ inch diameter, and varying from three ounces to nine ounces in weight were used. A cartridge $1\frac{3}{4}$ inches in diameter by $4\frac{1}{2}$ inches long will weigh six ounces.

In charging the hole in coal, we tried to proportion the weight of the

explosive as near as possible, without cutting the cartridges, to about one-third in weight of the amount of blasting powder which the miner would have used for the hole; for example: When in the judgment of the miner a hole would require eighteen inches of powder, which weighs thirty-six ounces, it was charged with twelve ounces of the explosive. In proportioning the charges in rock, about two-thirds in weight of the amount of dynamite necessary, was used.

The method of firing is similar to that of dynamite. The primer cartridge is provided on one end with an air-tight nipple of a little larger diameter than the detonator, and of one piece with the rest of the cartridge, and through this nipple, after first cutting of its end, the detonator is inserted deep into the explosive and the sides of the nipple pressed down firmly by nippers around the detonator or the wires of the electric fuse, making the cartridge again perfectly air-tight. The charge requires the ordinary amount of tamping, and is exploded either by a fuse and detonator, or by a battery and low tension electric fuse or detonator. The detonator necessary for this explosive contains about double the amount of fulminate of mercury of the ordinary exploder. As already mentioned, the cartridges are made up in any size and of any weight desirable, but in case a single cartridge may not be of sufficient power, by simply placing a number together, end to end, the amount necessary is obtained.

The tests performed by us were for the purpose of determining:

1. Its non-explosiveness by the application of heat.
2. Its non-explosiveness through ordinary concussion.
3. Its power as compared with blasting powder.
4. Its power as compared with dynamite.
5. Its utility in blasting coal.
6. Its utility in blasting rock, and the results are as follows:

Surface Tests at Dorrance Colliery.

Test No. 1.—Upon a shovel full of live coal fresh from the blacksmith fire, some of the explosive was sprinkled, and afterwards the remainder of the cartridge in a lump was placed, and its burning was attended by only a very slight spluttering and hissing sound.

Test No. 2.—Half of the contents of a six ounce cartridge was removed, its place filled by a charge of blasting powder and the powder exploded by a fuse. The only effect of this upon the explosive was to melt and blacken it a little at the part next to the powder. The part upon which the powder had no effect, was afterward exploded by a detonator.

Test No. 3.—A thin film of the explosive was placed upon a rail and pounded with full force with a fifteen pound sledge, and run over at good speed by a car of rock from the mines, weighing fully four tons; afterwards a whole cartridge was hammered with a sledge, run over by

the car of rock and thrown up into the air as far as possible to fall upon loose rock, without exploding it.

Test No. 4.—Showing its power: A six ounce cartridge was fastened by clay to the web of a sixty pound rail and afterwards to the top of the rail, and both cases shattered it into innumerable pieces.

Test No. 5.—Four six ounce cartridges were tied together, with a fuse and detonator attached to one only, and thrown into about four feet of water in the river; the cartridges were under water fully a minute before they exploded, causing a water-spout about fifty feet high. It is not claimed for the explosive that it will not be affected by water, but it is claimed that if the opened end of the priming nipple is pressed properly against the detonator, it can be exploded under water, as shown by this test.

Test No. 6.—A line of five six ounce cartridges was made on the sand and exploded. This test was watched intently from a distance, and so far as eye and ear could detect, the explosion of the five cartridges was simultaneous. No traces of heat in the sand could be felt at the place of the explosion, showing that the transformation of the substances into gases is not produced by the heat of the gases from the detonator, but rather by the peculiar vibration caused by the blow of the detonator.

Inside Tests at Dorrance Colliery in the Baltimore Vein.

Test No. 1.—This test was made with a hole four feet six inches deep in very brittle coal at the face of a chamber. The quantity of black powder which would have been required for this hole was twenty-seven ounces; one-third of this amount, or nine ounces of the explosive, was used. The following facts were noticed: The report was very much like that from blasting powder; no objectionable smell could be detected; in fact about the only smell noticable was that of coal dust from the explosion; very little smoke resulting, not one-fourth as much as from powder, and that instead of crushing the coal like all other high explosives, the coal was blown out in sizes equal to those blasted by black powder. The facts just noted will be applicable to all other tests made by us in coal with this explosive. This blast was fired by a fuse.

Test No. 2.—To determine the amount of flame produced at an explosion, a detonator was placed on the gangway road, and fired in perfect darkness by a battery, a slight pale blue spark or flame was noticed. A three ounce cartridge was then attached to a detonator and exploded in like manner, the flame noticed was only slightly larger, if at all larger, than when the detonator alone was exploded, showing that the greater part of the flame, if not all, is produced by the detonator.

Test No. 3.—Into a "standard" hole about six inches deep, in the rib of a gangway, a three-inch cartridge was placed and lightly tamped with about one inch of tamping. This "plug" was fired in total darkness and at a distance of only about eighty feet. With eyes intently fixed upon the hole, not the slightest traces of any flame could be seen.

Test No. 4.—This test to determine both the power of the explosive and its safety in the presence of explosive gases was made in the heading just turning at the face of the proving slope down the north dip of the Cemetery anticlinal, the most gaseous place in all our collieries, and probably in the whole region. At this point the measures are very much disturbed and broken, causing an unusual quantity of gas which streams out from the ribs and bottom, rendering it unsafe to approach these parts even with safety lamps. Two opening holes were fired in the bottom in very tight coal at a place where the feeders were unusually thick and strong, these holes were five feet and four feet six inches deep respectively, and would have required, one, thirty-six ounces, and the other thirty-two ounces of black powder, twelve ounces of the explosive were used in each hole. These blasts cut out the coal in as good sizes as if black powder had been used, and did not disturb by the concussion the brattice which is usually knocked down in blasting. The gas was not ignited, which undoubtedly would have happened had powder been used.

Test No. 5.—Two holes were fired simultaneously in this test in the proving slope, under the same conditions as test No. 4, without firing the gas. These holes were three feet six inches and four feet long, and required eighteen ounces of powder each, instead of which six ounces of the explosive was used in each.

Test No. 6.—Having determined by tests Nos. 4 and 5 the safety in the presence of explosive gas, it was determined to make a final experiment to prove beyond question this very essential property of the explosive. Three holes, each four feet six inches long, were drilled in the heading noted in tests Nos. 4 and 5, and charged with 6, 4 and 8 ounces of the explosive in place of 18, 12 and 26 ounces of black powder. When the arrangements for blasting had been completed, the brattice at the face of the slope which deflected the air into the heading, was taken down, and the gas allowed to accumulate in the heading. The process of filling was carefully watched with safety lamps, and when the heading had become so full that it was no longer safe to remain, the three charges were fired in the very midst of the gas without exploding it. This test may seem a hazardous one, requiring the utmost confidence in the result, but it was not as dangerous as it appears, since, had the gas been ignited, it could have been confined to the face of the proving slope and readily extinguished by flooding.

Through an error in judgment on the part of the miner, which was questioned at the time, these three holes were undercharged and blew out the tamping instead of breaking the coal, but this makes the test the more crucial, since it is well known that a blast that is blown out, will force the flame out of the holes with the tamping, and in all probability ignite any gas that may be at the mouth.

Tests four, five and six were fired by a battery.

Tests in Bowkley Vein at Midvale Colliery.

Test No. 1.—This test was made in a rib hole in very brittle coal full of slips. The hole was four and one-half feet long, requiring thirty-six ounces of powder, in place of which twelve ounces of the explosive was used; the work done in this kind of coal was very satisfactory, and compared favorably with that of black powder, the coal blowing out in fair sizes, and not scattering or throwing to a distance.

Test No. 2.—This was a severe test as to the power of the explosive, the hole being straight ahead in tight coal; length of hole, three feet; amount of powder necessary, twenty-four ounces; amount of explosive used, eight ounces. The results were equally as good as test No. 1.

Tests in Exeter Tunnel.

These experiments to determine the relative merits between the explosive and climax powder, a high grade explosive containing forty per cent. of nitro-glycerine, used in driving this tunnel, were made in hard sand rock at the face.

The strength of the explosive is claimed to equal dynamite, containing seventy-five per cent. of nitro-glycerine, and the endeavor was to proportion the amount of the explosive to about two-thirds in weight of the amount of climax powder, which in the judgment of the charge-man would have been used in the holes. But after tests Nos. 1 and 2 had been made, it was discovered that the sticks of climax, instead of weighing eight ounces each, as marked on the box, actually weighed eleven ounces, which made the proportion used for the explosive one-half, and in some cases less than one-half, of the weight of the climax powder which would have been used. The holes fired were the second round of the side and bottom holes, the center or opening holes having already been fired. To make a cut in the face of the tunnel, twenty-one holes were drilled with rock drills and fired in rounds by a battery, each hole generally requiring two rounds. These holes vary from five to seven feet in depth, and taper from two inches to one and three-fourth inches in diameter. At the time of the experiments the center or opening holes and the first round of the other holes had been fired.

Test No. 1.—Hole No. 1, four feet long, thirty-three ounces of climax required, used sixteen ounces of the explosive.

Hole No. 2, four feet long, thirty-three ounces of climax required, used sixteen ounces of the explosive.

Hole No. 3, three feet six inches long, twenty-two ounces of Climax required, used twelve ounces of the explosive.

Hole No. 4, four feet four inches long, forty-four ounces of Climax required, used twenty-one ounces of the explosive.

Hole No. 5, three feet long, thirty-three ounces of Climax required, used eighteen ounces of the explosive.

Hole No. 6, two feet six inches long, thirty-three ounces of Climax required, used nine ounces of the explosive.

Of these holes, 4 and 5 were wet holes at the bottom and the others dry side holes.

Owing to the miscalculation as to the weight of the Climax, these holes were slightly under-charged and did not cut quite as deep as the proportionate amount of the Climax would have done.

Shot No. 1 blew out the hole and was afterwards blasted with Climax. It was noticed that the six holes charged with the explosive made less smoke than a single shot of Climax; the smell of the six shots, while noticeable, was not offensive; that for a single shot of Climax was more noticeable and very offensive.

In firing a round of Climax, two or three lengths of brattice are invariable kocked down by the concussion; in this experiment the brattices remained undisturbed. In blasting with Climax, the rock is crushed into small pieces, while with the explosive it is thrown out in larger pieces but more easily handled.

Test No. 2.—In this test two rib holes and two bottom holes were fired:

Hole No. 1, five feet long, fifty-three ounces of Climax required, used thirty-four ounces of the explosive.

Hole No. 2, three feet six inches long, thirty-three ounces of Climax required, used twenty-three ounces of the explosive.

Hole No. 3, four feet ten inches long, thirty-three ounces of Climax required, used seventeen ounces of the explosive.

Hole No. 4, four feet six inches long, fifty-five ounces of Climax required, used thirty ounces of the explosive.

Holes Nos. 1 and 4, were wet bottom holes in which water tamping was used. In these tests the holes were undercharged, owing to the miscalculation as to the weight of the Climax. The other results were the same as in test No. 1.

Test No. 3.—This test was made yesterday by Col. A. G. Mason; in it the proper proportion of two-thirds of the weight of the Climax was used. He reports as follows:

First round. Four center or opening holes, each four feet six inches long; used one hundred and twenty-six ounces total of explosive, in place of one hundred and ninety-two ounces of Climax.

Second round. Six rib holes, each four feet nine inches long; used one hundred and eighty-nine ounces total of the explosive, in place of two hundred and seventy-six ounces of Climax.

Third round. Two top holes, each four feet long; used forty-one ounces total of explosive in place of seventy-two ounces of Climax. He also reports that all the holes cut within a few inches of the bottom; that very little smoke and no offensive smell were noticed; that the end of the brattice remained intact, which never happened before; that

the rock came out in large lumps readily handled, and that in every other particular the work done by the explosive was superior to that of Climax.

From the foregoing tests, which were carefully noted, it is safe to recommend this powder as a high explosive in the following essential properties:

First. It cannot be exploded by the application of heat, or from ordinary concussion, and consequently can be handled with safety.

Second. If properly tamped, I believe it will not ignite explosive gases.

Third. It requires only about one-third as much in weight as the quantity of black powder in blasting coal, and blows out the coal in fully as large pieces; and being so much smaller in bulk, the power is concentrated at the back end of the hole where the resistance is the greatest.

Fourth. Its explosion is attended with very little smoke or offensive odor.

Fifth. It works equally as well in wet coal as in dry, if directions for sealing the cartridges are properly carried out.

Sixth. Its power as compared with Climax approximately appears to be about one-half greater for equal weights, or equal to dynamite containing sixty per cent. of nitro-glycerine. It is claimed that the explosive has a force equal to dynamite containing seventy-five per cent. of nitro-glycerine; this power may be obtained by drilling the holes sufficiently large for a one and three-quarters inch cartridge at the bottom, the fault with the ordinary hole being that only a one and three-eighth inch cartridge can be used at the bottom where the greatest work is to be done, and a cartridge of this diameter is not equal to the work of a seventy-five per cent. dynamite of the ordinary diameter, the dynamite being of equal weight but of less bulk.

Seventh. It is superior to Climax in that the concussion is considerably less, and consequently the shattering of doors and brattices is proportionately lessened.

An objectionable feature to the explosive is that it will lose its explosive properties to some extent, if exposed to water, or for over twenty-four hours to air. The explosive, however, comes in air-tight cartridges of any size, so there should ordinarily be no need of cutting.

Yours very truly,

I. R. MORSTER,
Division Engineer.

FILLING OLD WORKINGS WITH CULM AT THE DODSON COLLIERY OF THE PLYMOUTH COAL COMPANY.

Superintendent J. B. Davies, of the Plymouth Coal Company, assisted by his efficient foremen at the Dodson colliery, in the latter part of the year 1891, concluded to fill the old workings below the shaft level with the refuse culm from the breaker. The dump space for refuse on the surface was small and nearly filled, and they saw that if it could be packed in the old workings it would serve well to strengthen the pillars and prevent caving in.

The apparatus was prepared and completed ready to begin to flush the culm into the mine by November 20, 1891, and in the fourteen months following enough culm was flushed in, to fill sixteen acres of the workings. All the old workings west of the underground slope, except one passage left for an airway along side of the solid coal below the filled workings, have been completely packed. Plate 1 in this report shows these workings in which the culm has been filled. It shows also a series of old breasts filled to the rise of the level gangway. The dotted part of the map shows the filled workings. To convey the culm and effect the packing, an iron pipe, six inch diameter, was used. The shaft piping has a vertical height of 410 feet On top of the pipe a short section of a boiler, 36 inches diameter, is fixed to receive the culm from a breaker-chute. Leading into this a branch pipe is also brought from the column pipe of the pump. See plate 2. The quantity of water needed may be regulated by a valve on the column pipe near the discharge end.

At the bottom of the shaft, the bend of the ordinary elbow was found to be too abrupt, and a special combination elbow, with long easy bend, a stand, and branch flushing-pipe was constructed which has worked satisfactorily.

If the culm rushes in too fast, it has a tendency to block at this elbow, and when it does so, it can easily be started by forcing water in the branch or flushing-pipe at the elbow.

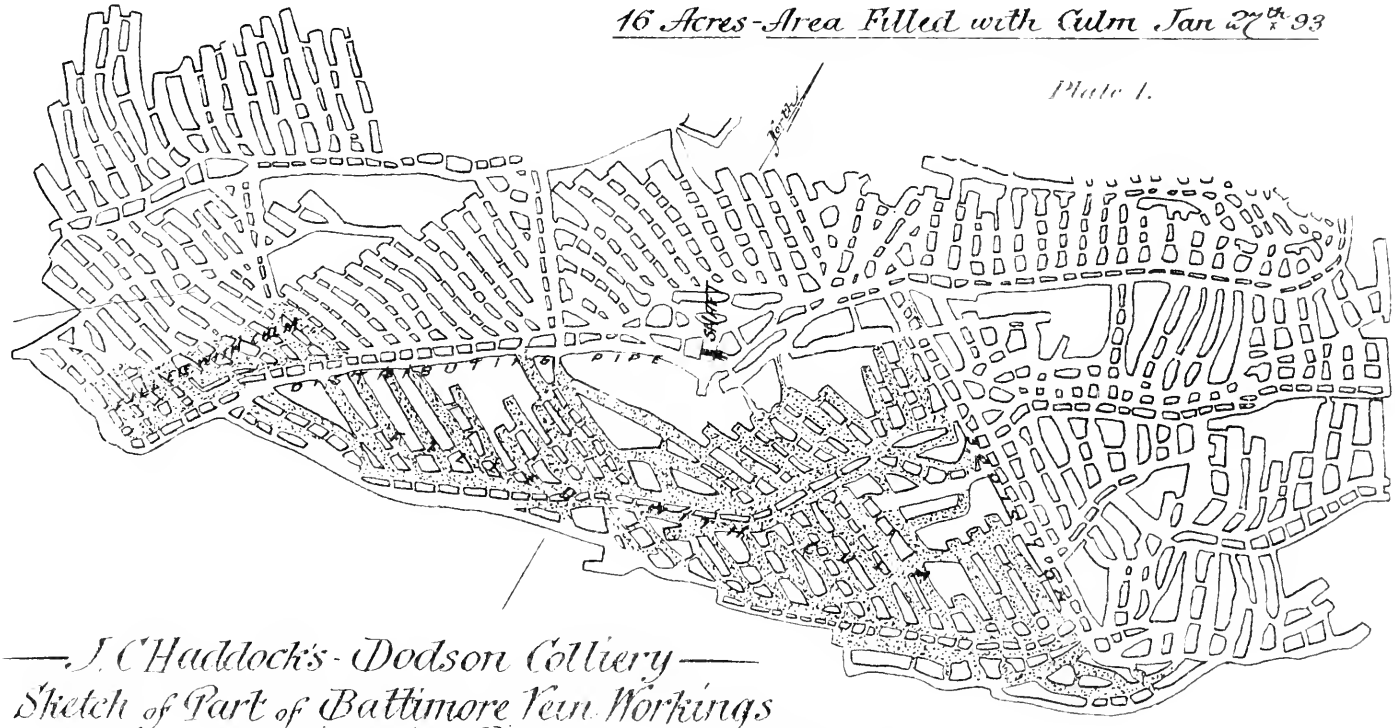
The culm was conveyed successfully through a horizontal pipe a distance of 1,600 feet from the bottom of the shaft. When filling the workings to the dip from the level gangway, it required 325 gallons of water per ton to flush it successfully, and thirty-two tons per hour was conveyed and deposited in the workings.

The flow of culm must be regulated so as to be as nearly uniform in quantity as possible, or it has a tendency to block and cause trouble in starting the flow again. Nothing larger than what can pass through a $\frac{3}{16}$ inch mesh is allowed to enter the pipe; a larger size was tried, but it caused too much trouble by blocking.

After filling the workings to the dip they laid a pipe to the rise to a height of forty feet vertically, rising from the horizontal pipe at a distance of 1,200 feet west of the shaft and reaching an elevation of forty feet

16 Acres - Area Filled with Culm Jan 27th '93

Plate 1.



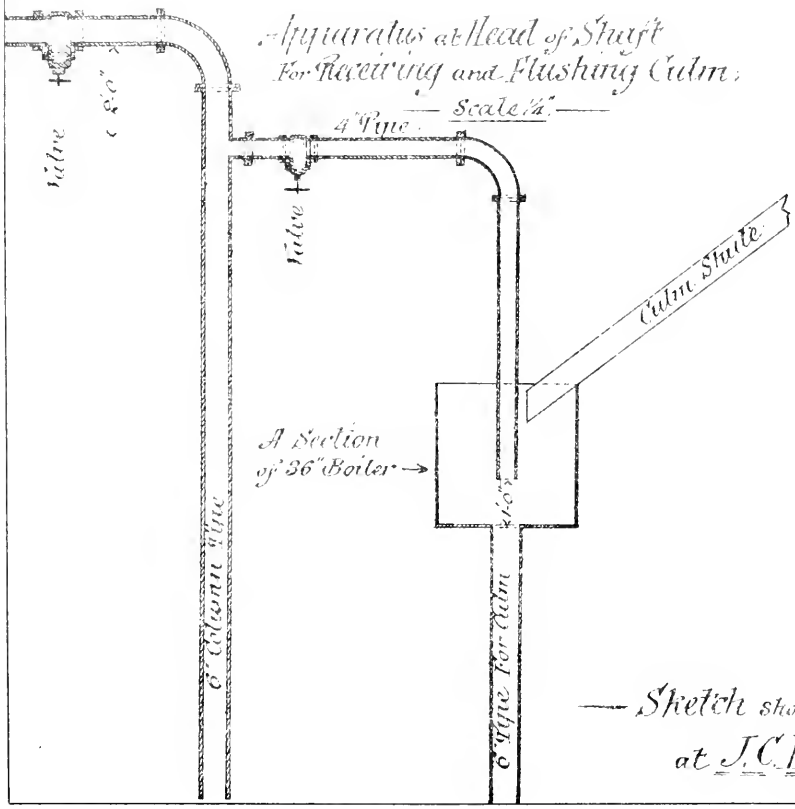
— J. C Haddock's - Dodson Colliery —

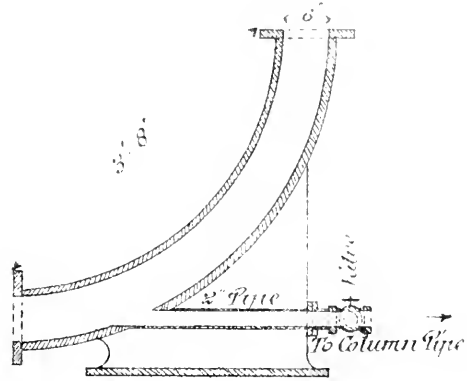
Sketch of Part of Baltimore Vein Workings

showing Distributing Pipe and Area Filled with Culm;

Scale 400 Feet: Plymouth, Pa. Ashman & Auman. ENGRS.

Plate 2.





Combination Bend, Flusher & Stand
For Main Culm Pipe at Foot of Shaft.
Scale ½"

— Sketch showing Parts of Culm Flusher —
at J.C. Haddock's Dodson Colliery, Plymouth Gt.

in a distance of about 300 feet. The pipe has a rise of from naught to twelve degrees and they have experienced but little trouble in filling the workings at this elevation, but it requires a quantity of 440 gallons of water per ton to flush it successfully up to these high points.

The red line on the map, plate 1, shows the line of the pipes. It is shown that they are laid both east and west from the bottom of the shaft. This is arranged so that when the pipe is being extended on one side, the other can be used to deposit the culm.

The discharge from the pipe is not a steady flow on account of the large quantity of air carried down by the inflow of the culm and water, but is an intermittent noisy emission at frequent irregular intervals. Care must be taken in approaching the discharge end of the pipe lest there may be explosive gases therein. At a number of times, they have found it emitting considerable gas of an explosive nature, and where the space is confined, the gas is liable to accumulate.

An airway is kept open all around the filled workings with an efficient current of air passing through. They have taken several of the pillars out and filled their places with culm. There was more or less apprehension of the culm becoming heated and taking fire spontaneously, but though a slight degree of heat is generated, nothing has transpired to cause the slightest alarm, and the arrangement of the pipe is such that any point could be flooded with water in a short time. In truth they have solved the problem of depositing dirt in mines, and utilizing it in sustaining the overlying strata in an economical manner.

SHAW'S STANDARD GAS TESTING INSTRUMENT.

Two of these valuable instruments were procured for use in this district during the year 1892. One by the Lehigh and Wilkes-Barre Coal Company for use at the South Wilkes-Barre colliery, and the other by the Susquehanna Coal Company, for use at the colleries at Nanticoke. The Mine Inspector's office was furnished with one, about three years ago.

It is a valuable instrument when a positive knowledge of the proportion of explosive gas or black-damp existing in the air is required, and frequently this knowledge is found useful in distributing the ventilation of a mine. The different splits can be regulated so that equal proportions of gas is found in the air of each split.

The writer used it with good effect in the Conyngham mine. The return air was so charged with deadly gases that no one could enter the mine. It extinguished a light as effectively as water, and two or three inhalations made a man exceedingly sick. It came from an inaccessible part of the mine, where the source of its production could not be ascertained. From a point where it was mixed with all of the air of the mine, a current of 70,000 cubic feet per minute, a sample was taken and examined, in which four per cent. of carbonic acid was found. This

proved that a volume of 1,800 cubic feet of carbonic acid gas, per minute was generated, and that there must be a brisk fire existing somewhere in the mine to produce such a large quantity. Shortly after the temperature rose so as to verify our apprehensions. At the South Wilkes-Barre colliery, and also at the Nanticoke collieries, the instrument is used to ascertain the percentage of fire-damp in the air of each split, and it enables them to regulate the air so that the gas can be diluted evenly in the different air currents.

AN AUTOMATIC CAR TRANSFER SYSTEM.

A drawing is here presented showing an automatic system for transferring cars from the shaft-head to the breaker dump at the Baltimore No. 2 shaft of the Delaware and Hudson Canal Company. It has been in operation for about one year, and works satisfactorily. This was designed by Mr. C. H. Scharar, chief engineer of the coal department, who kindly consented to have it appear in this report. It explains itself, and can be easily understood from the drawing.

THREE NEW COAL BREAKERS.

Three new breakers were erected in this district during the year 1892. The first one completed was that of the Susquehanna Coal Company, a short distance north of their No. 1 shaft at Nanticoke. It is to prepare the coal previously shipped through the old No. 2 breaker, now abandoned, and is known as the No. 7 breaker.

The second was the No. 5 breaker at the South Wilkes-Barre colliery of the Lehigh and Wilkes-Barre Coal Company. This breaker was completed in the latter part of September, and has been operating successfully since.

The third is the No. 4 breaker of the Kingston Coal Company, erected to replace and do the work of the two breakers burned May 5, 1891. This new breaker started to prepare coal for the market in December, 1892.

The three breakers are large structures, equipped with the latest and most efficient machinery, and on the most approved plans for the purpose of cleaning and preparing a large production of coal. They are safe for the employes, and heated comfortably by steam. The stairs and machinery are well guarded, so that no one can be hurt inadvertantly.

RECORD OF COLLIERY IMPROVEMENTS DURING 1892.

The spirit of improvement was active during the year 1892 in this district, and a detailed account of its work is shown in the following:

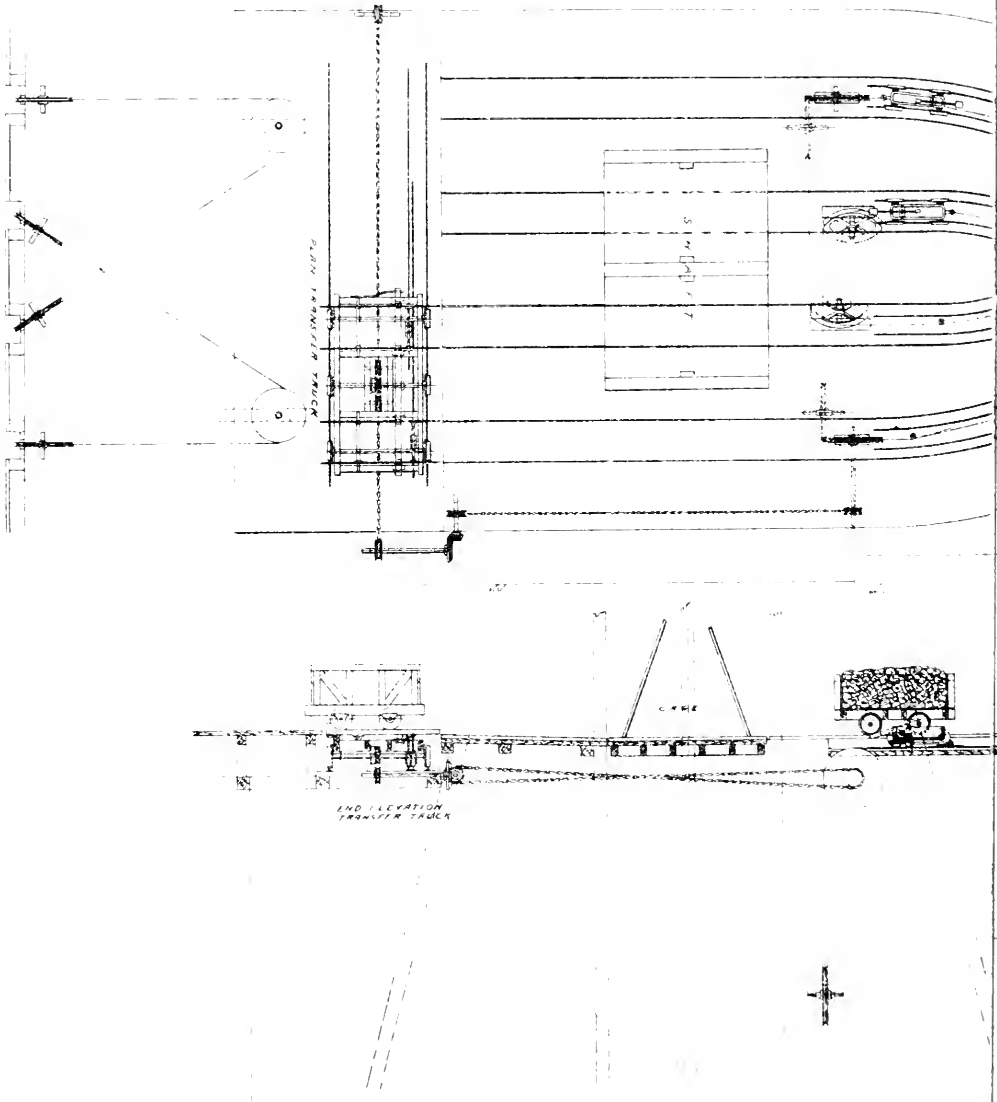
Improvements by the Lehigh and Wilkes-Barre Coal Company.

At the Hollenback No. 2 colliery a new fan was erected to ventilate the new Red Ash seam workings. It is 35 feet diameter, and in run-

Automatic System for transferring Cars f

At Delaware & Hudson Co.
Baltimore No 2 Shaft

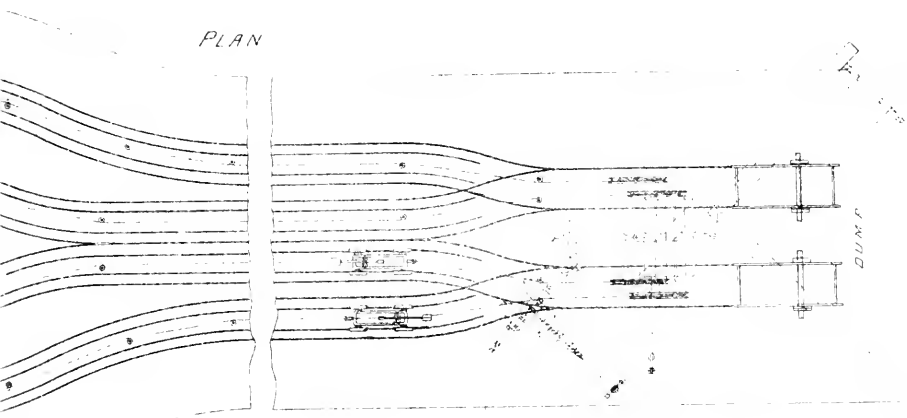
Designed by C H Scharar Chief Eng



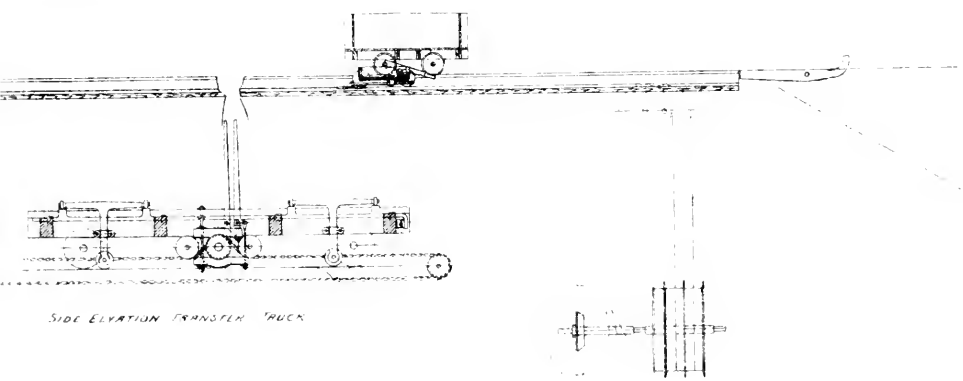
Shaft Head to Breaker Trains

Coal Department

PLAN



ELEVATION



SIDE ELEVATION TRANSFER TRUCK

ning 45 revolutions per minute produces a ventilating pressure of 10.4 pounds per square foot, and is exhausting 250,000 cubic feet of air per minute. A self-recording pressure meter and automatic alarm is also attached to it. The fan engine is 16×48 inches direct acting. A tunnel was driven from the Hillman to the Kidney seam; also a second opening for the same. The main tunnel is 7×12 feet and 300 feet in length; and the second opening for the ventilation is 7×12 feet area and 90 feet in length. This is the first opening to the "Kidney seam," and it will enable them to work a large area of it.

Second openings were driven through the rock from the Red Ash, one to the top split and the other to the Ross seam. The first is 43 feet in length and the second 80 feet, and each has an area of 7×12 feet, which make roomy return airways. Another tunnel is being driven south from the West Red Ash gangway to cut the Diamond basin, which will open an extensive field of coal.

At the Empire colliery three new rock tunnels were driven, the first through a fault in the Red Ash seam a distance of 180 feet, the second from the top split of Red Ash to the Ross seam, a distance of 60 feet, and the third from the Red Ash to the top split, a distance of 130 feet. Each of these have an area of 7×12 feet.

At the South Wilkes-Barre colliery besides the new breaker already noticed, a new 35-foot Guibal fan has been erected which, running at a speed of 45 revolutions per minute, exhausts 240,000 cubic feet of air under a water gauge pressure of 1.9 inches. This fan was erected to supersede the old Capell fan, which was not of sufficient capacity for this gaseous mine. The new fan is supplied with a self recording pressure meter and automatic alarm.

Three new tunnels were driven through the rock, one from the Hillman to the Kidney seam in the No. 3 shaft, a length of 228 feet, and an area of 7×12 feet. This will enable them to work the Kidney seam, which is 4 feet 3 inches in thickness. The second was driven from the Baltimore to the next seam above, called there the "Stanton" seam. This tunnel is 300 feet long and 8×12 feet area. A second opening was driven for ventilation a distance of 84 feet, having an area of 9×12 feet.

An underground slope was sunk in the Hillman seam from the east gangway of the No. 3 shaft. It reached the basin at a length of 425 feet, which opens a productive lift of coal.

At the Stanton colliery a new fan has been erected to ventilate the old Hillman seam workings near the main shaft. Fire-damp would occasionally accumulate in these workings, making it dangerous to pass through the main shaft, and the erection of this fan has removed every vestige of the danger. It is a Sturdevant fan, 8 feet diameter, running 80 revolutions, and exhausting 3,000 cubic feet of air per minute—run by a horizontal direct-acting engine 10×14 inches.

A new gravity plane 1,000 feet long was made in the Hillman seam to work the coal to the rise. It has an average grade of 10 degrees.

A short rock tunnel for ventilating purposes, 43 feet long and 7×12 feet area from the top to the bottom split of the Red Ash seam, was driven.

At the No. 8 Jersey colliery two new tunnels were driven from the Baltimore to the Ross seam, one in each of the two lower lifts of the new slope, and they are continued to tap the Red Ash seam. Size of each is 7×12 feet, and their lengths will probably be 600 feet each when completed. They are now at work driving second openings for the Ross seam.

At the No. 9 colliery, Sugar Notch, the underground slope is being extended, and a traveling way has been completed 900 feet in length on a grade of 20 degrees.

At the No. 11 Lance colliery a new air shaft is in progress of sinking, 12×30 feet area, and it will be about 600 feet in depth when completed. At the close of the year it was at a depth of 40 feet. Three new gravity planes of various lengths were completed, to run coal down from elevated workings. A new Guibal fan thirty-five feet diameter was erected as an auxilliary to the old one. It exhausts 229,630 cubic feet of air per minute when running fifty revolutions. This also has a self-recording pressure meter connected to the return air and an automatic alarm attached to give alarm in case the ventilation is reduced.

At the Nottingham colliery a new air shaft has been sunk to the Ross seam. It has an area of 12×30 feet and a depth of 175 feet.

A new fan 24 feet in diameter is in progress of erection and will be operated by a horizontal direct-acting engine 20×36 inches.

At Wanamie Nos. 18 and 19 two new tunnels have been driven at different points from the Baltimore to the Cooper seam. Each is 165 feet in length and 7×12 feet area.

The No. 19 slope is being extended to open another lift.

Beside improvements recorded above, a number of new steam boilers were added to the plants of several of the collieries, and several other minor improvements were effected.

Improvements by the Delaware and Hudson Canal Company.

At the Baltimore Tunnel colliery, the underground slope on the Red Ash seam was extended a distance of 500 feet, making the total length of the slope equal 900 feet. The average grade is 18 degrees. At the Boston colliery a new fan has been erected on the foundation of the old one which was torn down. This is 20 feet diameter and running 100 revolutions exhausts 50,000 cubic feet of air per minute under a pressue of 0.75 inch water gauge. The size of the engine is 14×48 inches, running the fan by a belt transmission.

At the No. 2 colliery, Plymouth, an underground slope has been sunk to a length of 500 feet on a grade of 12 degrees, which is the inclination of the seam. It opens a lift of excellent Baltimore vein coal. The engine to hoist from this, is located on the surface.

Improvements by the Susquehanna Coal Company.

At the No. 1 shaft a tunnel was driven from the "Forge" to the Hillman seam. It is 650 feet in length and 7×14 feet area. It is intended to work the coal of No. 2 slope through this tunnel and abandon the slope.

The workings of the Forge Vein No. 1 shaft were connected by a tunnel from the No. 2 shaft and it is intended to convey the coal from a part of the Forge Vein workings by that way, to the No. 2 shaft when necessary.

In the No. 4 slope a tunnel was driven from the Mills to the George seam on a grade of twenty degrees, to make a gravity plane. It is 300 feet in length and 7½×12 feet area. A second opening was driven to connect with the workings of the George seam in the No. 1 shaft, and from there an airway was driven out to the surface. Upon this airway to ventilate the George seam workings, a new fan was erected, 18 feet in diameter, which is exhausting about 50,000 cubic feet of air per minute. At the No. 6 shaft a rock gravity plane has been completed, extending up to the No. 6 tunnel. It is 700 feet in length on an average grade of 14 degrees.

A great deal of work has been done in enlarging the return airways in several of the mines of this company, which has effected a marked improvement in the ventilation in each case.

Improvements by the Kingston Coal Company.

At the No. 1 shaft a tunnel was driven 1,200 feet from the Bennett seam to what is supposed to be again the Bennett. Its size is 7½×11 feet. In the No. 2 shaft an outlet has been driven to the outcrop to be used as an intake and travelling way.

At the No. 4 shaft two underground slopes were completed in the Red Ash seam.

Improvements by the Delaware, Lackawanna and Western Railroad Company.

At the Avondale mine each of the two underground slopes were extended, and they have commenced to drive a tunnel from the Red Ash to the Ross. Its size is 7×12 feet. At the Woodward colliery, a rock tunnel was driven from the Red Ash seam to the Ross, and continued to be driven to the Baltimore seam. Its length now is 1,200 feet, having an area of 7×14 feet. The two slopes, one in the Red Ash seam, and the other in the Baltimore, were extended to a length of 1,713 and 3,700 feet respectively, the Baltimore slope being the longest. This is now an extensive mine, well ventilated and kept in good order.

Improvements by the Lehigh Valley Coal Company.

At the Franklin colliery a new tunnel has been driven from the Bottom Split of the Red Ash to the top split, a length of 210 feet, and a sectional area of 7×12 feet.

Improvements by the Alden Coal Company.

In the Red Ash seam of the Alden mine, a tunnel was driven across an anticlinal to the basin north of the present workings. It has an area of 90 square feet and is 1,400 feet in length. This is expected to open an extensive area of a good quality of coal.

Improvements by the Parrish Coal Company.

The underground slope of the Baltimore seam in the Parrish colliery has been extended a length of 1,450, feet making it a total length at present of 2,150 feet. It has a grade of about 6½ degrees and a sectional area of 7×12 feet.

Improvements by the Hillman Vein Coal Company.

This company has driven two tunnels, one from the Hillman to the Kidney seam, and the other from the Hillman to the Abbott seam. The former is 170 feet in length and the latter 337 feet. The sectional area of each is 7×12 feet.

Improvements by A. J. Davis.

At the Warrior Run colliery, a new pair of first motion hoisting engines have been erected. The cylinders are 30×48 inches, and the Cone Drum is large enough to carry 2,500 feet of 1.5 inch rope. This was procured to take the place of a single geared engine and is an effective improvement A short tunnel was also driven from the B to the C vein, a length of 120 feet, having an area of 90 square feet.

Improvements by the Newport Coal Company.

At the Lee colliery two new drifts were opened to the Red Ash seam, and a new slope was driven to a length of 546 feet. It has a varied pitch, the steepest being 70 degrees.

NEW SHAFTS IN PROGRESS OF SINKING.

The Maxwell shaft No. 20, of the Lehigh and Wilke-Barre Coal Company, after being sunk to the rock, was walled with excellent mason work up to the surface. The size of the shaft inside of the walling is 54×12 feet, and at the end of the year 1892 it was at a depth of 134 feet. Workings are being opened ready in the Jersey mine to run coal for this shaft, and the construction of a breaker is in progress.

The Delaware, Lackawanna and Western Railroad Company is sinking three new shafts in Hanover township. The first is named Bliss,

which is now at a depth of 201 feet. Its size is 43 feet 2 inches by 12 feet. The second shaft is the Auchincloss which is at a depth of 130 feet, and the third is intended to be an air-shaft and second opening, and is at a depth of 130 feet. The three are the same size h. y. $23\frac{1}{2}\times12$ feet. They are to be sunk to the lower seam, which is at a depth of about 700 feet.

The Parish Coal Company is reopening the old Buttonwood shaft and enlarging it. At the end of the year it was opened to a depth of 443 feet, and in its enlarged size of 32×12 feet, it has passed one of the seams partially mined when it was in operation about 25 years age.

The Newport Coal Company is sinking a new shaft $15\frac{1}{2}\times12\frac{1}{2}$ feet which is now at a depth of 70 feet and is expected to cut the Ross seam at a depth of 400 feet, and they expect to work the Ross and a split of the Baltimore seams.

There were a number of improvements effected beside those recorded above, such as additional steam boilers, pumps and machinery, and improvements in the distribution of the ventilation, and in the condition of the collieries in and out, which would be of no special interest to note in detail, in this report.

TABLE B.—*Showing the number and horse power of each class of engines and number of steam boilers in use at each colliery, in the Fourth Anthracite District, during 1893.*

NAMES OF THE COLLIERIES.	Number of hoisting engines.	Horse power.	Number of breaker engines.	Horse power.	Number of pumping engines.	Horse power.	Number of fan engines.	Horse power.	Number of donkey pumps.	Horse power.	Number of mine locomotives.	Horse power.	Total number of engines.	Total horse power of engines.	Number of steam boilers.
Lehigh and Wilkes-Barre Coal Company.															
1. Hollenback	5	1,000	1	100	2	935	4	366	4	120	. . .	. . .	16	2,521	39
2. Empire	6	835	1	60	2	950	2	140	4	125	2	80	17	2,190	30
3. South Wilkes-Barre	7	1,945	1	230	. . .	. . .	2	230	2	60	1	40	13	2,505	16
4. Stanton	9	1,725	1	60	1	900	2	405	5	100	1	60	23	3,250	38
5. Jersey No. 8	3	360	2	90	8	871	2	200	4	90	1	60	20	1,671	30
6. No. 9, Sugar Notch	4	550	2	70	3	300	2	180	4	80	1	60	17	1,240	25
7. Lance No. 11	2	900	1	40	5	450	2	200	7	280	. . .	. . .	17	1,870	30
8. Nottingham	8	2,700	2	160	10	3,000	2	300	7	210	2	120	32	6,490	41
9. Reynolds No. 16	6	560	1	60	2	100	2	70	3	120	1	40	15	950	19
10. Wanamie, Nos. 18 and 19	8	1,250	1	60	7	1,000	3	120	5	120	2	120	26	2,670	30
Totals	58	11,825	13	930	40	8,506	29	2,211	45	1,305	11	580	196	25,357	288
Delaware and Hudson Canal Company.															
11. Baltimore Shaft No. 2	6	. . .	1	. . .	. . .	. . .	2	. . .	2	. . .	. . .	. . .	11	. . .	12
12. Baltimore Shaft No. 3	2	. . .	1	. . .	. . .	. . .	1	. . .	1	. . .	. . .	. . .	5	. . .	33
13. Baltimore tunnel	6	300	1	37	. . .	. . .	2	160	3	315	2	60	18	872	21
14. Conyngham	9	. . .	1	. . .	1	. . .	3	. . .	3	. . .	. . .	. . .	17	. . .	28
15. Boston	8	280	1	40	. . .	. . .	1	40	6	260	. . .	. . .	16	620	15
16. No. 2, Plymouth	8	840	1	40	2	160	2	75	7	445	. . .	. . .	20	1,560	27
17. No. 3, Plymouth	4	260	1	35	1	300	1	45	2	8	. . .	. . .	9	648	21
18. No. 4, Plymouth	5	235	1	40	. . .	. . .	1	60	5	235	. . .	. . .	12	570	15
19. No. 5, Plymouth	6	205	1	40	1	80	2	95	4	160	1	20	15	600	21
Totals	54	2,120	9	232	5	540	15	475	37	1,423	3	80	123	4,870	183
Susquehanna Coal Company.															
20. Colliery No. 3	2	300	1	100	. . .	. . .	1	40	. . .	. . .	1	40	5	480	29
21. Colliery No. 5	10	5,600	1	100	1	300	4	380	2	40	2	80	20	6,500	67
22. Colliery No. 6	9	4,400	1	100	. . .	. . .	4	320	3	160	2	80	19	5,060	84
23. Colliery No. 7	9	4,800	2	200	5	355	9	660	3	165	7	320	35	6,500	87
Totals	30	15,100	5	500	6	655	18	1,400	8	365	12	520	79	18,540	267

Kingston Coal Company.															
24. No. 1 shaft,	1	121	....	....	2	122	1	25	11	77	....	....	15	345	36
25. No. 2 and 3 shafts,	5	600	1	90	2	200	2	100	3	40	3	56	16	1,086	39
26. No. 4 shaft,	3	520	1	120	2	200	2	192	2	18	....	....	10	1,050	24
27. Gaylord,	7	1,282	1	115	2	70	1	110	4	120	....	....	15	1,697	31
Totals,	16	2,523	3	325	8	592	6	427	20	255	3	56	56	4,178	130
Delaware, Lackawanna and Western R. R. Company.															
28. Avondale,	11	1,161	1	57	1	90	1	57	17	458	1	92	32	1,915	50
29. Woodward,	11	1,306	2	188	....	....	3	324	10	260	2	184	28	2,262	36
30. Auchincloss & Bliss,	3	171	....	....	....	....	2	36	6	87	....	....	11	294	....
Totals,	25	2,638	3	245	1	90	6	417	33	805	3	276	71	4,471	86
Lehigh Valley Coal Company.															
31. Dorrance,	2	300	1	80	1	80	2	140	....	....	1	40	7	640	18
32. Franklin,	8	764	1	80	5	550	4	159	3	72	....	....	21	1,625	39
Totals,	10	1,064	2	160	6	630	6	299	3	72	1	40	28	2,265	57
Red Ash Coal Company.															
33. No. 1 Red Ash,	1	500	1	30	....	....	1	15	3	60	1	40	7	645	15
34. No. 2 Red Ash,	2	472	2	75	....	....	1	16	1	6	....	....	6	569	8
Totals,	3	972	3	105	....	....	2	31	4	66	1	40	13	1,214	23
Miscellaneous Coal Companies.															
35. Alden Coal Company,	5	700	1	100	2	170	2	145	2	25	....	....	12	1,140	18
36. Dodson, Plymouth Coal Company,	2	200	1	55	2	95	1	70	1	5	....	....	7	425	17
37. Parrish Coal Company,	13	1,040	1	60	1	160	2	80	7	110	....	....	24	1,450	31
38. Maffet, Hanover Coal Company,	4	220	1	60	....	....	2	50	5	60	....	....	12	390	12
39. West End Coal Company,	6	210	1	35	6	65	3	90	1	20	2	50	19	470	22
40. Hillman Vein Coal Company,	4	160	1	30	....	....	1	80	3	50	....	....	9	320	12
41. Warrior Run, A. J. Davis,	2	....	1	30	3	....	1	....	1	....	....	....	8	30	28
42. Lee, Newport Coal Company,	4	240	1	70	....	....	....	....	3	18	....	....	8	328	9
Totals,	50	2,770	8	440	14	490	12	515	23	288	2	50	99	4,553	149
Grand totals,	246	39,042	46	2,937	80	11,503	50	5,775	173	4,579	36	1,642	665	65,448	1,183

THE ACCIDENTS OF 1892.

The fatal accidents during this year were 83. Two hundred and forty-three persons were more or less injured.

Of the fatal accidents 30.12 per cent occurred by explosions of fire-damp; 39.76 per cent. by falls of roof and coal; 14.46 per cent. in various ways by cars underground; 4.82 per cent. by explosions of powder and blasts; 3.61 per cent. in other ways underground; and 7.23 per cent. in various ways on the surface. Taking fatal and non-fatal accidents together, 25.85 per cent. occurred by explosions of fire-damp; 31.94 per cent. by falls of roof and coal; 16.73 per cent. by cars in various ways underground; 7.60 per cent. by explosions of powder and blasts; 7.99 per cent. by miscellaneous causes underground, and 9.89 per cent. in various ways on surface.

The most excusable classes of accidents are those which occur by explosions of fire-damp, except perhaps, those which occur from explosions of powder and blasts. In a gaseous mine where fire-damp is profusely exuded from every interstice of the coal, it requires extraordinary care to work and blast without igniting the gas-feeders, but in these cases an explosion rarely occurs, and injuries to the workmen rarely take place. In these places every precaution is exercised to prevent accidents, and they are meritoriously successful. Accidents from explosions of fire-damp mostly occur because the ordinary care and practice is neglected or overlooked. In most cases during the year 1892, accidents from the ignition of fire-damp happened where it was either known to be, or in places where every experienced person might reasonably expect it to be, and yet the ordinary practice of making an examination with the safety-lamp was neglected.

It is remarkable how frequently men will trust that a place is free of fire-damp, even when they doubt it, and rather than take the trouble of making an examination first with a safety-lamp, they will go on with naked lights hoping that it is safe. Many are burned more or less in this manner.

One serious accident occurred because an accumulated body of fire-damp ignited from a dynamite blast in a rock tunnel. On other occasions two fire-bosses and one mine foreman with others, were either killed or fatally injured, while the usual morning examinations were being made. These accidents are each explained in the proper tables of this report.

AN EXPLOSION OF GAS IN THE NO. 1 SHAFT, NANTICOKE.

On the morning of January 30, 1892, Thomas Cronan, a miner, and three laborers, viz, Eugene Alexander, Frank Fox and Michael Hocking, went to work at about seven o'clock at the face of a road breast driven on a small grade diagonally across a series of chute breasts in the Lee seam of the deep No. 1 shaft, Nanticoke. Their place had

crossed one breast about thirty feet down from the face, and had just holed through the pillar to a second breast. There was a cross-hole connecting these two breasts at the face, above the point where their place was crossing, and the air current prior to their cutting through the pillar, returned through this cross-hole at the face. The miner, Thomas Cronan, stated that he and Alexander examined their working place, and also examined the place through the hole in the breast in front of them, but did not examine the face of the old breasts above them. Richard Havard, the fire boss, reported that he examined the faces of the said old breasts at four o'clock a. m., and found them safe, and this led Cronan and his laborers to go to work without examining these points. Immediately after he started his men to work at the face, Cronan went back to his tool box, and in a short time an explosion of gas occurred, in which the three laborers were fatally burned. Evidently the gas was standing at the face of the old breast just crossed by their road, and it was brought down on their lights shortly after they started to work. Whether or not it accumulated while they were enlarging the hole in front and making a short passage for the air that way, is not known.

AN EXPLOSION OF GAS IN THE ALDEN COLLIERY.

Shortly after twelve o'clock on Wednesday, March 9, 1892, when a blast was fired in a rock tunnel in the Alden mine, an explosion of gas occurred, causing fatal injuries to John Kyora, Sr., John Kyora, Jr., and Henry Brown, and severe injuries to Elijah Jones, contractor, and Michael Dehaven. The tunnel was being driven across a basin through the top rock from a gangway in the Red Ash seam, about 300 feet east of the bottom of the shaft. The tunnel was driven at right angles to the gangway, and was in a distance or length of 200 feet. They charged two holes with dynamite, then they pulled the compressed air hose back out of the way, and all retreated to a point some sixty feet back on the gangway, or a total distance of 260 feet, and the shots were fired by a battery from that point. Instantly after the shock of the blasts, an explosion of gas occurred, causing the injuries to the men named. Gas accumulated rapidly along the roof between the brattice and the face when the air compressor was stopped, and the men, believing that a dynamite blast would not ignite the gas, did not exercise the care that should have been exercised. The flame extended out to the men and burned them, but the concussion of the explosion did the worst injury.

EXPLOSIONS OF GAS AT THE WEST END COLLIERY.

This accident happened at about 7:30 a. m. Tuesday, May 31, 1892, in what is known as "Sand Drift" of the West End colliery. There were only twelve places working in the mine and they were examined by the mine foreman in person every morning. There were six breasts only on the north side of the basin in which a small quantity of

fire-damp had been seen on some occasions. The mine foreman, John Protheroe, who had extensive experience as a fire-boss in gaseous mines before he took charge of this mine, there being only a few places he permitted the workingmen to go in on the gangway to wait while he examined the faces of the breasts. The pitch was over 30 degrees. On this morning he went up the inner breast, giving his naked light to a young man to take it back to the gangway ready for him when he would descend the outer breast. Protheroe and Henry Ritter, the miner, examined the inner breast together and found a small accumulation of gas at the face. Then Ritter descended to his platform while Protheroe went through the crosscut to the next breast. At the same time William Hooper, the miner who was working in a breast next to the outside one, went up his breast having a naked light on his hat and a charge of powder in his hand. When he had about reached the face a terriffic explosion of gas occurred, injuring everybody in that vicinity. Protheroe was found on the gangway opposite the second breast, dead, having been blown down by the explosion and killed instantly. William Hooper was severely burned and died the same night. John Walters, who was on the gangway, was so severely injured that he died within four hours. Henry Ritter, who had just got down to the platform of his breast, was fatally burned and died on June 2. Henry Hooper, Charles M. Ritter, H. M. Everhart, Fred. Everhart, William Deitrick, Frank Deitrick and Peter Yomlisk were all more or less burned and injured. They were all waiting along the gangway when the explosion took place. Evidently there was a larger accumulation of gas than any one suspected, and it appears that it was fired by Hooper, who went up the breast with a naked light before it was examined. Protheroe's safety lamp was not damaged and he had no other light. He made a serious error in permitting anybody to go into the workings before an examination had been made and the condition of the mine determined. It is unusual and unlawful to permit the men to pass the fire-boss station until the mine is examined and known to be safe.

EXPLOSIONS CAUSED BY FIRE-BOSSES.

Two fire-bosses were fatally injured, and one severely burned by explosions of gas during the year, beside the one already described as having happened to John Protheroe while acting as fire-boss.

Rule 5, section 12, of General Rules of the anthracite mine law, provides that "The mine foreman, or his assistant, shall make a careful examination every morning of all working places and travelling roads, and all other places which might endanger the safety of the workmen, before the workmen shall enter the mine, *and such examination shall be made with a safety-lamp* within three hours at most, before time for commencing work."

It is evident that the laws intent is to prohibit the use of naked light when making examinations; notwithstanding this prohibition an accident occasionally occurs from the practice of carrying naked lights. Mr. Anthony Gorham, a fire-boss in the Jersey colliery at Ashley, was most painfully burned while making an evening examination on the 31st of March, 1892. He unexpectedly entered a body of gas, with a naked light, at the face of a breast, and was severely burned. It is the possibility of gas accumulating at unexpected points that makes the examination first with a safety lamp so absolutely necessary, and in no case should a naked light be carried, until the places have been carefully tested with a safety lamp and ascertained beyond doubt to be safe.

On the morning of December 21, 1892, David D. Evans, fire-boss at the Parrish colliery, had nearly completed his examination, carrying only a safety lamp, but, the air current being strong he lighted his mining lamp to go up the slope, and having two places west of the inside slope to examine, in which he had never found gas, he walked ostensibly to mark them safe and fired a small body of gas, which burned him so badly that he died January 7, 1893. Mr. Evans was an experienced man, reputed to be careful, and could judge as well as any other person where the presence of gas might be expected, but he made a mistake in this case which cost him his life.

On Monday morning, December 26, 1892, three fire-bosses, viz: Thomas H. Williams, David R. Evans and James Corrigan descended the Avondale mine, each to examine separate sections. By half past six o'clock Evans and Corrigan had returned, having completed the examination of the sections allotted to each of them. Finding that Williams was longer than usual in making his appearance, they concluded that something must be wrong and went to look for him. On reaching the fourth lift in the No. 2 inside slope they saw unmistakable evidence of an explosion having taken place, and no sign of Williams. The after-damp was so dense, and the airways having been deranged, they went out at once for help and to inform the mine foreman. It being Christmas day the mine was idle, but Mr. Rees W. Morgan, the mine foreman and the fire-boss, went in and in a short time succeeded in getting into the fourth lift gangway and found Williams lying near the face of a level breast which had just broken up into the top coal, burned and dead. His staff, hat, and naked lamp were some 34 feet outside of him and his safety lamp was near by. It is not known how the gas was ignited. There was a large quantity of loose coal there, and some suggested that perhaps he slipped while raising the safety lamp on the pole causing it to swing through the gas at such speed as would pass the flame through the gauze. It might have been caused in that way, but it is hardly probable. However, the fact that there was a naked lamp, with him, indicated that he made use of it somewhere on his

route, and I would rather incline to the belief that the gas was ignited by the naked lamp, though as already stated there is no decided proof of it.

ACCIDENTS BY FALLS OF ROOF AND COAL.

Thirty-three fatal, and fifty-one non-fatal accidents occured during the year 1892, from falls of roof and falls of coal. A large number of these happened to persons returning to work too soon after blasting, and not allowing time for the material which might have been loosened by the blast to fall, before they went under to see what the blast had done. It is a too common practice by miners when a blast is fired to rush on and see what it has accomplished. They should wait a few minutes, at least, to allow the smoke to clear so that they can see the effect of the blast without exposing themselves to unnecessary danger. Many accidents happen also to persons who are in the act of prying down loose coal or rock and not exercising enough care in selecting a safe position to stand while doing the work. Men are frequently injured by the material which they are in the act of pulling down, falling on or against them. Places which have dangerous roofs are remarkably free from accidents because the men are constantly on the alert watching dangerous points. The largest number of accidents occur in places which are considered comparative safe.

A SAD ACCIDENT IN THE SOUTH WILKES-BARRE MINE.

At 6 o'clock Wednesday evening, July 6, 1892, a party of young mining engineers consisting of R. W. Smith, John L. Williams, Albert McCafferty, Walter Smith and George Hempstreet, descended the No. 5 shaft, South Wilkes-Barre colliery, to make a survey. They started at the foot of a gravity plane on the west level gangway. Thomas W. Jones, a miner, was assigned to attend them and examine the places before them. On reaching the first breast, which was a road breast, they took a sight up, and when in the act of measuring the distance a large body of bone and coal fell and buried Thomas W. Jones, John L. Williams and Albert McCafferty, killing them instantly. The two Smiths and Hempstreet who happened to be far enough back to escape uninjured, ran for help immediately. It took several hours of hard work to extricate the bodies. The fallen mass was twenty feet diameter and two feet in thickness. It is difficult to conceive how such a large mass could fall without giving ample sign of its breaking. It is certainly a very unusual occurrence for such a fall to take place without much cracking, or distinct indications of the breaking of the mass, for some time before the fall. There was no necessity for the engineers to make their survey of this breast just at this time, and they most probably

would not have attempted it if they had thought of the least danger pending. But Thomas W. Jones, who had examined it and evidently thought there was no imminent danger, permitted the young men to go on and stayed there with them and met the same fate. They would have completed their work in that breast in about three minutes if the accident had not occurred and would have gone to other places.

John L. Williams was 24 years of age, was a student of mining engineering at the Lehigh University, having just completed his third year. Having an opportunity to practice work during vacation in the line he was preparing himself for, he went to work for the first time with this party that night. He was the only son of Mine Inspector G. M. Williams.

Albert McCafferty came from Philadelphia, where his parents resided, only that morning, he having obtained employment with this party. He was also a new employe, starting on his first shift a bright, promising young man, and as I am informed, was the only son of his parents. The accident occurred at 7:35 p. m.

TABLE 1.—*Showing location of collieries in the Fourth Anthracite Mine District.*

NAME OF COLLIERY.	Name of Operator.	Location—Luzerne County.	Name of Superintendent.	Postoffice Address.
Hollenback	Lehigh and Wilkes-Barre Coal Company	Wilkes-Barre	Elmer H. Lawall, general manager; W. J. Richards, chief mining engineer; Morgan R. Morgans, inside superintendent; W. H. Herring, outside superintendent.	Wilkes-Barre, Pa.
Empire	do.	do.		
Stanton	do.	do.		
South Wilkes-Barre	do.	do.		
Jersey No. 8	do.	do.		
Shaft No. 9	do.	do.		
Lance No. 11	do.	do.		
Nottingham No. 15	do.	do.		
Reynolds No. 16	do.	do.		
Wanamie Nos. 18 and 19	do.	Wanamie		
Baltimore shaft No. 2	Delaware and Hudson Canal Company	Wilkes-Barre	A. H. Vandling, general manager; C. H. Scharar, chief mining engineer.	Providence and Scranton, Pa.
Baltimore shaft No. 3	do.	do.		
Baltimore tunnel	do.	do.		
Conyngham	do.	do.		
Boston	do.	do.		
No. 2 Plymouth	do.	do.		
No. 3 Plymouth	do.	do.		
No. 4 Plymouth	do.	do.		
No. 5 Plymouth	do.	do.		
No. 2 slope	Susquehanna Coal Company	Nanticoke	J. A. Stearns, general manager; J. H. Bowden, chief mining engineer; George F. Morgan, general superintendent.	Wilkes-Barre and Nanticoke, Pa.
No. 3 colliery	do.	West Nanticoke		
No. 4 slope	do.	Nanticoke		
No. 6 slope	do.	Glen Lyon		
No. 1 shaft	do.	Nanticoke		
No. 2 shaft	do.	do.		
No. 6 shaft	do.	Glen Lyon		
No. 6 tunnel	do.	do.		
No. 1 shaft	Kingston Coal Company	Edwardsdale	Daniel Edwards, Gwilym Edwards and Morgan D. Rosser, assistants.	Kingston, Pa.
No. 2 shaft	do.	do.		
No. 3 shaft	do.	do.		
No. 4 shaft	do.	do.		
Gaylord	do.	Plymouth		
Avondale	Delaware, Lackawanna and Western R.R. Co.	Plymouth township	W. R. Storrs, general manager; W. H. Storrs, general outside superintendent; B. Hughes, general inside superintendent.	Scranton, Pa.
Woodward	do.	do.		
Dorrance	Lehigh Valley Coal Company	Wilkes-Barre	W. A. Lathrop	Wilkes-Barre, Pa.
Franklin	do.	do.		
No. 1 Red Ash	Red Ash Coal Company	do.	M. B. Williams	do.
No. 2 Red Ash	do.	do.		
Alden	Alden Coal Company	Alden	K. M. Smith	Alden Station, Pa.
Dodson	Plymouth Coal Company	Plymouth	James B. Davies	Plymouth, Pa.
Parrish	Parrish Coal Company	do.	H. H. Ashley	do.
West End	West End Coal Company	Moenaqua	Charles Conyngham	Wilkes-Barre and Shickshinny.
Lee	Newport Coal Company	Newport township	Charles Parrish	Wilkes Barre, Pa.
Maffet	Hanover Coal Company	Sugar Notch	Jacob Roberts, Jr.	do.
Hillman Vein	Hillman Vein Coal Company	Wilkes-Barre	S. J. Tonkin	do.
Warrior Run	A. J. Davis	Hanover township	A. J. Davis	do.

TABLE NO. 2.—*Showing the total number of tons of coal mined in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the Fourth Anthracite Mining District for the year ending December 31, 1892.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	No. days work.	No. persons employed.	No. fatal accidents.	No. non-fatal accidents.	No. kegs powder used.	No. steam boilers.	No. horses and mules.	No. mine locomotives.
Lehigh and Wilkes-Barre Coal Company.											
1. Hollenback No. 2,	Wilkes-Barre,	65,206.18	52,116.18	. . . . .	442	5	3	2,693	39	50	. . .
2. Empire No. 1,	do.	269,811.16	266,242.11	180.40	727	3	8	8,113	30	74	2
3. South Wilkes-Barre Coal Co. Nos. 3 and 5,	do.	142,702.11	141,039.01	46.80	593	1	4	3,785	16	56	1
4. Stanton No. 7,	do.	192,049.19	177,913.19	160.30	639	2	8	3,354	43	70	1
5. Jersey No. 8,	Ashley,	108,473.19	102,581.19	167.20	391	2	5	3,429	30	34	1
6. Sugar Notch No. 9,	Sugar Notch,	206,461.10	203,905.22	188.10	624	1	5	8,479	35	65	1
7. Lance No. 11,	Plymouth,	266,335.02	264,993.02	174.95	748	2	7	8,234	20	94	. . .
8. Nottingham No. 15,	do.	395,189.15	390,565.05	132.75	1,183	2	8	9,137	31	144	2
9. Reynolds No. 16,	do.	177,027.03	176,700.03	188.50	533	. . .	6	4,983	19	74	1
10. Wanamie Nos. 18 and 19,	Wanamie,	239,277.15	237,420.15	186.65	704	1	8	7,119	30	82	2
Totals,		2,062,536.08	2,013,476.15	*173.60	6,584	25	62	59,326	293	743	11
Delaware and Hudson Canal Company.											
11. Baltimore shaft, No. 2,	Wilkes-Barre,	88,199	88,199	173	250	1	4	3,739	12	20	. . .
12. Baltimore shaft, No. 3,	do.	96,341.19	96,341.19	205.75	309	2	4	3,387	23	49	. . .
13. Baltimore tunnel,	do.	118,363.17	114,647.11	208.75	337	. . .	. . .	4,137	21	42	. . .
14. Conynham,	do.	46,771.04	44,936.15	154.25	236	. . .	1	1,422	28	26	. . .
15. Boston,	Plymouth township.	133,780.16	127,780.16	160.50	277	1	. . .	3,221	15	31	. . .
16. Shaft No. 2,	do. do.	161,803.03	161,803.03	210.50	357	. . .	2	3,371	27	43	. . .
17. Shaft No. 3,	do. do.	207,606.13	205,335.09	212	439	. . .	2	7,058	21	57	. . .
18. Shaft No. 4,	do. do.	181,076.11	181,076.11	217	410	. . .	1	6,285	15	54	. . .
19. Shaft No. 5,		174,964.19	170,696.09	189	315	2	. . .	3,700	21	46	1
Totals,		1,208,908.02	1,190,817.13	*192.30	2,930	6	14	36,298	183	368	1
Susquehanna Coal Company.											
20. No. 1 shaft George vein,	Breaker No. 2,	91,137.05	. . . . .	. . . . .	. . . . .	4	5	. . . . .	86	188	7
21. No. 1 shaft Forge vein,	Breaker No. 2,	337,358.10	. . . . .	222.20	1,582	6	13				
22. No. 1 shaft Lee vein,	Breaker No. 7,					2	4				
23. No. 2 Slope,								30,602	29	26	1
24. No. 3 Breaker,	West Nanticoke.	72,459.10	1,383,816.01	123.30	124	. . .	1				

*Average.

TABLE NO. 2—*Continued.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	No. of days worked.	No. persons employed.	No. fatal accidents.	No. non-fatal accidents.	No. kegs powder used.	No. steam boilers.	No. horses and mules.	No. of mine locomotives.
Susquehanna Coal Company—Continued.											
25. No. 2 shaft, 26. No. 4 slope, Breaker No. 5.	Nanticoke,	504,821.19		254.45	1,141	6	5		66	148	2
27. No. 6 shaft, 28. No. 6 slope, 29. No. 6 tunnel, Breaker No. 6.	Glen Lyon, do. do.	398,574.07		216.80	1,242	4 2 1	5 9		84	154	2
Totals,		1,404,351.11	1,383,816.01	*204.18	4,089	25	45	30,602	265	516	12
Kingston Coal Company.											
30. Shaft No. 1, 31. Shaft No. 2, 32. Shaft No. 3, 33. Breaker No. 4, Breaker, No. 2,	Edwardsdale, do. do. do.	407,795.14	397,268.04	274.20 10.30	176 636 342	2 1	1 5	12,938	36 39 24	34 63 24	3
34. Gaylord slope and shaft,	Plymouth,	356,589.05	353,162.05	245.55	654	2	4	9,598	31	87	
Totals,		764,384.19	750,430.09	*259.87	1,808	5	10	22,536	130	208	3
Delaware, Lackawanna and Western Railroad Company.											
35. Avondale,	Plymouth township,	192,502.03	171,502.03	177.20	486	3	4	4,638	50	78	1
36. Woodward,	do.	212,478.14	186,530.14	185.50	604	1	6	5,364	36	69	2
Totals,		404,980.17	358,032.17	*181.35	1,100	4	10	10,002	86	147	3
Lehigh Valley Coal Company.											
37. Dorrance,	Wilkes-Barre,	98,313.03	85,910.13	199.35	269	1	2	2,135	18	35	1
38. Franklin,	do.	127,160.17	110,070.17	170.25	442	2	8	3,672	39	46	
Totals,		225,474	195,981.10	*184.80	711	3	10	5,807	57	81	1
Red Ash Coal Company.											
39. Red Ash No. 1,	Wilkes-Barre township,	112,248.03	112,248.03	186	361			3,805	15	24	1
40. Red Ash No. 2,	do. do.	156,989.10	153,315.10	178.35	389	2		4,165	8	37	
Totals,		269,237.13	265,563.13	*182.17	750	2		7,970	23	61	1

Miscellaneous Coal Companies.											
41. Alden Coal Company,	Alden,	245,722.04	236,478.10	196.10	666	4	4	7,232	18	55	. .
42. Dodson Plymouth Coal Company,	Plymouth,	201,144	184,032	234.35	456	1	2	6,981	17	38	. . .
43. Parrish Coal Company,	do.	194,691.03	189,422.11	160.40	581	1	5	5,730	31	71	. . .
44. Maffet Hanover Coal Company,	Sugar Notch,	111,116.10	110,376.15	166.40	315	. . .	1	3,250	12	31	. . .
45. West End Coal Company,	Mocanaqua,	196,237.12	179,834.12	278.10	422	5	10	4,311	22	67	2
46. Hillman Vein Coal Company,	Wilkes-Barre,	91,325.13	65,931.18	192.35	271	1	3	3,458	12	25	. . .
47. Warrior Run, A. J. Davis,	Warrior Run,	116,694	100,859	196.90	292	. . .	3	3,270	28	21	. . .
48. Lee Newport Coal Company,	Newport township,	52,800.10	49,576.10	181.20	206	1	1	1,647	9	17	. . .
Totals,		1,209,731.12	1,116,511.16	*200.72	3,209	13	29	35,879	149	325	2

Recapitulation.

Lehigh and Wilkes-Barre Coal Company,	†2,062,536.08	†2,013,476.15	173.60	6,584	25	62	59,326	293	743	11
Delaware and Hudson Canal Company,	1,208,908.02	1,190,817.13	192.30	2,930	6	14	36,298	183	368	1
Susquehanna Coal Company,	1,404,351.11	1,383,816.01	204.18	4,089	25	45	30,602	265	516	12
Kingston Coal Company,	764,384.19	750,430.09	259.87	1,808	5	10	22,536	130	208	3
Delaware, Lackawanna and Western Railroad Company,	404,980.17	358,032.17	181.35	1,100	4	10	10,002	86	147	3
Lehigh Valley Coal Company,	225,474	195,981.10	184 80	711	3	10	5,807	57	81	1
Red Ash Coal Company,	269,237.13	265,563.13	182.17	575	2	. . .	7,970	23	61	1
Miscellaneous coal companies,	1,209,731.12	1,116,511.16	200.72	3,209	13	29	35 879	149	325	2
Totals,	7,549,605.02	7,274,630.14	*197.37	21,006	83	180	208,420	1,186	2,449	34

* Average.

† Of the total production of the Lehigh and Wilkes-Barre, 148,118 tons was buckwheat coal and culm, and 146,441.15 tons of the shipments was buckwheat and culm.

TABLE NO. 3.—*Showing the number of each class of employes at each colliery in the Fourth Anthracite District during the year 1892.*

NAMES OF COLLIERIES.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand total inside and outside.
	Inside foremen.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All other company men.	Superintendents, bookkeepers and clerks.	Total outside.	
Lehigh and Wilkes-Barre Coal Company.															
1. Hollenback	1	75	96	64	27	24	287	1	5	20	60	68	1	155	442
2. Empire	1	184	150	88	56	27	506	1	4	13	130	72	1	221	727
3. South Wilkes-Barre	1	108	131	74	24	29	367	1	7	15	119	83	1	226	593
4. Stanton No. 7	1	123	142	41	50	19	376	1	4	26	161	68	3	263	639
5. Jersey No. 8	1	97	80	43	17	24	262	1	4	15	104	4	1	129	391
6. Sugar Notch No. 9	1	150	100	75	41	35	402	1	6	17	117	80	1	222	624
7. Lance No. 11	1	145	142	92	60	38	478	1	5	15	195	53	1	270	748
8. Nottingham	1	275	250	114	90	51	781	1	7	17	274	101	2	402	1,183
9. Reynolds No. 16	1	116	109	49	47	18	340	1	3	11	127	50	1	193	533
10. Wanamie	1	160	145	67	45	33	451	1	6	13	158	74	1	253	704
Totals	10	1,433	1,345	707	457	298	4,250	10	51	162	1,445	653	13	2,334	6,584
Delaware and Hudson Canal Company.															
11. Baltimore shaft No. 2	1	37	37	30	22	5	132	1	4	9	76	26	2	118	250
12. Baltimore shaft No. 3	1	52	52	21	32	2	160	1	5	9	93	40	1	149	309
13. Baltimore tunnel	1	60	50	31	35	8	185	1	6	17	87	38	3	152	337
14. Conyngham	1	35	35	21	15	8	115	1	4	13	75	26	2	121	236
15. Boston	1	44	50	35	22	8	160	1	4	11	60	40	1	117	277
16. Shaft No. 2	1	72	80	37	32	9	231	1	4	15	63	41	2	126	357
17. Shaft No. 3	1	99	99	48	56	23	326	1	4	16	61	30	1	113	439
18. Shaft No. 4	1	97	97	49	48	18	310	1	5	10	44	38	2	100	410
19. Shaft No. 5	1	62	62	50	28	14	217	1	5	9	43	39	1	98	315
Totals	9	558	562	322	290	95	1,836	9	41	109	602	318	15	1,094	2,930

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Susquehanna Coal Company.															
20. No. 1 shaft, G seam.															
21. No. 1 shaft, F seam.															
22. No. 1 shaft, Lee seam.	3	331	495	259	156	71	1,315	1	2	31	116	115	2	267	1,582
23. No. 2 slope.															
24. No. 3 West Nanticoke.															
25. No. 2 shaft.	1	17	21	6	9	. . . .	54	1	3	3	32	31	. . . .	70	124
26. No. 4 slope.															
27. No. 6 shaft.															
28. No. 6 slope.	2	192	260	191	100	46	791	1	27	31	103	186	2	350	1,141
29. No. 6 tunnel.															
Totals.	3	264	383	121	160	39	970	1	14	19	154	82	2	272	1,242
	9	804	1,159	577	425	156	3,130	4	46	84	405	414	6	959	4,089
Kingston Coal Company.															
30. Shaft No. 1.	1	56	36	28	26	8	155	1	9	6	. . . .	3	2	21	176
31. Shaft No. 2.															
32. Shaft No. 3.	2	140	91	48	56	38	375	3	18	11	164	63	2	261	636
33. Shaft No. 4.	1	85	43	28	31	7	195	. . .	. . . .	7	120	20	. . . .	147	342
34. Gaylord.	2	131	110	60	86	30	419	1	9	10	177	37	1	235	654
Totals.	6	412	280	164	199	83	1,144	5	36	34	461	123	5	664	1,808
Delaware, Lackawanna and Western Railroad Company.															
35. Avondale.	2	134	93	48	56	9	342	1	6	8	79	60	. . . .	154	496
36. Woodward.	2	145	157	44	72	26	446	2	21	9	50	76	. . . .	158	604
Totals.	4	279	250	92	128	35	788	3	27	17	129	136	. . . .	312	1,100
Lehigh Valley Coal Company.															
37. Dorrance.	1	42	37	23	34	4	141	1	6	8	68	42	3	128	269
38. Franklin.	2	95	80	33	42	17	269	1	10	22	80	58	2	173	442
Totals.	3	137	117	56	76	21	410	2	16	30	148	100	5	301	711
Red Ash Coal Company.															
39. Red Ash No. 1.	1	80	90	19	22	12	224	1	6	5	67	56	2	137	361
40. Red Ash No. 2.	1	89	92	20	36	14	252	1	6	5	67	56	2	137	389
Totals.	2	169	182	39	58	26	476	2	12	10	134	112	4	274	750
Miscellaneous Coal Companies.															
41. Alden.	1	152	150	68	59	20	450	1	10	12	134	53	6	216	666
42. Dodson.	1	82	90	80	43	21	323	1	5	7	77	40	3	133	456
43. Parrish.	2	93	103	63	54	19	334	2	7	21	148	66	3	247	581
44. Mallet.	1	78	68	16	18	13	194	1	4	7	61	45	3	121	315
45. West End.	2	115	104	25	34	5	285	1	5	14	50	64	3	137	422
46. Hillman Vein.	1	60	60	28	13	20	182	1	3	6	51	25	3	89	271
47. Warrior Run.	2	84	61	34	15	10	206	1	5	10	47	21	2	86	292
48. Lee.	1	32	41	26	14	2	116	1	4	8	64	11	2	90	206
Totals.	11	696	677	346	250	110	2,090	9	43	85	632	325	25	1,119	3,209

TABLE NO. 3.—*Continued—Recapitulation.*

NAMES OF COLLIERIES.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand total inside and outside.
	Inside foremen.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All other company men.	Superintendents, bookkeepers and clerks.	Total outside.	
Lehigh and Wilkes-Barre Coal Company	10	1,433	1,345	707	457	298	4,250	10	51	162	1,445	653	13	2,334	6,584
Delaware and Hudson Canal Company	9	558	562	322	290	95	1,836	9	41	109	602	318	15	1,094	2,930
Susquehanna Coal Company	9	804	1,159	577	425	156	3,130	4	46	84	405	414	6	959	4,089
Kingston Coal Company	6	412	280	164	199	83	1,144	5	36	34	461	123	5	664	1,808
Delaware, Lackawanna and Western Railroad Company	4	279	250	92	128	35	788	3	27	17	129	136	. . . .	312	1,100
Lehigh Valley Coal Company	3	137	117	56	76	21	410	2	16	30	148	100	5	301	711
Red Ash Coal Coal Company	2	169	182	39	58	26	476	2	12	10	134	112	4	274	750
Miscellaneous coal companies	11	696	677	346	250	110	2,090	9	43	85	632	325	25	1,119	3,209
*Totals	54	4,488	4,572	2,303	1,883	824	14,124	44	272	531	3,956	2,181	73	7,057	21,181

*In addition to the above list of employes, 70 men were employed at the Maxwell shaft and No. 11 air shaft of the Lehigh and Wilkes-Barre Coal Company, 173 were employed at the Auchincloss and Bliss shafts of the Delaware, Lackawanna and Western Railroad Company, and 55 at the new Buttonwood shaft of the Parrish Coal Company, making the total number of employes equal 21,479 persons.

TABLE NO. 4.—*List of fatal accidents which occurred in and about the mines of the Fourth Anthracite Mine District year ending December 31, 1892.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	Number of orphans.	Name of Colliery.	Location—Luzerne County.	Nature and Cause of Accident.
Jan. 11,	1	James McGarry,	Laborer,	36		1	Franklin,	Wilkes-Barre,	Fatally injured by a fall of top coal in a gangway-face; died two hours after.
14,	2	John Charmie,	Miner,	33	1	4	West End,	Mocanaqua,	Fatally injured by a fall of rock when in the act of replacing a prop; his arm was crushed so that amputation was deemed necessary; he died soon after the operation.
30,	3	Frank Fox,	Laborer,	24			Shaft No. 1, Lee vein,	Nanticoke,	The three were fatally burned by an explosion of gas at the intersection of a counter gangway; no satisfactory explanation was given as to the presence of gas; they were loading the first car in the morning when unexpectedly the explosion took place; Alexander died on February 1st, Hockin on the 5th and Fox on the 9th.
30,	4	Eugene Alexander,	do.	26					
30,	5	Max Hockin,	do.	29					
Feb. 15,	6	Joseph Shipkowski,	do.	42	1	7	Shaft No. 2,	do.	Killed by a fall of rock while unnecessarily visiting an old breast.
17,	7	Michael Kennedy,	do.	36	1	5	Empire,	Wilkes-Barre,	Instantly killed by a fall of top coal at the face of counter gangway in the Ross seam.
20,	8	George Gibbs,	Brattice man,	22			Shaft No. 1, Forge vein,	Nanticoke,	Taking a short road across a low anticlinal he ignited a small quantity of gas and was fatally burned; James Martin was burned at the same time; Gibbs died the following morning.
Mar. 2,	9	Frank Yadomski,	Laborer,	42	1	5	Breaker No. 2,	do.	Attempted to board a railroad car just as it was entering under the breaker and was crushed between it and post; his injuries caused his death that evening.
7,	10	William Murrack,	Miner,	43	1	7	Empire,	Wilkes-Barre,	Instantly killed by a fall of top coal; while poking loose coal out of the bottom bench a piece off the edge of the top coal fell on him.
8,	11	Ulysses Jones,	do.	23	1	1	Avondale,	Plymouth twp.,	On going into an abandoned breast to obtain a prop they exploded a body of gas and were both severely burned; Jones died on March 9th and Rowe on the 15th.
8,	12	John Rowe,	Laborer,	21					

TABLE NO. 4.—*Continued.*

Date of accident	No. of accident	NAME OF PERSON.	Occupation.	Age.	Widow	Number of orphans.	Name of Colliery.	Location—Luzerne County.	Nature and Cause of Accident.
9,	13	John Kyora, Jr.,	Laborer,	19			Alden,	Newport township,	While firing a blast in a rock tunnel in which a small body of gas had accumulated, the blast ignited the gas, causing a forceful concussion of the air; the workmen at a point 250 feet back were severely injured and these three died within the next two days, and Elijah Jones, the contractor, and Michael Dehaven were severely injured.
9,	14	John Kyora, Sr.,	Blacksmith,	15	1	2			
9,	15	Henry Brown,	Miner,	24	1				
12,	16	Dominick Phil. Wallace,	Laborer,	36	1	2	Lance No. 11,	Plymouth twp.,	Killed by a fall of top coal in a breast in the Cooper seam.
Apr. 1,	17	John Toth,	do.	42	1	5	Shaft No. 5,	do.	Instantly killed by the sudden fall of a large three-cornered piece of coal slipping out of the top coal roof.
11,	18	Tudor Letchis,	do.	25			Shaft No. 6,	Glen Lyon,	While riding on the front corner of a car, the mule pulling it, the car jumped off the track and ran against the timbering crushing him between; his injuries resulted in his death April 22d.
14,	19	Mike Darressa,	Runner,	22			do.	do.	While riding up the gravity plane on the front end of empty car, it jumped the track and collided with the descending loaded car crushing him to death between; the footman tried to prevent him from riding but failed.
18,	20	John Foy,	Driver,	20			Red Ash, No. 2,	Wilkes-Barre twp.,	While riding on a car going in the gangway a fall of roof crushed him to death; the mule was also killed; both were buried under the fall, it being of large area but only about five inches in thickness.
27,	21	John Joblonski,	Miner,	35			Shaft No. 9,	Sugar Notch,	While preparing a charge of powder it exploded burning him so severely that death ensued in a few hours.
May 3,	22	Edward Mooney,	do.	29			Shaft No. 5,	Plymouth,	Fatally hurt by a fall of coal at face of breast; died May 5th.
5,	23	Stephen Bossella,	Laborer,	36	1	2	Dorrance,	Wilkes-Barre,	Fatally hurt by a fall of coal at face of breast in Baltimore seam; died the same day.

6,	24	Patrick Mea,	Door-tender,	17	1	5	Shaft No. 3,	South Wilkes-Barre,	Following the driver to the face of the airway and on attempting to get on the front end of car to come out he slipped and fell under the car; his leg was badly crushed; amputation was performed at the hospital and he died at 4 a. m. May 9th.
6,	25	Andrew Vonosko,	Miner,	33	1	5	Shaft No. 6,	Glen Lyon,	While getting ready to replace a discharged prop the roof fell on him killing him almost instantly; his laborer and another man warned him of the dangerous condition of the roof but he did not heed them.
19,	26	August Barham,	Laborer,	40	1	1	Shaft No. 2,	Nanticoke,	Went up a pitching breast in which the existence of gas was reported, after being cautioned and before the miner had gone in; he fired the gas and was fatally burned; he died the following day.
20,	27	Joseph Bandoski,	Miner,	54	1	8	Shaft No. 1, Lee vein,	do.	Was going to put a temporary prop under a loose rock and hearing it cracking he tried to move back when the prop caused him to fall with his head under the falling rock and he was instantly killed.
20,	28	Stanley Barunski,	Laborer,	22			Gaylord,	Plymouth,	Instantly killed by a fall of coal while loading car at face of breast.
26,	29	Roger Flynn,	Driver,	20			Stanton,	Wilkes-Barre,	While riding on front end of car, being pulled out of the air-way, his head was crushed between the car and leg of timber; he died in about half an hour.
27,	30	Joseph Teresavidge,	Miner,	28			Shaft No. 3,	Plymouth,	Instantly killed by a large fall of rock roof in a breast in the Five Foot seam.
31,	31	John Protheroe,	Mine foreman,	47	1	1	West End,	Mocanaqua,	John Protheroe, instantly killed; John Walters, fatally hurt; died in four hours; William Hooper, fatally hurt; died that night; Henry Ritter, fatally hurt, died June 2nd. This accident occurred immediately after the men had entered the gangway; there were only six places working and while the foreman was making an examination an explosion of gas took place killing him instantly and injuring all the other persons who were in that gangway more or less; three of them died whose names are here given; for names of the other persons injured and full description of the accident see another part of this report.
31,	32	John Walters,	Laborer,						
31,	33	William Hooper,	Miner,			4			
31,	34	Henry Ritter,	do.						
June 2,	35	Jonah Davies,	Fire-boss,	62	1	3	Boston,	Plymouth twp.,	Instantly killed; a trip of descending cars struck him and ran over him on the slope.
13,	36	Simon Brown,	Miner,	32	1	1	Lee,	Newport township,	Instantly killed by being struck by a large piece of coal falling from end of pillar.
14,	37	Nicholas Hockreiter,	Laborer,	52	1	5	Hollenback breaker,	Wilkes-Barre,	Instantly killed by being crushed between a culm car and breaker timber.

TABLE NO. 4.—*Continued.*

Date of Accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	Number of orphans.	Name of Colliery.	Location Luzerne County.	Nature and Cause of Accident.
June 18,	38	John B. Scanlon,	Laborer	41	1	2	Hollenback,	Wilkes-Barre,	While loading a car on the night shift at the face of the airway a large area of the roof began to crack and before they had time to escape it fell on them killing Scanlon instantly; Ryder died in twelve hours after, and the miner William Williams was painfully injured.
18,	39	Samuel Ryder,	do.	24					
24,	40	Mike Chilak,	do.	22			Nottingham,	Plymouth,	Killed by a fall of coal; it burst down from the top coal some distance back and he, in trying to escape, ran right under it.
24,	41	Joseph Quaack,	do.	30			Baltimore shaft No. 2,	Wilkes-Barre twp.,	Found dead in a car, covered nearly with coal, under the breast chute; he evidently when lifting the stopping board fell on his back into the car and the coal ran down and covered him; there was no one present and he was not discovered for several hours, it being the last car for the day everybody had gone home.
July 6,	42	Thomas W. Jones,	Miner,	41	1		Shaft No. 5,	South Wilkes-Barre	The three were instantly killed by a large fall of bone roof while surveying a breast in the Baltimore seam; it happened at half-past seven o'clock, p. m.
6,	43	John L. Williams,	Mine engineer,	24					
6,	44	Albert McCafferty,	do.	21					
6,	45	John Fedge,	Miner,	45			Wanamie No. 19,	Wanamie,	Had just fired a shot, and when loading a car soon after, a piece of coal fell on him breaking his neck against the top rail of car.
15,	46	Steve Oslavitch,	Laborer,	22			Nottingham breaker,	Plymouth,	Undertook to oil a pair of cog wheels and was caught in the machinery; his injuries were such as to cause his death the following day. It was another person's work to do the oiling.

13,	47	Frank Ferguson,	do.	27			Hillman vein,	Wilkes-Barre,	Fatally burned by an explosion of gas; died at the hospital July 25. The miner, John Baird, was kneeling, drilling a hole at the face when the laborer came up with naked light and ignited a small quantity of gas. The miner shouted to him to take his light down, but he walked on, evidently not understanding what the miner wanted. The miner was also painfully burned.
13,	48	John Mattimore,	Miner,	38	1	5	Jersey No. 8,	Ashley,	Deceased was opening a pitching breast. A small quantity of gas was reported to be at the face, and a danger mark was put up, but disregarding this, he went up with naked light and fired the gas and was burned so that death ensued on the following day; his laborer, Michael Green, was burned at the same time.
14,	49	Andrew Yesh	Laborer,	26			Shaft No. 1, Lee vein,	Nanticoke,	Crushed through a door at the front of a car and was instantly killed.
14,	50	Nathan Lamereaux,	Miner,	37	1	2	Shaft No. 1,	Edwardsdale,	The first was killed and the second fatally injured by an explosion of gas which occurred in some mysterious manner in the inside slope; Davies died same night.
14,	51	Thomas B. Davies,	do.	40	1	6			
16,	52	John Kupal,	Headman,	21			Slope No. 6,	Glen Lyon,	The car took the wrong track when he was pushing to the slope, and he went down with it; the pitch is about fifty degrees and he was instantly killed.
26,	53	Thomas B. Jameson,	Miner,	46	1	6	Shaft No. 3,	South Wilkes-Barre,	While withdrawing a charge of dynamite from a hole it exploded, injuring him so that death ensued the following morning.
28,	54	Joseph McEverican,	Laborer,	35	1		Woodward,	Plymouth twp.,	While pushing a car, another car following crushed him so that death ensued that night; it was a runaway car from an other place.
Aug. 6,	55	George H. Smith,	Miner,	23			Shaft No. 1, Forge vein,	Nanticoke,	Fatally hurt by a fall of coal; he was mining under it when it fell and struck him, causing injury from which he died shortly after being conveyed home.
8,	56	Voichack Kribinski,	Laborer,	20			Shaft No. 1, Lee vein,	do.	Killed by a small piece of rock falling on him; he and the miner had tried to pry it down about two hours before and failed.
8,	57	John Roshinski,	do.	45			Shaft No. 2,	do.	While working to make room for a pair of timbers a piece of rock unexpectedly fell on him, killing him instantly. They were reopening a squeezed gangway.
18,	58	John D. Morgan,	Footman,	22			Slope No. 2,	do.	Rope broke on slope and cars running back crushed him between the empty cars; he was killed and David Eynon was badly injured.
Sept. 2,	59	John Lebolski,	Miner,	30	1	2	Shaft No. 3,	Plymouth,	A blast knocked three props out; on his return after the blast the roof fell on him, injuring him so that death followed the same day.
7,	60	Thomas Cox,	Assist. foreman,	35			Franklin slope,	Wilkes-Barre,	Instantly killed by a fall of rock at the face of a breast. It fell without any notice.
13,	61	John Daley,	Laborer,	17			Gaylord breaker,	Plymouth,	Instantly killed by being caught while playing with the machinery.

TABLE NO. 4.—*Continued.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	Number of orphans.	Name of Colliery.	Location—Luzerne County.	Nature and Cause of Accident
Sept. 19.	62	John Polyick,	Miner,	27	1	1	Slope No. 6,	Glen Lyon,	Killed by a fall of rock; tried to escape, but he ran under it just as it was falling.
19.	63	John Eades,	Footman,	26	1	1	Shaft No. 1, Forge vein,	Nanticoke,	Killed by runaway cars at foot of slope by chain breaking.
25.	64	Frank Shillapock,	Miner,	30	1	...	Stanton,	Wilkes-Barre,	Fired a blast which closed one manway; this preventing the air from passing, which caused gas to accumulate; he went up with a naked light and fired it, burning both himself and his laborer, John Stankiwick; Shillapock died October 4.
Oct. 1.	65	Fred. Carver,	Door tender,	15	....	...	Lance No. 11,	Plymouth,	Fatally burned by an explosion of gas; died October 6; Wm. Hamilton, miner, and Louis Dedoski, laborer, were painfully burned by same explosion.
5.	66	Jacob Bosck,	Miner,	36	1	3	Alden,	Newport twp.,	Killed by a fall of top rock in a breast; it was a long, trough-like piece giving no warning
8.	67	Frank Zazitski,	Laborer,	50	1	4	Shaft No. 2,	Nanticoke,	Instantly killed by a fall of coal and slate; Thomas D. Morgan, the miner, was badly injured.
12.	68	John Colingofski,	do.	23	....	...	Hollenback,	Wilkes-Barre,	Stepped to the wrong side and was crushed between a car and rib; died in three hours after.
24.	69	Enoch I. Jones,	Miner,	50	1	5	do.	do.	Instantly killed by a premature blast; an ignited blower fired the squib.
Nov. 9.	70	Miran Rubinski,	Laborer	34	1	...	Shaft No. 2,	Nanticoke,	The former was killed and the latter was fatally injured, and died on the 14th, by an explosion of gas, the concussion of which blew them about; John Witherldge, Gomer R. Davies and John Furman were more or less injured by the same explosion.
9.	71	William A. Hughes,	Driver,	16	....	...			
12.	72	Thomas G. Hughes,	Miner,	36	1	5	Shaft No. 5,	South Wilkes-Barre,	Skull crushed by a piece of coal falling on him; he was in the act of prying the coal down when it struck him; he died shortly after while being taken to the hospital.
18.	73	Paul Zider,	Laborer,	40	....	...	Tunnel No. 6,	Glen Lyon,	Instantly killed by a fall of rock while widening the gangway to make a passing branch.

19,	74	John Kovalskie,	do.	32	1	1	Shaft No. 1, Forge vein,	Nanticoke,	Severely wounded on head by being struck by a piece of coal thrown from a blast; it passed through a door and struck him while he was at a point 100 feet away; he died November 28.
25,	75	Thomas Wells,	Stable boss,	45	1	2	Empire,	Wilkes-Barre,	Kicked by a mule; died in consequence on December 29.
Dec. 1,	76	Thomas B. Jones,	Miner,	28			South Wilkes-Barre,	do.	Fatally hurt by a blast; died shortly after he was taken out of the mine.
3,	77	Evan Griffiths,	Door tender,	16			Shaft No. 6,	Glen Lyon,	Struck by a runaway car on the gangway and fatally injured; died while being carried out.
19,	78	John Phillian,	Laborer,	28	1	1	Dodson,	Plymouth,	Killed by a fall of a bench of projecting rock at lower side of an old airway.
21,	79	David B. Evans,	Fire-boss,	39	1	4	Parrish,	do.	Burned by an explosion of gas while making a morning examination; died January 7, 1893.
24,	80	Andrew Meholsick,	Laborer,	26	1	1	Breaker No. 8,	Ashley,	Caught in the rolls; machinery started when he was on it and he was caught and injured so that death ensued the following day.
24,	81	Michael Comentsky,	do.	24	1		Shaft No. 4,	Edwardsdale,	Found under a loaded car partly down the breast dead; the car was on him and it was evident that he in some manner got under it while running it down; there was no one present when the accident occurred.
27,	82	Thomas H. Williams,	Fire-boss,	51			Avondale,	Plymouth twp.,	Found burned and suffocated in a breast by an explosion of gas.
28,	83	Job Hunt,	Miner,	37	1	7	Red Ash No. 2,	Wilkes-Barre twp.,	Fatally hurt by a fall of coal; died the same night.
		Totals,			42	137			

TABLE No. 4.—*Recapitulation of fatal accidents.*

OCCUPATION.	Number.	Per cent.	Nationality.	Number.	Per cent.	Causes of accidents.	Number.	Per cent.
Miners	27	32.54	American	12	14.46	By explosion of C H gas	25	30.12
Laborers	31	37.35	Welsh	14	18.87	By falls of roof and coal	33	39.76
Head and footmen	3	3.62	Irish	9	10.84	By falling down shafts		
Brattiemen	1	1.20	English	7	8.44	By mine cars under ground		
Drivers and runners	4	4.82	Polish	30	36.15	By explosions of powder and blasts	12	14.46
Door-tenders	3	3.62	Slav	8	9.64	By miscellaneous causes under ground	4	4.82
Mine foremen	2	2.40	German	2	2.40	By miscellaneous causes on surface	3	3.61
Fire-bosses	2	2.62	Canadian	1	1.20		6	7.23
Mining engineers	2	2.46						
Outside laborers	5	6.06						
Stable bosses	1	1.20						
Blacksmith	1	1.20						
Total	83	100		83	100		83	100

TABLE No. 5.—*List of non-fatal accidents which occurred in and about the mines of the Fourth Anthracite Mine District for the year ending December 31, 1892.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—Luzerne County.	Nature and Cause of Accident.
Jan. 1,	1	William Atkins,	Laborer,	55	Yes,	..	Wanamie No. 18,	Wanamie,	Right shoulder fractured; collar fell on him.
4,	2	August Blacksmith,	Miner,	58	Yes,	5	Lee,	Newport township,	Severe scalp wound by a fall of coal.
5,	3	Lewis Moon,	do.	29	Yes,	3	Slope No. 4,	Nanticoke,	Thigh fractured and face bruised; while barring top coal down a piece struck him.
9,	5	Lewis Thomas,	do	45	Yes,	5	Nottingham,	Plymouth,	Back and leg severely injured by a fall of rock in a gangway.
12,	5	Frank Movic,	do.	30	No,	..	Slope No. 6,	Glen Lyon,	Thigh broken by slate falling from under the top coal.
13,	6	William Oleskie,	Laborer,	26	No,	..	Empire,	Wilkes Barre,	Arm dislocated at shoulder-joint by falling at side of chute in breast.
15,	7	Daniel Molaski,	do.	22	Yes,	..	Empire,	do.	Foot badly hurt by a piece of rock falling on it.
20,	8	Peter Manson,	Miner,	47	Yes,	1	Shaft No. 9,	Sugar Notch,	Shoulder blade fractured; while pulling loose slate down a piece struck him.
22,	9	Mike Locateth,	Carpenter,	40	Yes,	..	Shaft No. 4,	Edwardsdale,	Arm broken by being struck by falling ice when working in the shaft.
22,	10	William T. Lewis,	Miner,	67	Yes,	6	Empire,	Wilkes-Barre,	Leg fractured by a fall of bony coal.
Feb. 2,	11	Ed. Budson,	Runner,	34	Yes,	3	Hollenback,	do.	Foot crushed under cars; lost his light when opening a door and the cars ran upon him.
3,	12	Ignatius Laucetski,	Miner,	38	Yes,	5	Slope No. 4,	Nanticoke,	Back and arm injured by a fall of rock while preparing to put timber to support it.
4,	13	Chas. Sershin,	do.	24	Yes,	..	Wanamie No. 18,	Wanamie,	Face and hands burned by an explosion of gas; going in with naked light after blasting.
5,	14	Andrew Gum,	do.	27	Yes,	1	Alden,	Alden,	Shoulder and back painfully bruised by a fall of rock.
5,	15	William J. Phillips,	Door-tender,	14	No,	..	Franklin,	Wilkes-Barre,	Leg fractured and cut; struck down by a runaway car while trying to open a door.
10,	16	Carl Short,	Miner,	34	Yes,	..	Shaft No. 9,	Sugar Notch,	Skull fractured by a premature blast.
12,	17	Daniel Kilroy,	do.	61	....	..	Franklin,	Wilkes-Barre,	Ankle severely bruised by a fall of bony coal.
20,	18	Benjamin Kenam,	do.	32	Yes,	..	Franklin,	do.	Head and arm cut and toe bruised by a fall of slate.
23,	19	Lawrence Scarmage,	do.	30	Yes,	..	Baltimore shaft No. 2,	Wilkes-Barre twp.,	Painfully injured by a blast.
24,	20	Barnett Snee,	Laborer,	53	Yes,	1	Stanton,	Wilkes-Barre,	Badly bruised by a fall of coal.

TABLE No. 5 – *Continued.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—Luzerne County.	Nature and Cause of Accident.
Feb. 24.	21	Robert Price,	Slate-picker,	14	No.	..	Franklin breaker,	Wilkes-Barre,	Fell twenty feet; cut on scalp and leg slightly bruised.
25.	22	Terry McDonnell,	Miner,	38	No.	..	Shaft No. 3,	Plymouth,	Small bone of leg fractured by coal falling from the rib.
26.	23	Thomas J. Hughes,	do.	29	Yes.	3	Warrior Run,	Warrior Run,	Leg fractured by a fall of rock; had tried to pry it down and failed.
29.	24	James Martin,	Bratticeman,	20	No.	..	Shaft No. 1, Forge vein,	Nanticoke,	Painfully burned on face, neck and hands by an explosion of gas; George Gibbs was fatally burned at the same time.
Mar. 8.	25	Henry Stout,	Driver,	18	No.	..	Baltimore shaft No. 2,	Wilkes-Barre twp.,	Leg fractured by mule falling on him.
9.	26	Charles Anderson,	Door-tender,	15	No.	..	Shaft No. 1, Lee vein,	Nanticoke,	Leg fractured by falling under a car on breast road.
9.	27	Elijah Jones,	Rockman,	35	Yes.	4	Alden.	Alden,	A dynamite blast exploded a quantity of gas in the rock tunnel and caused the accident; John Kyora, Sr., John Kyora, Jr., and Henry Brown, were fatally injured the same time.
9.	28	Michael Dehaven,	do.	22	....	..			Burned and bruised, Severely injured.
10.	29	John Good,	Miner,	49	Yes.	1	West End,	Mocanaqua,	Leg fractured and foot crushed by a fall of rock while examining the place.
11.	30	John Greygo,	Laborer,	21	No.	..	Breaker No. 2,	Nanticoke,	Foot cut off at ankle; was caught under a railroad car at the breaker.
12.	31	William Baker,	Miner,	26	No.	..	Shaft No. 6,	Glen Lyon,	Shoulder fractured by being caught between a car and a prop while trying to stop a car.
14.	32	Mathew Rooney,	Runner,	17	No.	..	Breaker No. 8,	Ashley,	Leg fractured; car jumped track and crushed him against trestle-rail.
18.	33	Martin Gillis,	Miner,	30	No.	..	Jersey No. 8,	do.	Badly squeezed between cars.
19.	34	Job Jones,	Runner,	35	Yes.	5	Reynolds, No. 16,	Plymouth,	Leg broken by being struck by a sprag in a passing wheel.
22.	35	Edward Powell,	Driver,	17	No.	..	Shaft No. 1, Lee vein,	Nanticoke,	Leg broken by falling under cars on level gangway.
28.	36	Jacob Gustofski,	Miner,	27	No.	..	Slope No. 6,	Glen Lyon,	Face and hands severely burned by an explosion of gas.

31,	37	Anthony Gorham,	Fire-boss,	45	Yes,	6	Jersey No. 8,	Ashley,	Face and hands burned by an explosion of gas; carried naked lamp while making an evening examination and unexpectedly entered a body of gas.
April 2,	38	Frank Krioski,	Laborer,	45	Yes,	..	Breaker No. 6,	Glen Lyon,	Chest and legs injured by being squeezed between cars.
5.	39	George Spare,	Driver,	17	No.	..	Reynolds No. 16,	Plymouth,	Severely cut on head and neck by falling from a mule.
8.	40	Anthony Gipe,	Slate-picker,	14	No.	..	Stanton breaker,	Wilkes-Barre,	Left arm crushed in cogwheels; caught while playing about them; his arm had to be amputated at the shoulder.
11.	41	John H. Davies,	Miner,	49	Yes,	5	Empire,	do.	Shoulder fractured by a fall of bony coal.
12.	42	William Hoskins,	do.	23	No,	..	Shaft No. 2,	Nanticoke,	Back and shoulder injured by a fall of top slate.
25.	43	Thomas O. Thomas,	do.	50	Yes,	..	Parrish,	Plymouth,	Severe flesh wounds about his eye by being struck by coal thrown from a blast.
26.	44	John Coola,	Laborer,	28	No.	..	Wanamie,	Wanamie,	Leg injured; jammed between moving cars.
27.	45	Thomas J. Thomas,	Miner,	37	Yes,	4	Parrish,	Plymouth,	Leg fractured by a fall of top coal which he was barring down.
27.	46	William S. Kulp,	do.	38	Yes,	..	Reynolds No. 16,	do.	Back severely bruised by a fall of slate.
29.	47	Patrick Bragan,	do.	45	Yes,	5	Avondale,	Plymouth township,	Head and arms severely bruised by a blast; he was returning supposing that it missed.
May 5.	48	Joseph Novay,	Oiler,	20	Yes,	..	Gaylord breaker,	Plymouth,	One rib fractured by being struck by the elevator chain.
5.	49	Morris Hontz,	Door-tender,	17	No.	..	Wanamie No. 18,	Wanamie,	Severe scalp wound; struck his head against top frame of door while riding on cars.
6.	50	George McHale,	Driver,	17	No.	..	Shaft No. 4,	Edwardsdale,	Arm broken; car jumped track and crushed him against the rib.
11.	51	Patrick McCrane,	Miner,	46	Yes,	8	Maffet,	Sugar Notch,	Foot badly crushed by a fall of coal.
12.	52	Louis Petrofski,	Laborer,	33	Yes,	2	Colliery No. 3,	West Nanticoke,	Thigh fractured by a fall of coal from rib.
12.	53	Timothy Spargo,	Miner,	38	Yes,	2	Shaft No. 2,	Plymouth,	Severely bruised about head and body by a fall of coal.
12.	54	Charles Rusky,	Laborer,	22	No,	..	Nottingham,	do.	Toe crushed by a piece of coal falling on it.
12.	55	Thomas Russell,	Miner,	30	No.	..	Nottingham,	do.	Face cut and bruised by a blast; it fired when he was returning, thinking it had missed.
13.	56	Nathan Richards,	Laborer,	24	Yes,	..	Stanton breaker,	Wilkes-Barre,	Breast bone, ribs and leg fractured; struck down by a railroad car.
16.	57	Henry Andraiozog,	Runner,	23	Yes,	..	Shaft No. 6,	Glen Lyon,	Arm broken and cut about head; crushed between loaded and empty cars on a passing branch.
17.	58	Stephen Menolski,	Laborer,	21	No,	..	Avondale,	Plymouth township,	Thigh fractured and internally injured by a fall of bony coal.
17.	59	Peter Curran,	Miner,	35	Yes,	..	Slope No. 6,	Glen Lyon,	All more or less burned by an explosion of gas; they were driving a rock passage to the rise; after firing a round of blasts they ate a lunch; then they went up to the face with naked lights. A small quantity of gas had accumulated which ignited and burned them quite painfully.
17.	60	Michael McHale,	do.	27	No,	..			
17.	61	Richard Coslet,	do.	26	No,	..			
17.	62	Owen Grillith,	do.	33	Yes,	..			
18.	63	John Harkins,	do.	26	Yes,	1	Shaft No. 9,	Sugar Notch,	Deep cut on arm; struck by the blasting tube when firing a blast.
20.	64	Michael Cavatzki,	Laborer,	32	Yes,	5	Shaft No. 1, Lee vein,	Nanticoke,	Stood carelessly in the way when firing a blast and a piece of coal knocked his eye out.

TABLE No. 5—*Continued.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—Luzerne County.	Nature and Cause of Accident.
May 23.	65	John Gregra,	Laborer	38	Yes.	4	Franklin.	Wilkes-Barre.	Severely cut on left hip by a fall of bony coal.
24.	66	Patrick Curran,	Driver.	21	No.	..	Hillman vein.	do.	Spine fractured while riding on front of car; he was crushed between a door frame and top of car.
25.	67	Thomas P. Gallagher,	Miner.	50	Yes.	1	Franklin,	do.	Face and head cutand bruised by a premature blast.
27.	68	Robert Thomas.	Carpenter.	27	Yes.	1	Empire.	do.	Shoulder and hips injured by a fall of slate.
31.	69	Henry Hooper,	Laborer.	..	No.	..	Sand drift West End colliery.	Mocanaqua.	These seven men were more or less burned and bruised by an explosion of gas occurring shortly after they entered the mine; they were on the gangway waiting for the foreman, John Protheroe, to examine their working places with a safety lamp when a terrific explosion took place; John Protheroe was instantly killed and John Walters, William Hooper who had gone up his breast with a naked light, and Henry Rtter were fatally injured; it is presumed that the gas ignited from Hooper's lamp.
31.	70	Charles M. Ritter,	do.	..	No.	..			
31.	71	H. M. Everhart,	Miner.	..	Yes.	..			
31.	72	Fred. Everhart,	Laborer,	..	No.	..			
31.	73	Wallace Deitrich,	do.	..	No.	..			
31.	74	Frank Deitrich.	Miner.	..	Yes.	..			
31.	75	Peter Youlish,	Laborer.	..	Yes.	..			
June 3.	76	James Sullivan.	do.	16	No.	..	Stanton breaker,	Wilkes-Barre.	Ankle fractured by being caught between cars on surface.
7.	77	Thomas Lyons,	do.	53	Yes.	6	South Wilkes-Barre,	Wilkes-Barre.	Jawbone fractured and ankle injured bybeing caught between a car and door-frame.
7.	78	Thomas Meinyer,	Loader.	15	No.	..	Baltimore No. 2. breaker,	Wilkes-Barre twp.,	Thigh broken and other leg injured by being caught between car and platform.
10.	79	Mich. Caplow,	Miner,	36	Yes.	2	Shaft No. 1, Forge seam.	Nanticoke.	Head, face and hands severely burned by an explosion of gas.
10.	80	Richard Hicks.	do.	44	Yes.	9	Lance No. II,	Plymouth.	Face and back of hands burned by an explosion of gas in a cross-heading.
11.	81	John Berrigan,	do.	49	Yes.	7	Stanton,	Wilkes-Barre.	Face, hands and head burned by an explosion of gas.
14.	82	Elmer Welch.	Laborer.	22	No.	..	West End.	Mocanaqua.	Collar bone fractured and body bruised; took the wrong side and was crushed between car and rib.
15.	83	Patrick O'Malley,	Miner,	35	Yes.	3	Shaft No. 4.	Edwardsdale,	Face and hands slightly burned by an explosion of gas in a cross-cut.
15.	84	Clarence Duncan.	Laborer,	26	No.	..	Franklin,	Wilkes-Barre,	Knee severely bruised by coal falling and rolling upon him.

	16,	85	William Richards,	Footman,	25	No,		Wanamie No. 19,	Wanamie,	Right hand crushed by being caught between bumpers of cars.
	16,	86	William H. Jones,	Driver,	16	No,		Shaft No. 1, Lee vein,	Nanticoke,	Leg broken by being struck by a chain pulled by a mule.
	17,	87	Patrick Brown,	Miner,	29	Yes,	2	Shaft No. 1, Lee vein,	Nanticoke,	Face severely injured and eye destroyed by a premature blast.
	25,	88	Andrew Dahlgreen,	Laborer,	32	Yes,	1	Dorrance,	Wilkes-Barre,	Leg crushed by a fall of coal; foot had to be amputated.
	28,	89	Thomas J. Conlon,	Headman,	26	Yes,	2	Woodward breaker,	Plymouth township,	Pushed a car into the breaker tower and fell down with it; was severely injured.
	29,	90	Timothy McCarthy,	Miner,	53			Nottingham,	Plymouth,	Cut and bruised on back by a premature blast.
July	2,	91	David P. Thomas,	Fire-boss,	47	Yes,	4	Shaft No. 1, Lee vein,	Nanticoke,	Leg fractured by being crushed between a truck and prop.
	5,	92	Patrick McHugh,	Miner,	26	Yes,	3	Avondale,	Plymouth township,	Face and back burned by an explosion of gas.
	6,	93	Thomas Dane,	Driver,	18	No,		Baltimore No. 3 shaft,	Wilkes-Barre twp.,	Compound fracture of arm; fell under moving car while unhitching the mule.
	8,	94	Frank Cotsmink,	do.	17	No,		Nottingham,	Plymouth,	Injured severely; he walked into the cage-pit and the cage descended on him.
	8,	95	Frank Ottisman,	Miner,	34	Yes,	3	Wanamie No. 19,	Wanamie,	Both legs painfully bruised by a fall of top rock.
	8,	96	John Herminski,	do.	43	No,		Shaft No. 2,	Nanticoke,	Leg near ankle fractured by a fall of top rock.
	13,	97	John Baird,	do.	55	Yes,	5	Hillman vein,	Wilkes-Barre,	Painfully burned by an explosion of gas; Frank Ferguson was fatally burned at the same time.
	13,	98	John Nevish,	Laborer,	27	No,		Empire,	Wilkes-Barre,	Severely injured about the hips by being caught between the cage and side of shaft.
	15,	99	John Ormonofski,	Miner,	38	Yes,	3	Slope No 2,	Nanticoke,	Leg fractured by a fall of coal.
	15,	100	John H. Jones,	do.	32	Yes,		Warrior Run,	Warrior Run,	Face and hands slightly burned by an explosion of gas.
	18,	101	Joseph Digoliski,	Laborer,	27	No,		Shaft No. 4,	Edwardsdale,	Face, arms and hands burned by an explosion of gas.
	25,	102	Joseph Sershon,	Miner,	30	Yes,		Wanamie shaft, No. 18,	Wanamie,	Both were burned on faces and hands by an explosion of gas; went into forbidden places and unexpectedly found gas and exploded it.
	25,	103	John Gullitt,	Laborer,	25	No,				
	27,	104	David Protheroe,	do.	25	No,		Parrish,	Plymouth,	Face and hands burned by an explosion of gas; James Middleton and George Rowlands were very slightly burned the same time.
	28,	105	Martin Shea,	Miner,		Yes,		Shaft No. 5,	South Wilkes Barre,	Face and hands burned by an explosion of gas.
Aug.	1	106	Steve Martinko,	Laborer,	37	Yes,	3	Shaft No. 1,	Nanticoke,	Knee painfully squeezed between cars.
	1,	107	Joseph Kriscavitch,	Miner,	36	Yes,	1	Shaft No. 1, Lee vein,	Nanticoke,	Severely bruised and cut about back and side by a fall of coal.
	2,	108	Michael Swedrofski,	Driver,	18	No,		Slope No. 4,	Nanticoke,	Leg fractured by falling under cars.
	4,	109	Benjamin T. Evans,	Machinist,	42	Yes,	4	Dodson breaker,	Plymouth,	Skull fractured by falling down a chute in the breaker.
	6,	110	Hugh Casserty,	Driver,	21	No,		Gaylord,	Plymouth,	Cut on head and one rib fractured by a runaway car on plane.
	6,	111	James Boyle,	Miner,	35	Yes,		Shaft No. 5,	South Wilkes-Barre,	Compound fracture of leg, caused by a collar falling on him.
	8,	112	Ebenezer Lewis,	do.	35	No,		Gaylord,	Plymouth,	Struck on hip and seriously hurt by coal from a blast.

TABLE NO. 5.—*Continued.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—Luzerne County.	Nature and Cause of Accident.
Aug. 8.	113	Martin Koch.	Laborer.	26	No.	. .	Shaft No. 1, Forge vein, .	Nanticoke.	Severe wound on forehead; he tried to board a cage starting up the shaft and was caught between it and side of shaft.
10.	114	Mike Phillipchock. . . .	do.	37	. . . .	. .	Woodward, ...	Plymouth township,	Foot crushed under locomotive, necessitating amputation.
12.	115	John D. Gallagher. . . .	Miner.	30	No.	. .	Gaylord, ...	Plymouth.	Face and hands bruised and cut by a premature blast.
16.	116	William Kriscavage. . . .	Laborer.	28	. . . .	. .	Shaft No. 1, Lee vein, . .	Nanticoke.	Arm severely crushed by falling under cars.
17.	117	James Pearson.	Miner.	34	Yes.	. .	Hollenback.	Wilkes-Barre. . . .	Three toes crushed by a fall of slate, necessitating amputation.
18.	118	David Eynon.	Footman.	18	No.	. .	Slope N. 2.	Nanticoke, ...	Severely injured by runaway cars at foot of slope; John D. Morgan was killed at the same time.
20.	119	Valentine Dziathofski. . .	Laborer.	26	No.	. .	Shaft No. 1, Lee vein. . .	Nanticoke.	Thigh fractured by a fall of slate.
25.	120	John Gurstorski.	Miner.	28	No.	. .	Slope No. 6.	Glen Lyon.	Body painfully bruised by coal falling and rolling upon him.
25.	121	Gilbert Young.	do.	30	Yes.	2	Empire, ...	Wilkes-Barre. . . .	Face and hands burned by an explosion of gas in a cross-cut; Morris Owen was slightly burned on hands and neck at the same time.
Sept. 6.	122	John Lynch.	do.	42	Yes.	3	Alden.	Alden, ...	Face and chest painfully bruised by a premature blast.
7.	123	John McAleese.	Laborer.	50	Yes.	. .	Nottingham.	Plymouth.	Compound fracture of both legs; struck by the rope on slope.
8.	124	John D. Jones.	Runner.	17	No.	. .	Shaft No. 1, Lee vein. . .	Nanticoke.	Thigh fractured; he fell under a car while riding in front running down a breast.
9.	125	Felix Washlafski.	Driver.	17	No.	. .	Shaft No. 1, Lee vein. . .	Nanticoke.	Thigh broken by being crushed between a car and mule.
14.	126	Mike Kluga.	Miner.	39	Yes.	5	Shaft No. 1, Lee vein. . .	Nanticoke, ...	Face and hands slightly burned by igniting a small quantity of gas.
19.	127	Anthony Flynn.	do.	24	No.	. .	Baltimore shaft No. 3. . .	Wilkes-Barre twp.,	Severely burned by powder igniting when charging a hole.
23.	128	John Stanklwick.	Laborer.	28	Yes.	1	Stanton.	Wilkes-Barre. . . .	Painfully burned by an explosion of gas; Frank Shillapock was fatally burned at the same time.
23.	129	William Branch.	Miner.	34	Yes.	4	Conyngham.	Wilkes-Barre. . . .	Leg broken by a car while helping to replace it on the track.
24.	130	John Hozek.	Door-tender, . .	17	No.	. .	Shaft No. 6, ...	Glen Lyon.	Leg and collar bone fractured by being crushed between a car and mule.

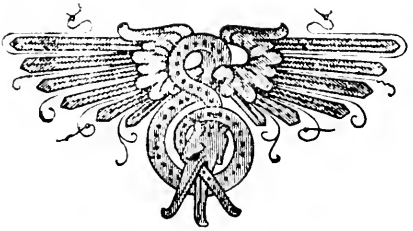
	27.	131	Larry Reets,	Laborer,	29	Yes.	1	Breaker No. 16.	Plymouth,	Hip painfully hurt by being struck by a dirt car.
	27.	132	John Johnson,	Carpenter,	25	No.		Reynolds No. 16,	Plymouth,	Leg broken by being crushed between a car and door.
	29.	133	John Tapp,	Miner,	36	Yes.	7	Shaft No. 1, Lee vein.	Nanticoke.	Head and arms slightly burned by an explosion of gas in an old breast.
Oct.	1.	134	John Wentzel,	do.	28	Yes.	2	Shaft No. 1, Forge vein.	Nanticoke.	Face and hands slightly burned by an explosion of gas.
	3.	135	Morgan Bevan,	Oiler,	17	No.		Woodward breaker,	Plymouth township.	Wrist dislocated and arm severely bruised by being crushed between cars while coupling.
	3.	136	Jonathan Nelson,	Miner,	22	No.		Lance No. 11.	Plymouth,	Burned on neck, chest and arm by an explosion of gas.
	4.	137	Thomas Bonetzky,	Slate-picker,	15	No.		Lance No. 11 breaker.	Plymouth,	Leg broken while playing about the cars during noon hour.
	4.	138	William Hamilton,	do.	45	Yes.	8	Lance No. 11.	Plymouth.	Both painfully burned by an explosion of gas, igniting in some mysterious manner shortly after firing a blast; Fred Carver was fatally burned at the same time.
	5.	139	Louis Dedoski,	Laborer,	26	Yes.	1			
	5.	140	Thomas Jones,	Driver,	16	No.		Shaft No. 4.	Edwardsdale,	Leg fractured; on striking headblock the hind end of car swung over and struck him.
	7.	141	Andrew Guzarski,	Laborer outside,	24	No.		Woodward breaker,	Plymouth township.	Two toes crushed by a car on culm dump.
	7.	142	Martin Phillips,	Laborer,	36			Nottingham,	Plymouth,	Leg and arm fractured by a fall of coal.
	8.	143	Thomas D. Morgan,	Miner,	29	Yes.	1	Shaft No. 2.	Nanticoke.	Painfully bruised by a fall of coal; the laborer, Frank Gazitsky, was killed by the same fall.
	8.	144	Anthony Coloski,	Laborer,	31	No.		Nottingham,	Plymouth,	Leg fractured by a fall of coal.
	10.	145	William Coyle,	do.	35	Yes.	5	Stanton,	Wilkes-Barre,	Arm fractured by a fall of coal.
	11.	146	John F. Jones,	Miner,	50	Yes.	6	Woodward,	Plymouth township.	Both were slightly burned on the face and hands; they went into a cross cut blocked up with coal and fired a small body of gas.
	11.	147	James Hadden,	Laborer,	29	Yes.	2			
	15.	148	Joseph Ander,	Miner,	27	No.		Hillman vein,	Wilkes-Barre,	Severely burned by an explosion of gas.
	22.	149	Adam Vetbal,	Laborer,	22	No.		Shaft No. 9,	Sugar Notch.	Foot severely crushed by a fall of fireclay in a breast.
	26.	150	Anthony Orbage,	do.	26	No.		Lance No. 11.	Plymouth.	Hip dislocated by a fall of coal.
	26.	151	William Stout,	do.	27	Yes.		West End,	Mocanaqua.	Back severely injured by a fall of coal
	27.	152	Andrew Lenahan,	Co. laborer,	22	No.		Shaft No. 9.	Sugar Notch.	Small bone of leg fractured by falling across a rail.
	28.	153	John Granahan,	Runner,	32	No.		Shaft No. 3.	Plymouth,	Leg fractured by being struck by coal flying from a blast.
	28.	154	August Pudell,	Miner,	33	Yes.	4	Slope No. 2.	Nanticoke.	Leg broken by a fall of coal.
Nov.	2.	155	Oliver Healy,	do.	56	Yes.	8	Baltimore shaft No. 3.	Wilkes-Barre twp.	Healy's back was painfully bruised and Miller's shoulder dislocated by a fall of bony coal from roof.
	2.	156	William Miller,	Laborer,	24	No.				
	9.	157	John Witheridge,	Mason,	54	Yes.	7	Shaft No. 2.	Nanticoke.	Both were injured by an explosion of gas; Witheridge had collar bone broken and Davies was painfully burned. Merian Rubinski was killed and Wm. A. Hughes was fatally injured by the same explosion. John Furman was also slightly burned.
	9.	158	Gomer R. Davies,	Bratticeman,	22	Yes.	1			
	10.	159	Jacob Basila,	Laborer,	32	Yes.		Shaft No. 4.	Plymouth,	Small bone of leg fractured by a fall of rock.
	19.	160	William Griffith,	Runner,	19	No.		Shaft No. 6,	Glen Lyon,	Arm and side bruised by being crushed against the rib by lagging on a car.
	21.	161	John S. Thomas,	Miner,	47	Yes.	6	Parrish,	Plymouth.	Painfully injured by a fall of coal which he was pulling down.
	.	162	Felix Kerlan,	Driver,	17	No.		Hollenback,	Wilkes-Barre,	Knee painfully injured; caught between cars.

TABLE NO. 5.—*Continued.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—Luzerne County.	Nature and Cause of Accident.
Nov. 25.	163	Barney House,	Driver,	18	No.	..	Baltimore shaft No. 3,	Wilkes-Barre,	Arm run over by a car, necessitating amputation.
25.	164	John Hempski,	do.	20	No.	..	Slope No. 6,	Glen Lyon,	Two fingers cut off; caught between spragg and wheel.
26.	165	Edward Handley,	Driver-boss,	26	Yes.	1	Shaft No. 1,	Edwardsdale,	Slightly injured by a fall of roof.
26.	166	John Guska,	Miner,	33	Yes.	3	Reynolds No. 16,	Plymouth,	Painfully hurt by a fall of coal crushing him against the end of a car.
Dec. 1.	167	Thomas Temperly,	Door-tender,	15	No.	..	Dodson,	do.	Kicked on his face by a mule; nose broken.
3.	168	Joseph Brushak,	Co. laborer,	44	No.	..	Slope No. 6,	Glen Lyon,	Small bone of leg fractured by being caught between cars.
5.	169	Dominick Gallagher,	Miner,	35	Yes.	2	Jersey No. 8,	Ashley,	Went to face of breast after blasting and a fall of coal broke his arm.
6.	170	Richard G. Williams,	Driver,	18	No.	..	Lance No. 11,	Plymouth,	Skull cracked by a kick from a mule.
7.	171	George Reymiller,	Driver-boss,	31	Yes.	3	Parrish,	do.	Fell off a car on the slope and his hand was severely lacerated by the rope.
8.	172	Patrick O'Hara,	Driver,	20	No.	..	Stanton,	Wilkes-Barre,	Teeth knocked out and tongue cut by a kick from a mule.
10.	173	William McGear,	do.	18	No.	..	Avondale,	Plymouth township,	Thigh dislocated; fell under a car while trying to unhitch the mule.
12.	174	John Rice,	Laborer,	18	No.	..	Empire,	Wilkes-Barre,	Leg severely injured by a blast bursting through the pillar; he went around to notify others and stood in the way himself.
14.	175	Thomas Conyngham,	Plane man,	47	No.	..	South Wilkes-Barre,	do.	Leg broken; struck by a car at foot of breaker-plane.
19.	176	Mike Dougher,	Footman,	17	No.	..	Dorrance breaker,	do.	Painfully injured; the weight of loaded car above pulled the empty one upon him below.
22.	177	John Richmond,	Rockman,	35	Yes.	2	Jersey No. 8,	Ashley,	Face, hands and back burned by an explosion of gas. Two others were slightly burned at the same time.
23.	178	Andrew Scladarmy,	Laborer,	31	Yes.	..	Shaft No. 2,	Plymouth,	Crushed between a car and rib; hips painfully injured.
30.	179	Martin Flynes,	Slate-picker,	16	No.	..	Franklin,	Wilkes-Barre,	Going unnecessarily near a revolving shaft, his clothing was caught, causing him to be drawn to the shaft. He was painfully bruised and cut on the thigh.
31.	180	John Price,	Miner,	32	Yes.	4	Warrior Run,	Warrior Run,	Bruised about hips and back by a fall of coal.

Recapitulation of Non-fatal Accidents.

OCCUPATION.	Number.	Per cent.	Nationality.	Number.	Per cent.	Causes of accidents.	Number.	Per cent.
Miners,	77	42.77	American,	24	13.33	By explosions of CH gas,	43	23.89
Laborers,	49	27.23	Welsh,	32	17.77	By falls of roof and coal,	51	28.33
Drivers and runners,	27	15	Irish,	36	20	By falling down shafts,		
Bratticemen,	5	2.77	English,	19	10.55	By mine-cars underground,	32	17.78
Door-tenders,	5	2.77	Polish,	47	26.11	By explosions of powder and blasts,	16	8.89
Masons,	1	.56	Slav,	11	6.11	By miscellaneous causes underground,	18	10
Headmen and footmen,	5	2.77	German,	7	3.87	By miscellaneous causes on surface,	20	11.11
Fire bosses,	2	1.13	Swede,	2	1.13			
Slate pickers,	4	2.23	Scotch,	2	1.13			
Outside laborers,	5	2.77						
Totals,	180	100	Totals,	180	100	Totals,	180	100



FIFTH ANTHRACITE DISTRICT.

(CARBON COUNTY AND THAT PART OF LUZERNE LYING SOUTH OF THE WYOMING COAL FIELDS.)

OFFICE OF INSPECTOR OF COAL MINES,
HAZLETON, PA.

HON. THOMAS J. STEWART, *Secretary of Internal Affairs*:

SIR: I have the honor of herewith presenting my annual report as Inspector of coal mines for the Fifth district of the anthracite coal fields for the year ending December 31, 1892.

The production of coal for the year was 5,842,724.19 tons, being an increase of 38,756.12 tons over that of 1891, and the largest output for any year. The number of lives lost in the production of this quantity of coal was 48, leaving 19 widows and 37 orphans to mourn the loss of their husbands and fathers. This is a decrease in the number of fatal mine accidents of five from last year, of six in the number of widows, and of twenty-seven in the number of orphans in comparison with 1891. The report contains, besides the usual tables, a report of some improvements made and other useful information.

Owing to unnecessary delay on the part of the operators in transmitting their annual reports to this office, the report is not as comprehensive as it otherwise would have been.

Embodied in table IV will be found the fatalities of the strippings, six in number, leaving four widows and four orphans, also the three fatal accidents of the year at the Jeddo Tunnel by which one widow and one orphan were left to mourn.

The number of non-fatal accidents during this year was 110, being a decrease of five from the number of like accidents in the previous year. By reference to the tables it will be seen that one life was lost for every 121,725 tons of coal mined, that some one suffered a non-fatal accident for every 53,116 tons of coal mined, and a fatality or non-fatality for each 36,979 tons of coal mined.

The tables also show that there was a life lost for each 339.1 persons employed and one person injured in every 148 employed, and one either killed or injured in every 103 employed.

Yours very respectfully,

JOHN M. LEWIS.

TOTAL QUANTITY OF COAL MINED DURING THE YEAR.

A. Pardee & Co.,	536,730.00
Coxe Brothers & Co.,	1,188,751.11
Lehigh Coal and Navigation Company,	733,953.16
G. B. Markle & Co.,	364,250.12
Linderman & Skeer,	435,945.00
Upper Lehigh Coal Company,	358,203.10
J. C. Haydon & Co.,	296,938.13
Pardee Brothers & Co.,	356,185.18
Calvin Pardee & Co.,	141,388.02
Pardee Sons & Co.,	188,944.12
A. S. Van Wickle,	328,086.00
C. M. Dodson & Co.,	219,517.00
Lehigh Valley Coal Company,	119,978.03
M. S. Kemmerer & Co.,	176,029.13
Lehigh and Wilkes-Barre Coal Company,	142,998.01
Wm. T. Carter & Co.,	115,230.00
John S. Wentz & Co.,	91,000.05
Evans Mining Company,	48,590,03
Total tonnage,	5,842,724.19

NUMBER OF FATAL ACCIDENTS AND TONS OF COAL PRODUCED PER LIFE LOST.

NAMES OF THE OPERATORS.	Number of lives lost.	Tons of coal produced per life lost.
A. Pardee & Co.,	5	107,326
Coxe Brothers & Co.,	4	297,188
Lehigh Coal and Navigation Company,	1	733,953
G. B. Markle & Co.,	2	182,125
Linderman & Skeer,	6	72,657
Upper Lehigh Coal Company,	5	71,641
J. C. Haydon & Co.,	3	98,979
Pardee Brothers & Co.,	2	178,093
Calvin Pardee & Co.,	2	70,694
Pardee Sons & Co.,	1	188,944
A. S. Van Wickle,	8	41,011
C. M. Dodson & Co.,	1	219,517
Lehigh Valley Coal Company,	2	59,989
M. S. Kemmerer & Co.,	2	88,015
Lehigh and Wilkes-Barre Coal Company,	2	71,499
Wm. T. Carter & Co.,	None.	
John S. Wentz & Co.,	1	91,000
Evans Mining Company,	1	48,590
Total fatalities and average for all,	48	121,725

NUMBER OF NON-FATAL ACCIDENTS AND TONS OF COAL PRODUCED PER PERSON INJURED.

NAMES OF THE OPERATORS.	Number of persons injured.	Tons of coal produced per persons injured.
A. Pardee & Co.,	21	25,559
Coxe Brothers & Co.,	8	148,594
Lehigh Coal and Navigation Company,	None.	. . .
G. B. Markle & Co.,	7	52,036
Linderman & Skeer,	14	31,139
Upper Lehigh Coal Company,	3	119,401
J. C. Haydon & Co.,	10	29,694
Pardee Brothers & Co.,	8	49,023
Calvin Pardee & Co.,	1	141,388
Pardee Sons & Co.,	7	26,992
A. S. Van Wickle,	15	21,872
C. M. Dodson & Co.,	3	73,172
Lehigh Valley Coal Company,	2	59,989
M. S. Kemmerer & Co.,	4	44,007
Lehigh and Wilkes-Barre Coal Company,	4	35,749
Wm. T. Carter & Co.,	None.	. . .
John S. Wentz & Co.,	1	91,000
Evans Mining Company,	2	24,295
Total non-fatalities and average for all,	110	53,116

NUMBER OF FATAL AND NON-FATAL ACCIDENTS AND TONS OF COAL PRODUCED PER PERSON KILLED OR INJURED.

NAMES OF THE OPERATORS.	Number of persons killed or injured.	Tons of coal produced per person killed or injured.
A. Pardee & Co.,	26	20,643
Coxe Brothers & Co.,	12	99,062
Lehigh Coal and Navigation Company,	1	733,953
G. B. Markle & Co.,	9	40,472
Linderman & Skeer,	20	21,797
Upper Lehigh Coal Company,	8	44,775
J. C. Haydon & Co.,	13	22,841
Pardee Brothers & Co.,	10	35,618
Calvin Pardee & Co.,	3	47,129
Pardee Sons & Co.,	8	23,618
A. S. Van Wickle,	23	14,265
C. M. Dodson & Co.,	4	54,879
Lehigh Valley Coal Company,	4	29,994
M. S. Kemmerer & Co.,	6	29,338
Lehigh and Wilkes-Barre Coal Company,	6	23,833
Wm. T. Carter & Co.,	None.	. . .
John S. Wentz & Co.,	2	45,500
Evans Mining Company,	3	16,197
Total fatalities and non-fatalities and average for all,	158	36,979

COMPARATIVE STATEMENT *showing the number of tons of coal produced per fatality, number of persons employed per life lost, and number of fatalities per thousand employes for the past ten years.*

YEARS.	Production of coal in tons for each year.	Number of fatal accidents.	Tons of coal produced per fatal accident.	Number of persons employed.	Number employed per life lost.	Number of deaths per thousand persons employed.
1883,	5,666,767	38	149,125	13,598	357.84	2,794
1884,	5,274,227	40	131,885	14,299	357.47	2,797
1885,	5,535,544	42	131,798	14,224	338.66	2,952
1886,	5,333,518	35	152,386	14,140	404	2,475
1887,	3,961,594	15	264,106	14,096	939.73	1,064
1888,	4,892,514	32	152,891	14,448	451.50	2,215
1889,	5,655,196	46	122,939	14,686	319.26	3,200
1890,	5,776,699	52	111,090	14,421	277.33	3,606
1891,	5,803,964	53	109,509	14,961	282.28	3,548
1892,	5,842,721	48	121,725	16,277	339.19	2,949
Totals,	53,742,744	401	134,022	145,150	361.97	2,763

TABLE OF COMPARISON *showing number and different causes of fatal accidents in the Fifth district for the past ten years.*

CAUSES OF ACCIDENTS.	YEARS.										
	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	Totals.
By water from old workings,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	9	. . .	9
Asphyxiated by gases,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	6	. . .	6
By explosions of gas,	. . .	. . .	1	1	1	. . .	1	1	. . .	. . .	
By falls of coal roof and sides,	18	10	19	13	6	14	22	19	16	25	162
By cars inside and on surface,	11	17	8	5	3	6	11	19	6	15	101
By blasts and explosions of powder,	1	3	3	2	2	4	4	1	4	2	26
By machinery inside and on surface,	2	2	3	1	1	2	. . .	7	5	3	26
By boiler explosions,	. . .	. . .	3	1	1	. . .	4	. . .	1	. . .	10
By miscellaneous causes inside and on surface,	6	8	5	12	1	6	4	5	6	3	56
Totals,	38	40	42	35	15	32	46	52	53	48	401

CLASSIFICATION OF FATAL AND NON-FATAL ACCIDENTS.

CAUSES OF ACCIDENTS.	Killed.	Injured.	Totals.
By falls of coal roof and sides,	25	29	54
By mine cars,	7	14	21
By cars on surface,	8	18	26
By explosions of C. H. gas,	.....	6	6
By blasts and explosions of powder,	2	7	9
By machinery inside and on the surface,	3	4	7
By falls of coal and clay on strippings,	2	2	4
By falling down manways,	.....	1	1
By miscellaneous causes inside,	.....	14	14
By miscellaneous causes on the surface,	1	15	16
Total from all causes,	48	110	158

NATIONALIY OF PERSONS FATALLY AND NON-FATALLY INJURED.

NATURE OF ACCIDENT.	Hungarian.	Polish.	American.	Irish.	English.	Italian.	Welsh.	Austrian.	German.	Totals.
Fatal accidents,	15	8	8	5	4	3	2	2	1	48
Non-fatal accidents,	28	12	22	16	2	14	3	4	9	110
Totals,	43	20	30	21	6	17	5	6	10	158

COLLIERY IMPROVEMENTS MADE DURING THE YEAR 1892 IN THE FIFTH DISTRICT.

A. Pardee & Co.

Cranberry.—At this colliery the breaker has been very much improved by an addition to the building and the additional machinery placed therein, giving greater facility to clean and size the increasing output of the mines.

G. B. Markle & Co.

Highland No. 5.—This new colliery was completed and put in operation during the year. It consists of a slope 7′×16′×750′ long, and from the foot of slope a tunnel 7′×16′×336′ long. A breaker of one thousand tons daily capacity has been constructed, also hoisting engine house, engines, boilers, boiler house, tank, reservoir, fan, conveyors, water, steam and column pipes, pumps, inside pump house, blacksmith and carpenter shops, powder house and stable, also two blocks of double dwelling houses.

Highland No. 3.—At Highland a new fan has been put in operation, and was greatly appreciated as an improvement by the men employed.

The fan is ten feet in diameter and engine is 6″×12″ cylinder. The size of fan blade is 3′×2′×6″. Diameter of opening to fan is 4′ 11″; area of inlet, 70 square feet; area of outlet, 25 square feet.

EXAMINATION OF APPLICANTS FOR CERTIFICATES OF QUALIFICATION AS MINE FOREMEN.

The examination of applicants for certificates of qualification was held this year in the Pine street public school building at Hazleton, the use of which was granted the board of examiners by the board of school controllers of the city. The board consisted of J. M. Lewis, Inspector; Hon. Eckley B. Coxe, Drifton, coal operator; John W. Scott, of Hazleton, and Michael Mulligan, of Upper Lehigh, miners.

The following named persons were recommended for certificates of qualification by the board to the Secretary of Internal Affairs:

John C. Somers,	Harwood.
Morgan Jennings,	Nesquehoning.
John S. Ronemus,	Nesquehoning.
Morgan O. Morgan,	Nesquehoning.
Daniel J. Kennedy,	Drifton.
James A. O'Donnell,	Drifton.
Hon. D. M. Evans,	Stockton.
James Fitzgerald,	Beaver Meadow.
Alfred Griffiths,	Beaver Brook.
William F. Hamer,	Jeanesville.
Evan T. Jones,	Audenried.

The board also recommended two holders of certificates of qualification under the law of 1885 for certificates under the new law, and also recommended one person for assistant mine foreman's certificate, to allow him to act as a fire-boss under the new law.

REMARKS ON FATAL ACCIDENTS WHICH OCCURRED DURING YEAR 1892.

In reviewing these sad occurrences I shall endeavor to give the facts as they were given by eyewitnesses of the accidents, and will use the numbers of accidents as given in table No. 4.

No. 3. Richard R. Griffiths, Welsh miner, fifty-five years of age, was instantly killed by a fall of roof rock while robbing pillars in No. 4 slope of Upper Lehigh. This man had been chosen for this work on account of his experience and judgment, and was fully aware of the dangers attending such work. The place began to "squeeze" while his two laborers were loading the car, and he warned them and they ran out down the road while he either tried to run the car out, or for safety was following along the solid pillar and so delayed to get out, for he was buried under tons of rock from under which his lifeless body was taken after many hours of hard labor by his companions in toil. This accident occurred on the 2d of February, and a widow and one daughter were left to mourn his loss.

No. 5. John Sussevitch, a Polish miner, forty-one years of age, married, two children, was fatally injured at East Sugar Loaf slope No. 5 by a piece of clod under which he was engaged in shoveling coal falling on him and crushing him so badly that he died at the hospital in two hours after. He must have been aware of the clod being bad, because his head would almost touch it while he was working under it. No doubt he considered that it was only such a short distance above him that he was not afraid of its falling.

No. 6. William H. Steventon, an English miner thirty years of age, wife and five little ones, was injured at Colliery No. 1 at Nesquehoning, belonging to Lehigh Coal and Navigation Company. This man and his brother were engaged in opening a new breast, and as the coal had pinched out they were blasting down some rock, and while barring, after some holes had been fired, a fall came and his leg was broken, and after being taken home and the bone set he seemed to be doing well, until June 25, just ten days after the occurrence, when some foreign matter was carried from the injured member to the heart, and he died very suddenly.

No. 8. Andrew Martin, Hungarian, laborer, 36 years of age, wife and one child, was so seriously injured by a fall of top coal in a breast in No. 7 slope, Upper Lehigh, on June 24, that he died at the hospital on the same day. He was loading a car and the miner was engaged in drilling a hole in the top coal, and had warned Martin to stay out from under the coal but he got around under it and it fell on him, fracturing his leg and injuring him so severely that with the loss of blood and the shock to his nervous system he died soon after.

No. 10. Michael Martin, Hungarian, stripping miner, 30 years of age and single, was fatally burned by black powder which he in some unknown way exploded as he needed no light to procure the powder, and he died without explaining how the explosion was caused; but I have been led to believe that he went to the powder with a lighted pipe or used fire about the place in some manner. Certainly no one of us can be too careful how we handle explosives of any kind. This accident occurred July 8.

Nos. 12 and 13. Robert Walton, English, miner, 38 years of age, wife and one child, with John Cussinski, Polish, laborer, were buried under a fall of roof rock about noon of August 3, while trying to run their car out from the falling place where they were robbing pollars. Cusinski was instantly killed but Walton was alive and his moans were the means of directing a party to rescue him, which was accomplished after $13\frac{3}{4}$ hours of very hard work, and then the poor fellow died 2 hours after at his home. The body of Cusinski was recovered just 24 hours after the fall occurred.

No. 20. Joseph Vidz, Austrian, miner, 52 years old, wife and two children, was fatally injured by dividing slate and top coal under which he

went, while he told his nephew, who was laboring for him, to bar it down and when his laborer told him it was coming and he had better come out from under it he said he was all right yet. Both legs were broken; he died 33 hours after the accident, on August 22.

No. 27. Stanley Roman, miner, Polish, 24 years of age and single, was instantly killed by rush of coal from the face of a breast, September 20. Roman and his partner had been told to timber their cross heading and fix up their manway before firing any shot, but when they got into the breast, instead of obeying the orders, they drilled and fired a hole and while barring afterwards the face rushed, and Roman was caught and killed. His body was recovered after 36 hours' hard labor by the men. This accident took place at East Sugar Loaf No. 6.

These I deem sufficient to mention here, but the calm reasoner who will examine table No. 4 will find that many of these accidents might have been averted by a little more care on the part of the victims themselves, and a little more strict discipline on the part of those in charge of the work.

TABLE I.—*Showing Location of Collieries in the Fifth Anthracite District.*

NAME OF COLLIERY.	Name of Operator.	Location County.	Name of Superintendent.	Postoffice Address.
Hazleton Mine	A. Pardee & Co.	Hazleton, Luzerne	Frank Pardee	Hazleton, Luzerne county, Pa.
Laurel Hill	do. do.	do. do.	do.	do. do.
Hazleton No. 3	do. do.	do. do.	do.	do. do.
Hazleton No. 6	do. do.	do. do.	do.	do. do.
South Sugar Loaf	do. do.	do. do.	do.	do. do.
Cranberry	do. do.	do. do.	do.	do. do.
Drifton No 1	Coxe Brothers & Co.	Drifton, Luzerne	Hon. Eckley B. Coxe	Drifton, Luzerne county, Pa.
Drifton No. 2	do. do.	do. do.	do. do.	do. do.
Eckley No 5	do. do.	Eckley, do.	do. do.	do. do.
Eckley No. 10	do. do.	do. do.	do. do.	do. do.
Stockton	do. do.	Stockton, do.	do. do.	do. do.
Beaver Meadow	do. do.	Beaver Meadow, Carbon	do. do.	do. do.
Tomhicken	do. do.	Tomhicken, Luzerne	do. do.	do. do.
Derringer	do. do.	Derringer, Luzerne	do. do.	do. do.
Gowen	do. do.	Gowen, Luzerne	do. do.	do. do.
Colliery No. 1	Lehigh Coal and Navigation Company.	Nesquehoning, Carbon	W. D. Zehner	Lansford, Carbon county, Pa.
Colliery No. 4	do. do. do.	Lansford, Carbon	do.	do. do.
Colliery No. 5	do. do. do.	do. do.	do.	do. do.
Colliery No. 6	do. do. do.	do. do.	do.	do do
Colliery No. 9	do. do. do.	do. do.	do.	do. do.
Jeddo No. 3	G. B. Markle & Co.	Jeddo, Luzerne	John Markle	Jeddo, Luzerne county, Pa.
Jeddo No. 4	do. do.	do. do.	do.	do. do.
Highland No. 1	do. do.	Highland, Luzerne	do.	do. do.
Highland No. 2	do. do.	do. do.	do.	do. do.
Highland No. 5	do. do.	Jeddo, Luzerne	do.	do. do.
East Sugar Loaf No. 1	Linderman & Skeer.	Stockton, Luzerne	James E. Roderick	Stockton, Luzerne county, Pa.
East Sugar Loaf No. 2	do. do.	do. do.	do. do.	do. do.
East Sugar Loaf No. 6	do. do.	do. do.	do. do.	do. do.
East Sugar Loaf Nos. 4 and 5	do. do.	do. do.	do. do.	do. do.
Humboldt colliery	do. do.	Humboldt, Luzerne	A. C. Leisenring	Upper Lehigh, Luzerne county, Pa.
Upper Lehigh colliery	Upper Lehigh Coal Company	Upper Lehigh, Luzerne	J. C. Haydon, general superintendent.	Jeansville, Luzerne county, Pa.
Spring Mountain No. 1	J. C. Haydon & Co.	Jeanesville, Carbon		
Spring Mountain No. 4	do. do.	Jeanesville, Luzerne	David Macfarlane, acting superintendent.	do. do.
Lattimer No. 1	Pardee Brothers & Co.	Lattimer, Luzerne	Calvin Pardee, general superintendent.	Hazleton, Luzerne county, Pa.
Lattimer No. 3	do. do.	do. do.	A. W. Drake, assistant superintendent.	Lattimer, Luzerne county, Pa.
Hollywood colliery	Calvin Pardee & Co.	Hollywood, Luzerne	Calvin Pardee, general superintendent.	Hazleton, Luzerne county, Pa.
			A. W. Drake, assistant superintendent.	Lattimer, Luzerne county, Pa.

TABLE I.— *Continued.*

NAME OF COLLIERY	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Harwood colliery,	Pardee Sons & Co.,	Harwood, Luzerne,	Calvin Pardee, general superintendent.	Hazleton, Luzerne county, Pa.
			A. W. Drake, assistant superintendent.	Lattimer, Luzerne county, Pa.
Milnesville colliery,	A. S. Van Wickle,	Milnesville, Luzerne,	Jed I. Hollenbeck,	Milnesville, Luzerne county, Pa.
Beaver Brook colliery,	C. M. Dodson & Co.,	Beaver Brook, Luzerne,	E. L. Bullock,	Audenried, Carbon county, Pa.
Yorktown colliery,	Lehigh Valley Coal Company,	Yorktown, Carbon,	Col. D. P. Brown,	do. do.
Sandy Run,	M. S. Kemmerer & Co.,	Sandy Run, Luzerne,	Walter Leisenring,	Sandy Run, Luzerne county, Pa.
			E. H. Lawall, general superintendent.	Wilkes-Barre, Luzerne county, Pa.
Honey Brook No. 2,	Lehigh and Wilkes-Barre Coal Company,	Prescow, Carbon,	David R. Roberts, assistant superintendent.	Audenried, Luzerne county Pa.
Coleraine colliery,	Wm. T. Carter & Co,	Beaver Meadow, Carbon,	Arthur Kerbaugh,	Beaver Meadow, Carbon county, Pa.
Hazle Brook,	J. S. Wentz & Co.,	Hazle Brook, Luzerne,	George Richert,	Hazle Brook, Luzerne county, Pa.
Evans colliery,	Evans Mining Company,	Beaver Meadow, Carbon,	John D. Evans,	Beaver Meadow, Carbon county, Pa.

TABLE NO. 2.—*Giving the total number of tons of coal mined in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the Fifth Anthracite District for the year ending December 31, 1892.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number of pounds of dynamite used.
A. Pardee & Co.												
Hazleton Mine	Hazleton	157,912.13	150,112.13	185.5	577	2	6	3,079	40	64	2	
Laurel Hill	do.	83,041	75,429	196.5	301		1	1,002	41	37	1	
South Sugar Loaf	do.	54,533.03	50,893.03	181.9	179		5	1,588	29	29		
Hazleton No. 3	do.	58,225.05	53,221.05	141.8	227	1		1,102	30	25	2	
Hazleton No. 6	do.	22,931.12	21,456.12	149.3	120			552	10	20		
Cranberry	do.	160,090.07	145,590.07	196.6	483	2	9	4,094	51	68	5	
East Crystal Ridge	do.				46				17	5		
Totals		536,730	496,703	182.5	1,933	5	21	11,417	218	248	10	73,400
Coxe Brothers & Co.												
Drifton No. 1	Drifton	354,480.14	306,386.02	252	769	3	1	5,643	66	113	4	3,700
Drifton No. 2												
Eckley No. 5	Eckley	151,742.14	138,447.15	259	390			2,504	31	50	1	10,787
Eckley No. 10												
Stockton	Stockton	164,055.11	144,398.09	246	426		2	3,313	30	31	2	6,987
Beaver Meadow	Beaver Meadow	118,748.13	97,185.16	221	425		3	1,942	24	33	2	7,437
Tomhicken	Tomkicken	75,275.17	67,095.05	222	187		1	2,268	3	31	1	2,426
Derringer	Derringer	324,450.02	303,804.08	255	679	1	1	6,341	15	113	4	5,602
Gowen	Gowen											
Totals		1,188,751.11	1,057,288.15	216.2	2,876	4	8	22,011	169	371	14	36,939
Lehigh Coal and Navigation Company.												
Colliery No. 1	Nesquehoning	262,404.19	244,100.15	240.7	629	1		4,320	31	102	7	27,300
Colliery No. 4	Summit Hill	140,919.18	117,662.12	215.2	308			840	32	74		6,200
Colliery No. 5	do.	126,057.11	113,799.07	202.5	220			1,400	6	37	2	3,200
Colliery No. 6	Lansford			202.5	160			2,520	18	13	1	10,500
Colliery No. 9	do.	204,571.08	198,700.16	237.1	376			240	23	61	3	4,100
Screen Building	Hanto			300	203				26		3	
Totals		733,953.16	674,263.10	234.5	1,896	1		9,320	136	287	16	51,300

TABLE NO. 2—*Continued.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number of pounds of dynamite used.
G. B. Markle & Co.												
Jeddo No. 3.	Jeddo.	82,196.07	77,543.15	204	222	. . .	. . .	1,564	31	50	2	6,149
Jeddo No. 4.	do.	115,591.17	109,048.18	227	265	. . .	. . .	994	36	52	3	16,021
Highland No. 1.	Highland.	58,375	55,070.15	173	224	1	2	1,337	21	43	. . .	2,688
Highland No. 2.	do.	101,324.14	95,589.07	197	266	1	4	3,279	22	53	1	1,020
Highland No. 5.	Jeddo.	6,762.14	6,379.18	27	215	. . .	1	579	12	20	. . .	3,741
Totals.		364,250.12	343,632.13	202.2	1,192	2	7	7,753	122	218	6	29,619
Linderman & Skeer.												
East Sugar Loaf No. 1.				. . .	107	. . .	1	375	22		1	
East Sugar Loaf No. 2.				194	514	1	2	3,168	45		1	
East Sugar Loaf No. 6.	Stockton.	366,196	287,721	. . .	144	1	5	1,869	30	101	1	22,175
East Sugar Loaf Nos. 4 and 5.				196	340	2	4	2,913	27		1	
Humboldt colliery.	Humboldt.	69,749	53,324.07	184	179	2	2	1,268	36	28	1	1,900
Totals.		435,945	341,045.07	193.1	1,284	6	14	9,593	160	129	5	24,075
Upper Lehigh Coal Company.												
Upper Lehigh colliery.	Upper Lehigh.	358,203.10	314,488.10	265.4	635	5	3	7,459	82	126	5	3,346
J. C. Haydon & Co.												
Spring Mountain No. 1.	Jeanesville.	148,044.01	129,735.01	207.1	384	1	3	1,320	31	43	1	. . . . .
Spring Mountain No. 4.	do.	148,894.12	137,209.12	209.2	442	2	7	2,400	51	49	5	93,060
Totals.		296,938.13	266,944.13	208.5	826	3	10	3,720	82	92	6	93,060
Pardee Brothers & Co.												
Lattimer No. 1.	Lattimer.	164,932.10	140,112.10	210	529	1	3	200	34	58	4	45,700
Lattimer No. 3.	do.	191,253.08	175,923.08	220.1	564	1	5	1,740	21	40	3	55,000
Totals.		356,185.18	316,035.18	215.2	1,093	2	8	1,940	55	98	7	100,700
Calvin Pardee & Co.												
Hollywood colliery.	Hollywood.	141,388.02	120,218.02	218.7	396	2	1	2,450	29	42	1	35,400
Pardee Sons & Co.												
Harwood colliery.	Harwood.	188,944.12	150,254.12	248.5	778	1	7	6,320	53	43	1	9,950

12-12-92.

A. S. Van Wickle.												
Milnesville colliery,	Milnesville,	528,086	309,836	277.2	1,054	8	15	6,052	44	77	4	45,625
C. M. Dodson & Co.												
Beaver Brook colliery,	Beaver Brook,	219,517	194,917	226.6	479	1	3	4,141	55	38	2	659
Lehigh Valley Coal Company.												
Spring Brook colliery,	Yorktown,	119,978.03	111,466.03	207.6	362	2	2	2,820	54	32	2	50
M. S. Kemmerer & Co.												
Sandy Run,	Sandy Run,	176,029.13	165,236.10	249.4	394	2	4	3,100	34	58	3	8,200
Lehigh and Wilkes-Barre Coal Company.												
Honey Brook No. 2,		142,998.01	120,268.01	233.7	289	2	4	1,943	47	26	1	2,574
William T. Carter & Co.												
Coleraine colliery,	Beaver Meadow,	115,230	99,900	203.2	308	. . .	. . .	1,406	35	43	2	3,000
John S. Wentz & Co.												
Hazle Brook,	Hazle Brook,	91,000.05	82,771.05	198.4	298	1	1	1,642	18	19	1	2,500
Evans Mining Company.												
Evans colliery,	Beaver Meadow,	48,590.03	46,190.03	261.1	184	1	2	1,725	6	9	. . .	2,700
Grand total all collieries,		5,842,720.19	5,211,464.02	225.2	16,277	48	110	104,812	1,399	1,956	86	523,097

Recapitulation.

A. Pardee & Co.,	Hazleton,	536,734	496,703	182.5	1,933	5	21	11,417	218	248	10	73,400
Coxe Bros. & Co.,	Drifton,	1,188,551.11	1,057,288.15	246.2	2,876	4	8	22,011	169	371	14	36,939
Lehigh Coal and Navigation Company,	Lansford,	733,953.16	674,263.10	234.5	1,896	1	. . .	9,320	136	287	16	51,300
G. B. Markle & Co.,	Jeddo,	364,250.12	343,632.13	202.2	1,192	2	7	7,753	122	218	6	29,619
Linderman & Skeer,	Stockton,	435,945	341,015.07	193.1	1,284	6	14	9,593	160	129	5	24,075
Upper Lehigh Coal Company,	Upper Lehigh,	358,203.10	314,488.10	265.4	655	5	3	7,459	82	126	5	3,346
J. C. Haydon & Co.,	Jeanesville,	296,938.13	266,944.13	208.5	826	3	10	3,720	82	92	6	93,060
Pardee Bros. & Co.,	Lattimer,	356,185.12	316,035.18	215.2	1,093	2	8	1,940	55	98	7	100,700
Calvin, Pardee & Co.,	Hollywood,	141,388.02	120,218.02	218.7	396	2	1	2,450	29	42	1	35,400
Pardee Sons & Co.,	Harwood	188,944.12	150,254.12	248.5	778	1	7	6,320	53	43	1	9,950
A. S. VanWickle,	Milnesville,	528,086	309,836	277.2	1,054	8	15	6,052	44	77	4	45,625
C. M. Dodson & Co.,	Beaver Brook,	219,517	194,917	226.6	479	1	3	4,141	55	38	2	659
Lehigh Valley Coal Company,	Yorktown,	119,978.03	111,466.03	207.6	362	2	2	2,820	54	32	2	50
M. S. Kemmerer & Co.,	Sandy Run,	176,029.13	165,236.10	249.4	394	2	4	3,100	34	58	3	8,200
Lehigh and Wilkes-Barre Coal Company,	Trescow,	142,998.01	120,268.01	233.7	289	2	4	1,943	47	26	1	2,574
William T. Carter & Co.,	Beaver Meadow,	115,230	99,900	203.2	308	. . .	. . .	1,406	35	43	2	3,000
John S. Wentz & Co.,	Hazle Brook,	91,000.05	82,771.05	198.4	298	1	1	1,642	18	19	1	2,500
Evans Mining Co.,	Beaver Meadow,	48,590.03	46,190.03	261.1	184	1	2	1,725	6	9	. . .	2,700
Grand total for all companies,		5,842,724.19	5,211,460.02	225.2	16,277	48	110	104,812	1,399	1,956	86	523,097

TABLE No. 3.—*Showing the number of each class of employes at each colliery in the Fifth Anthracite District during the year 1892.*

NAMES OF COLLIERIES.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand total inside and outside.
	Inside foremen.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All other company men.	Superintendents, bookkeepers and clerks.	Total outside.	
A. Pardee & Co.															
Hazleton mine	4	123	93	25	41	3	291	1	6	24	158	98	2	286	577
Laurel Hill	2	63	30	20	14	6	135	1	2	20	24	50	2	99	301
South Sugar Loaf	1	53	20	6	6	1	87	1	2	11	56	21	1	92	179
Hazleton No. 3	2	35	36	8	10	3	124	1	2	11	72	16	1	103	227
Hazleton No. 6	1	10	24	3	3	2	47	1	2	5	47	17	1	73	120
Cranberry	5	69	88	37	45	8	250	1	2	5	98	102	2	233	483
East Crystal Ridge	1	9	9	2	4	. . .	25	. . .	1	8	. . .	12	. . .	21	46
Totals	16	362	330	103	125	23	959	6	30	98	515	346	9	974	1,933
Coxe Brothers & Co.															
Dritton No. 1	6	250	41	128	37	23	485	13	17	29	137	84	6	284	769
Dritton No. 2															
Eckley No. 5	6	87	20	79	18	7	217	2	11	16	95	48	1	173	390
Eckley No. 10															
Stockton	3	89	33	57	18	8	208	3	13	15	79	107	1	218	426
Beaver Meadow	1	62	31	48	14	2	161	3	3	10	121	126	1	264	425
Tomhicken	2	33	25	10	7	2	119	1	1	9	53	3	1	68	187
Derringer															
Gowen	7	203	100	78	38	18	444	3	18	15	130	68	1	235	679
Totals	28	764	250	400	132	60	1,634	25	63	94	615	434	11	1,242	2,876
Lehigh Coal and Navigation Company.															
Colliery No. 1	8	157	65	84	37	23	374	1	7	29	86	131	1	255	629
Colliery No. 4	3	41	12	90	26	8	180	1	3	18	55	51	. . .	128	308
Colliery No. 5	3	44	19	23	11	4	104	1	5	11	46	53	. . .	116	220
Colliery No. 6	3	48	14	43	12	5	125	. . .	3	12	. . .	20	. . .	35	160

Colliery No. 9,	1	265	48	81	19	5	220	1	6	15	61	73	....	156	376
Hanto Screen Building,	....	....	....	....	....	....	....	1	3	12	106	81	....	203	203
Totals,	19	355	158	321	105	45	1,003	5	25	97	351	409	1	893	1,896
G. B. Markle & Co.															
Jeddo No. 3,	1	42	7	31	17	13	111	1	4	16	37	46	7	111	222
Jeddo No. 4,	1	15	5	43	21	10	95	1	6	19	49	89	6	170	265
Highland No. 1,	1	35	22	22	12	6	98	1	4	11	32	72	6	126	224
Highland No. 2,	1	69	45	14	20	13	162	1	4	19	34	40	6	104	266
Highland No. 5,	1	35	30	4	7	2	79	1	4	10	65	50	6	136	215
Totals,	5	196	109	114	77	44	545	5	22	75	217	297	31	647	1,192
Linderman & Skeer.															
East Sugar Loaf No. 1,	....	40	7	29	5	2	83	1	2	6	....	14	1	24	107
East Sugar Loaf No. 2,	1	98	76	57	14	2	248	1	3	18	142	100	2	266	514
East Sugar Loaf No. 4 and 5,	1	98	68	10	14	4	195	1	4	8	61	67	2	145	340
East Sugar Loaf No. 6,	1	63	25	16	8	4	117	1	4	9	....	13	1	27	144
Humboldt colliery,	1	49	20	11	9	2	92	1	4	8	23	50	1	87	179
Totals,	4	348	196	123	50	14	735	5	15	49	229	244	7	549	1,284
Upper Lehigh Coal Company.															
Upper Lehigh colliery,	4	123	128	39	56	9	359	3	21	42	92	111	7	276	635
J. C. Haydon & Co.															
Spring Mountain No. 1,	2	42	40	18	27	3	132	8	8	13	58	148	17	252	384
Spring Mountain No. 4,	2	53	60	15	26	3	159	11	15	22	56	179	....	283	442
Totals,	4	95	100	33	53	6	291	19	23	35	114	327	17	535	826
Pardee Brothers & Co.															
Lattimer No. 1,	1	9	....	137	7	6	160	7	21	17	163	153	8	369	529
Lattimer No. 3,	1	3	....	158	7	5	174	7	19	16	176	170	2	390	564
Totals,	2	12	....	295	14	11	334	14	40	33	339	323	10	759	1,093
Calvin Pardee & Co.															
Hollywood colliery,	3	27	....	86	10	1	127	8	15	12	90	141	3	269	396
Pardee Sons & Co.															
Harwood mines,	5	191	200	43	19	20	478	6	16	22	189	63	4	300	778
A. S. Van Wickle.															
Milnesville colliery,	12	44	258	68	29	2	413	11	54	34	135	400	7	641	1,054
C. M. Dodson & Co.															
Beaver Brook,	2	81	83	22	14	10	212	2	11	10	90	147	7	267	479

TABLE NO. 3.—*Continued.*

NAMES OF COLLIERIES.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand total inside and outside.
	Inside foremen.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All other company men.	Superintendents' bookkeepers and clerks.	Total outside.	
Lehigh Valley Coal Company.															
Spring Brook	1	70	65	32	9	1	178	1	10	25	82	65	1	184	362
M. S. Kemmerer & Co.															
Sandy Run colliery	2	85	90	28	18	14	237	3	5	22	70	54	3	157	394
Lehigh and Wilkes-Barre Coal Company.															
Honey Brook No. 2	2	39	20	86	6	....	146	1	6	26	59	50	1	143	289
Wm. T. Carter & Co.															
Coleraine colliery	1	58	68	31	23	3	184	3	6	16	54	42	3	124	308
John S. Wentz & Co.															
Hazle Brook	1	57	60	12	16	7	153	3	6	15	92	28	1	145	298
Evans Mining Company.															
Evans colliery	2	51	40	16	7	2	118	1	4	5	20	33	3	66	184
Grand total for all	113	2,951	2,155	1,852	765	272	8,106	121	374	710	3,356	3,484	126	8,171	16,277

Recapitulation of Table No. 3.

A. Pardee & Co.,	16	362	330	103	125	23	959	6	30	98	515	316	9	974	1,933
Coxe Bros. & Co.,	28	764	250	400	132	60	1,634	25	63	94	615	434	11	1,242	2,876
Lehigh Coal and Navigation Company,	19	355	158	321	105	45	1,003	5	27	97	354	409	1	893	1,896
G. B. Markle & Co.,	5	196	109	114	77	44	545	5	22	75	217	297	31	647	1,192
Linderman & Skeer,	4	348	196	123	50	14	735	5	15	49	220	244	7	549	1,284
Upper Lehigh Coal Company,	4	123	128	39	56	9	359	3	21	42	92	111	7	276	635
J. C. Haydon & Co.,	4	95	100	33	53	6	291	19	23	35	114	327	17	535	826
Pardee Bros. & Co.,	2	12	....	295	14	11	334	14	40	33	339	323	10	759	1,093
Calvin Pardee & Co.,	3	27	....	86	10	1	127	8	15	12	90	141	3	269	396
Pardee Sons & Co.,	5	191	200	43	19	20	478	6	16	22	189	63	4	300	778
A. S. Van Wickle,	12	44	258	68	29	2	413	11	54	34	135	400	7	641	1,054
C. M. Dodson & Co.,	2	81	83	22	14	10	212	2	11	10	90	147	7	267	479
Lehigh Valley Coal Company,	1	70	65	32	9	1	178	1	10	25	82	65	1	184	362
M. S. Kemmerer & Co.,	2	85	90	28	18	14	237	3	5	22	70	54	3	157	394
Lehigh and Wilkes-Barre Coal Company,	2	32	20	86	6	....	146	1	6	26	59	50	1	143	289
Wm. T. Carter & Co.,	1	58	68	31	23	3	184	3	6	16	54	42	3	124	308
John S. Wentz & Co.,	1	57	60	12	16	7	153	3	6	15	92	28	1	145	298
Evans Mining Company,	2	51	40	16	7	2	118	1	4	5	20	33	3	66	184
Grand totals for all companies,	113	2,951	2,155	1,852	763	272	8,106	121	374	710	3,356	3,484	126	8,171	16,277

TABLE NO. 4.—*List of fatal accidents which occurred in the mines of the Fifth Anthracite District for the year ending December 31, 1892.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan 8.	1	John Enos,	Laborer,	22	..	..	Sandy Run,	Sandy Run, Luzerne,	Fatally injured by coal falling from slip in pillar near which he was working; died seven hours later.
26.	2	William Mace,	Outside laborer,	45	..	.	Lattimer No. 7,	Lattimer, Luzerne,	Fatally crushed by mud car under which he fell while riding on front end of same; died of his injuries at the State Hospital at Hazleton, same night.
Feb. 2.	3	Richard R. Griffiths,	Miner,	55	1	..	Upper Lehigh No. 4,	Upper Lehigh, Luzerne,	Killed by falling rock while robbing pillars; warned his two laborers and they escaped unharmed.
12.	4	Michael Kisoski,	Laborer,	34	1	..	Cranberry,	Hazleton, Luzerne,	Killed by fall of clod in breast while he and another laborer were loading a buggy.
Apr. 13.	5	John Sussevitch,	Miner,	41	1	2	East Sugar Loaf No. 5,	Stockton, Luzerne,	Fatally injured by a fall of clod in a breast under which he was shoveling coal; died at the hospital on the same day.
June 15.	6	William H. Steventon,	do.	30	1	5	Colliery No. 1,	Nesquehoning, Carbon,	Leg broken by fall of rock while barring same after blast; died June 25th.
16.	7	Michael Boranish,	do.	42	1	3	Drifton No. 1,	Drifton, Luzerne,	Killed by a fall of roof rock while barring coal after a blast; he was fully aware that the rock was not safe.
24.	8	Andrew Martin,	Laborer,	36	1	1	Upper Lehigh No. 7,	Upper Lehigh, Luzerne,	Leg fractured by fall of top coal under which he went contrary to miners' orders; died of shock at hospital same day.
28.	9	Waldie Potts,	Miner,	35	1	2	Spring Brook colliery,	Yorktown, Carbon,	Pelvis fractured by fall of bone coal while barring same after blast; died at hospital June 29.
July 8.	10	Michael Martin,	do.	30	..	..	Hollywood stripping,	Hollywood, Luzerne,	Fatally burned by black powder which exploded while he was making cartridges; died at hospital July 9th.
30.	11	Andrew Readla,	Outside driver	18	..	..	Milnesville stripping,	Milnesville, Luzerne,	Killed by being crushed between car and truck when car was dumped on the bank.
Aug. 3.	12	Robert Walton,	Miner,	38	1	1	Upper Lehigh No. 4,	Upper Lehigh, Luzerne,	Both these men were caught under a fall of roof; they expected the fall and were running their car out of the place; Walton was taken out alive thirteen and three-fourths hours after the fall, but died in two hours; Cusinski was killed instantly, his body was recovered twenty-four hours later.
3.	13	John Cusinski,	Laborer,	24	..	..			

Aug. 5.	14	Michael Leshney	Laborer,	32	1	1	Sandy Run,	Sandy Run, Luzerne,	Fatally injured by top coal from a hidden slip falling from over prop on him; died in one-half hour.
11.	15	William Lane,	Miner,	30	1		Honey Brook No. 2,	Trescow, Carbon,	Fatally injured by fall of slate while robbing pillars in Mammoth vein; died at hospital August 12th.
13.	16	John Patrick,	Outside laborer,	19			Hollywood breaker,	Hollywood, Luzerne,	Fatally squeezed between car and trestle post; died in fourteen hours.
15.	17	Paul Gabbish,	do.	30			Milnesville stripping,	Milnesville, Luzerne,	Killed by coal from pillar falling on him while loading a car near the same.
16.	18	Patrick Duffy,	Helper,	18			Milnesville colliery,	do. do.	Fatally injured; squeezed between locomotive cab and trestle; died at hospital August 19.
18.	19	August Schench,	Locomotive engineer,	19		1	Hazleton No. 3 stripping,	Hazleton, Luzerne,	Killed by falling under his cars in coming back from the bank or dump.
22.	20	Joseph Videz,	Miner,	52		2	Deringer,	Deringer, Luzerne,	Fatally injured by falling slate and top coal under which he went while his laborer was barring it down; died thirty-three hours after.
26.	21	John O. Donnell,	Laborer,	29			Spring Mountain No. 4,	Jeanesville, Luzerne,	Killed by a slide of coal from upper side of gangway which crushed him between car and lower rib.
Sept. 6.	22	George Jones,	Helper on locomotive,	16			Humboldt colliery,	Humboldt, Luzerne,	Killed by empty car of trip on which he was riding; leaving the track and crushing him.
8.	23	Andrew Wasel,	Laborer,	25			Harwood slope No. 2,	Harwood, Luzerne,	Fracture of skull at base by being struck by a piece of coal on pitch of 31 ; died at hospital September 16.
15.	24	John Gallo,	Outside laborer,	32	1	3	Milnesville stripping,	Milnesville, Luzerne,	Killed by coal flying from blast, while sitting on trestle sill where he said he was safe enough when warned.
15.	25	John Dominco,	Miner,	32	1		Drifton No. 1,	Drifton, Luzerne,	Injured about the head by a fall of extra rock in gangway; died of injuries September 24.
20.	26	Joseph Stein,	do.	29			Hazleton mine,	Hazleton, Luzerne,	Fatally injured by fall of dividing slate at face of his breast; died at hospital same day.
20.	27	Stanley Roman,	do.	24			East Sugar Loaf No. 6,	Stockton, Luzerne,	Killed by a rush of coal from face of breast, where instead of timbering as he was ordered he drilled and fired a hole; body was recovered after twenty-nine hours of dangerous work.
20.	28	Joseph Ward,	Patcher,	17			Upper Lehigh No. 6,	Upper Lehigh, Luzerne,	Killed by runaway car striking him near the foot of slope where he was employed.
26.	28	John Mooney,	Miner,	52	1	4	Evans' colliery,	Beaver Meadow, Carbon,	Killed by fall of slate which he knew was bad but he continued to work under it.
Oct. 1.	30	John Gomega,	Miner,	29			Cranbery colliery,	Hazleton, Luzerne,	Killed by fall of top coal at face of his breast while preparing to fire a blast in the same.
1.	31	Michael Barno,	Laborer,	30	1	1	Drifton No. 1,	Drifton, Luzerne,	Spine fractured by being run over by an empty car while fixing latches for it; died of injuries at hospital.
19.	32	Philip Walters,	Miner,	35	1	6	Honeybrook No. 2,	Trescow, Carbon,	Leg fractured by fall of bone; was sent to hospital, where the limb was amputated; died November 4.

TABLE NO. 4.—*Continued.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Widows.	No. of orphans.	Name o Colliery.	Location—County.	Nature and Cause of Accident.
Oct. 20.	33	Patrick Gildea.	Miner. . . .		. .	. .	Beaver Brook, ...	Beaver Brook, Luzerne, . .	Jaw fractured and back and side injured by fall of top coal and bone; died at hospital October 21.
29.	34	George Noviock.	Outside driver.	18	. .	. .	Milnesville No. 3.	Milnesville, Luzerne. . . .	Leg fractured and foot mashed by car; taken to the hospital, where he died November 25.
Nov. 7.	35	John Miscarnisa.	Laborer. . . .	24	. .	. .	Milnesville No. 3.	Milnesville, Luzerne. . . .	Pelvis fractured and injured internally by being squeezed between loaded car and roof; died at hospital November 9.
10.	36	Michael Kusnis.	Slate picker. .	40	1	. .	East Sugar Loaf breaker No. 2.	Stockton. Luzerne, ...	Killed; slipped on shute and fell head first into belt wheel of jig; his head was crushed between wheel and frame.
11.	37	James Cartwright.	Miner. . . .	53	1	4	Highland No. 1.	Highland. Luzerne.	Fatally injured by top coal which fell on him while examining it after firing hole in it; died 1½ hours after accident.
12.	38	Stachley Brezinski. . . .	Door boy. . . .	15	. .	. .	Highland No. 2.	Highland Luzerne.	Killed; fell under empty car on which he got contrary to driver's orders.
18.	39	Louis Armone.	Jig runner. . .	18	. .	. .	Lattimer breaker No. 3. .	Lattimer. Luzerne, ...	Killed; while fixing the jig he reached through belt and was caught between belt and wheel and drawn in and crushed.
22.	40	August Wittig.	Helper on locomotive.	16	. .	. .	Humboldt colliery. . . .	Humboldt, Luzerne.	Fatally injured; slipped on rail and fell under locomotive while getting off to turn switch; died at hospital November 25.
28.	41	John Marko.	Laborer outside.	26	. .	. .	Milnesville stripping. . .	Milnesville. Luzerne. . . .	Killed; run over by lomotive and stripping cars while cleaning snow and ice from railroad tracks; did not obey signals.
28.	42	Joseph Kelshaw.	Mine foreman.	53	1	2	Spring Mountain No. 4. .	Jeanesville, Luzerne. . . .	Right leg crushed in collision of mine car and timber truck; leg amputated at hospital; died at 11 p. m. November 29.
	43	Robert Houser.	Slate picker. .	14	. .	. .	Hazleton mine breaker. .	Hazleton. Luzerne, ...	Smothered in pea coal pocket by being drawn down into coal, while playing on top of it.
9.	44	William Brinker.	Roadman. . .	30	. .	. .	Hazle Brook, ...	Hazle Brook, Luzerne, . .	Fatally injured by flying coal from blast in gangway; was warned, but stood where coal struck him, 107 feet from face of gangway; died same day.
12.	45	John McGraw.	Driver, night.	21	. .	. .	Spring Mountain No. 1. .	Jeanesville. Carbon, . . .	Killed by falling from a loaded car on inside slope.

28,	46	Joseph Barra, ...	Screen feeder,	24	. .	. .	Milnesville breaker, . . .	Milnesville, Luzerne. . . .	Killed by being drawn into the cog-gearing of screen by his overcoat while oiling screen, which the oiler should have done.
28.	47	Philip McDonald, ...	Miner. . . .	24	. .	. .	East Sugar Loaf No. 4, . .	Stockton, Luzerne, ...	Killed by fall of coal from face of breast while trimming after firing a blast.
31.	48	George Miccolite.	Laborer, . . .	40	. .	. .	Spring Brook colliery. . .	Yorktown, Carbon, ...	Spine fractured by fall of clod in breast; died of his injuries at hospital, January, 1893.

Total mine fatalities, 48; widows, 19; orphans under 16 years of age, 37.

Fatal Accidents on Strippings under Contractors.

Mar. 24.	49	John Horgesh, ...	Laborer, . . .	37	1	1	Beaver Brook.	Beaver Brook, Luzerne, . .	Killed by rock which came from second explosion of blast which everyone thought had exploded, and he and they were returning to their work.
June 18.	50	John Kozoski, ...	Laborer, . . .	25	1	1	Milnesville stripping, . .	Milnesville, Luzerne. . . .	Killed by stripping car running over him on top of plane where he was employed.
Nov. 3.	51	Frank Fabian, ...	Laborer, . . .	45	1	1	Stockton stripping, . . .	Stockton, Luzerne, ...	Fatally crushed by caving bank, under which he was warned by the foreman not to stand; died of his injuries at the hospital same night.
Dec. 14.	52	James De Frank.	Time-keeper.	35	. .	. .	Milnesville stripping, . .	Milnesville, Luzerne, . . .	De Frank was throwing out dynamite on the blacksmith's forge when it exploded, killing him and Parich, and injuring Walker so severely that he died at the hospital the same night.
14.	53	Michael Parich, ...	Blacksmith's helper.	17	. .	. .	do. do. . .	do. do. . .	
14.	54	Dominick Walker.	Laborer, . . .	22	1	1	do. do. . .	do. do. . .	

Stripping fatalities, 6; widows, 4; orphans under 16 years of age, 4.

Fatal Accidents in Jeddo Tunnel under C. F. King & Co.

May 23.	55	John Matty, ...	Laborer, . . .	23	. .	. .	Slope A, ...	Ebervale, Luzerne, ...	Killed by fall of clod, caused by prop being discharged by blast at face of heading.
July 14.	56	David Fitzpatrick. . . .	Chargeman. .	26	1	1	Slope B.	Lattimer, Luzerne . . .	Neck broken by falling down slope; the bell-pull broke in his hand when he pulled it.
Aug. 30.	57	Frank Speeney, ...	Laborer, . . .	35	. .	. .	Slope A, ...	Ebervale, Luzerne, ...	Killed by being caught between car and roof while riding up the slope to go home.

Jeddo tunnel fatalities, 3; widows, 1; orphans under 16 years of age, 1.

Recapitulations of Mine Fatalities of Table No. 4.

OCCUPATION.	Number Killed	Per cent.	NATIONALITY.	Number Killed.	Per cent.	CAUSE OF FATALITIES.	Number Killed.	Per cent.
Mine foreman	1	2.1	Hungarian	15	31.2	By falls of coal roof and sides	25	52.1
Miners	18	37.5	Polish	8	16.7	By falls of coal and clay on stripping	2	4.2
Mine laborers	10	20.8	American	8	16.7	By mine cars	7	14.6
Roadman	1	2.1	Irish	5	10.4	By cars on surface	8	16.6
Drivers	1	2.1	English	4	8.3	By machinery	3	6.2
Door boys and patchers	2	4.1	Italian	3	6.2	By blasts and explosions	2	4.2
Locomotive engineers	1	2.1	Welsh	2	4.2	By smothering in coal-pocket	1	2.1
Locomotive firemen	1	2.1	Austrian	2	4.2			
Outside laborers	3	6.2	German	1	2.1			
Air runner	1	2.1						
Screen feeder	1	2.1						
Outside drivers	2	4.2						
Slate pickers	2	4.2						
Total fatalities	48	100.0	Total	48	100.0	Total fatalities	48	100.0

TABLE 5.—*List of non-fatal accidents which occurred in the mines of the Fifth Anthracite District for the year ending December 31, 1892.*

Date of accident.	No. of accidents.	NAME OF PERSON.	Occupation	Age.	Married or single.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 4.	1	Max Simbone,	Miner,	42	M.	Cranberry No. 4,	Hazle twp., Luzerne,	Burned on face and hands by an explosion of C. H. gas.
6.	2	Anthony Danelovic,	Laborer,	45	M.	Upper Lehigh No. 4,	Upper Lehigh, Luzerne,	Left leg fractured below knee; slipped on ice and fell on railroad track.
9.	3	Michael Marnshack,	Miner,	28	M.	Evans colliery,	Beaver Meadow, Carbon,	Left leg fractured below knee by fall of coal in barring after shot.
11.	4	David Hughes,	Driver,	16	S.	East Sugar Loaf No. 2,	Stockton, Luzerne,	Squeezed about the hips between door-post and car on the turnout.
18.	5	Columbus Rhorety,	Miner,	34	M.	Spring Mountain No. 4,	Jeanesville, Luzerne,	Arm and leg cut and bruised by falling clod.
21.	6	Frank Boyle,	Helper on locomotive.	14	S.	Harwood mines,	Harwood, Luzerne,	Compound fracture of right leg above knee; caught between car bumper and locomotive.
25.	7	Michael Super,	Miner,	32	M.	Harwood slope No. 2,	do.	Back severely bruised between shoulders by clod falling on him after he had neglected to take it down as ordered.
26.	8	John Trimble, Jr.,	Laborer,	20	S.	Sandy Run,	Sandy Run, Luzerne,	Injured internally by long prop which swung around while b eing raised by ropes striking him.
28.	9	Henry Shade,	Slate picker,	14	S.	Stockton breaker,	Stockton, Luzerne,	Right arm fractured; he left his work and taking a strand of rope let it wind around a shaft that was running 175 revolutions per minute, and in trying to remove the rope his wrist was caught and his arm broken, and he would have been killed if a young man had not thrown a piece of iron into the rolls and stopped them.
Feb. 8.	10	William Aselfort,	Oiler,	16	S.	Lattimer No. 3,	Lattimer, Luzerne,	Leg lacerated and bruised; caught and squeezed between cars while oiling where it was not usual to do so.
8.	11	George Bearnot,	Laborer,	26	M.	Beaver Brook colliery,	Beaver Brook, Luzerne,	Burned about face and cut on arm; he drilled out a missed charge in coal and caused an explosion of the powder.
12	12	Andrew Kandash,	do.	25	S.	Cranberry,	Hazleton, Luzerne,	Hip fractured by fall of clod while loading buggy on cross road in breast; Michael Kisoski was killed by the same fall.
13.	13	George Lutz,	Miner	36	M.	Upper Lehigh No. 4,	Upper Lehigh, Luzerne,	Rib fractured and scalp lacerated by piece of top coal rolling against him.
18.	14	Christian Kilboitski,	Driver,	16	S.	Hazleton mine,	Hazleton, Luzerne,	Calf of leg badly torn by wheel of car passing over it; he stumbled and fell on road in front of car.

TABLE NO. 5.—*Continued.*

Date of accident.	No. of accidents.	NAME OF PERSON.	Occupation.	Age.	Married or single.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Feb. 19.	15	Aaron Marsland. . . .	Miner.	53	M.	Milnesville stripping. . . .	Milnesville, Luzerne. . .	Two ribs fractured and injured internally by rocks flying from second of two bore holes in stripping fired at same time.
19.	16	Michael Super.	do.	32	M.	Harwood No. 2.	Harwood, Luzerne. . . .	Cut over eye and on arm; reported, as he insisted on being sent to the hospital at Hazleton, the second time in a month; see January 23.
20.	17	Richard Roxberry. . .	Bottom man. . . .	18	S.	do.	do. . . .	Injured by a runaway car on slope; the rope broke.
23.	18	Joseph Plober.	Miner.	28	S.	South Sugar Loaf.	Hazleton, Luzerne. . . .	Severe scalp wounds by fall of coal from face of breast.
24.	19	Frank Anemone. . . .	Loader.	32	M.	Hollywood breaker. . . .	Hollywood, Luzerne. . .	Squeezed severely about hips by runaway trip of cars.
Mar. 12.	20	John Craver.	Driver.	23	S.	Hazleton No. 8, ...	Hazleton, Luzerne, . . .	Squeezed about head and thighs by falling under cars.
12.	21	John Cannon.	Miner.	45	M.	Spring Mountain No. 4. . .	Jeanesville, Luzerne, .	Severely bruised about limbs; scaffold broke while they were lifting a collar to its place.
18.	22	Benjamin Enama. . .	do.	33	S.	Sandy Run, ...	Sandy Run, Luzerne. . .	Severe scalp wound from coal falling from rib of breast while he was engaged in blasting rock for road.
22.	23	John Morgan.	do.	30	M.	Spring Mountain No. 4. . .	Jeanesville, Luzerne. .	Head cut slightly by coal falling on him from slip.
23.	24	Andrew Moletzski. . .	Laborer.	38	M.	Cranberry.	Hazleton, Luzerne. . . .	Leg fractured by fall of slate.
31.	25	Patrick Buchanan. . .	do.	38	S.	East Sugar Loaf No. 4. . .	Stockton, Luzerne. . . .	Leg fractured below knee by fall of rock in face of gangway.
31.	26	Michael Rieke.	Out laborer. . . .	24	S.	Lattimer No. 1, ...	Lattimer, Luzerne. . . .	Severely bruised; squeezed between car and leg of trestling.
Apr. 2.	27	Anthony Marcovits. .	Laborer, ...	30	S.	Spring Brook, ...	Yorktown, Carbon, . . .	Breast and arm seriously injured; kicked by mule.
4.	28	William Kimmell. . .	Bottom man. . . .	22	S.	Honeybrook No. 2.	Trescow, Carbon.	Thigh badly bruised and lacerated by car running on him.
6.	29	John Adams.	Driller.	43	M.	Milnesville stripping. . . .	Milnesville, Luzerne. . .	Skull and rib fractured, rib driven into his lung; also severely squeezed about body by fall of coal.
6.	30	Julius Oberman. . . .	Locomotive engineer.	24	M.	Cranberry, ...	Hazleton, Luzerne. . . .	Collar bone fractured by being caught between timber truck and car.
11.	31	John Daley.	Bottom man. . . .	28	M.	Spring Mountain No. 4. . .	Jeanesville, Luzerne. . .	Leg fractured below knee by coal rolling down slope.
12.	32	Thomas Reehil. . . .	Miner.	33	M.	South Sugar Loaf.	Hazleton, Luzerne. . . .	Ankle sprained by falling while running from blast.

	20.	33	George Hudock, . . .	Laborer, ...	38	S.	Upper Lehigh No. 4. . . .	Upper Lehigh, Luzerne,	Scalp lacerated and left leg fractured by fall of top rock.
May	2.	34	Patrick Boyle, ...	Miner.	50	M.	Hazleton mine, ...	Hazleton, Luzerne, . . .	Back hurt and injured internally; squeezed between car and side of gangway; was riding on side of car.
	3.	35	Jacob Branzi	Laborer, ...	35	M.	Cranberry, ...	do. do. . . .	Head cut and shoulders bruised; fell headlong down over a fall of rock into gangway.
	6.	36	Stephen Contos, . . .	Miner.	30	M.	Highland No. 1.	Highland, Luzerne, . .	Toes of right foot crushed by rock he was taking down rolling over on his foot.
	11.	37	Thomas O. Evans. . .	Locomotive engineer.	29	M.	Spring Brook, ...	Yorktown, Carbon. . . .	Leg crushed, necessitating amputation above ankle; caught between his derailed locomotive and coal mine cars.
	12.	38	John Lynch, ...	Patcher.	18	S.	Harwood No. 2, ...	Harwood, Luzerne, . . .	Bruised sorely by being struck by empty car at foot of slope while warning a miner to look out for car.
	16.	39	Christ Shade, ...	Miner.	51	M.	Hazleton No. 8, ...	Hazleton, Luzerne, . . .	Several ribs broken, hand squeezed and body bruised by being caught between cars and brattice in tunnel.
	20.	40	Joseph Deitrich, . . .	Slate picker, . . .	16	S	Lattimer No. 3.	Lattimer, Luzerne, . . .	Head bruised, face scratched and arm sprained by falling from new building twenty feet to roof and rolling off to ground, a distance of thirty feet, while playing in breaker.
	23.	41	Wilson Battersby. . .	Locomotive helper.	18	S.	Milnesville.	Milnesville, Luzerne. .	Compound fracture of the arm; caught between locomotive and truck on side track on surface.
	31.	42	Peter Palermo. . . .	Stripping laborer.	33	M.	Lattimer No. 3.	Lattimer, Luzerne. . . .	Injured by slipping and falling on bar while getting out of the way of rock he had been starting with the bar.
June	1.	43	Charles Light.	Laborer, ...	40	S.	Laurel Hill.	Hazleton, Luzerne, . . .	Left leg fractured above the knee by a fall of top slate in the Wharton vein gangway.
	2.	44	Charles Elliott. . . .	Miner.	32	S.	Highland No. 1, ...	Highland, Luzerne, . .	Spinal column dislocated by a fall of coal while barring after a shot.
	4.	45	Lawrence Teresh. . .	Laborer, ...	35	S.	Harwood No. 5.	Harwood, Luzerne, . . .	Squeezed by a fall of bone under which he was engaged in drilling a hole.
	8.	46	Louis Long, ...	do.	28	M.	South Sugar Loaf.	Hazleton, Luzerne, . . .	Wrist badly gashed by coal falling from his partner's shovel while loading car together
	9.	47	John Miller, ...	Driver.	17	S.	Humboldt.	Humboldt, Luzerne. . .	Left leg broken below knee by falling under a moving trip of cars.
	9.	48	Darby O. Donnell, . .	Slate picker, . . .	14	S.	do.	. . . . .	Arm broken while oiling moving machinery; was caught between belt and beam.
	18.	49	Thomas Quinney. . .	Locomotive helper.	18	S.	Milnesville.	Milnesville, Luzerne. . .	Leg broken above knee and back hurt by falling under locomotive in running to turn switch.
	18.	50	Robert Mason, ...	Slate picker. . . .	12	S.	. . . . .	. . . . .	Leg badly lacerated by being caught between elevator buckets and jig in breaker.
	20.	51	Andrew Lastacka, . .	Out laborer, . . .	34	S.	. . . . .	. . . . .	Leg broken by being struck by coal from shot in stripping.
	21.	52	Ezra Prasher, ...	Driver.	16	S.	. . . . .	. . . . .	Right hip badly bruised and left leg cut by falling under empty cars at plane.
	21,	53	John Leshko.	Miner.	41	M.	Cranberry, ...	Hazleton, Luzerne, . . .	Foot and ankle bruised by being caught between coal and prop, not seriously
	21.	54	Benjamin Davis. . . .	do.	38	M.	Highland No. 3.	Highland, Luzerne, . .	Internal injuries, caused by small piece of coal falling and striking him on the abdomen.
	22.	55	Michael Sheeger. . .	Laborer.	30	S.	East Sugar Loaf No. 2. . .	Stockton, Luzerne. . . .	Slightly injured by falling down slope; while ringing bell he slipped and fell.
	22.	56	Michael Zirack. . . .	Loader, ...	22	S.	Stockton breaker, ...	Stockton, Luzerne. . . .	Squeezed between car and loading lip by the car being bumped down under breaker.
	25.	57	Michael Getza.	Laborer.	40	S.	Milnesville.	Milnesville, Luzerne. .	Badly bruised about body by runaway car on slope in coal stripping.

TABLE NO. 5—*Continued.*

Date of accident.	No. of accident.	NAME OF PERSON.	Occupation.	Age.	Married or single.	Name of Colliery.	Location County.	Nature and Cause of Accident.
June 28.	58	Peter Sloberosky. . .	Laborer.	30	M.	Highland No. 5.	Jeddo, Luzerne.	Leg fractured below knee by fall of parting slate in gangway.
29.	59	James Smith.	Miner.	31	M.	Beaver Brook.	Beaver Brook, Luzerne.	Both burned about face and hands by explosion of powder by spark from miner's lamp which was on his head falling into powder while he was making a cartridge.
29.	60	Martin Scheese. . . .	Laborer.	22	S.	. . . . .	do. do. do.	
July 7.	61	Fredrick Heckman. .	Outside laborer. .	60	M.	Hazleton No. 8.	Hazleton, Luzerne. . . .	Head cut and back injured; he was knocked down by loaded car, fell between rails and car passed over him, squeezing him.
12.	62	John Kline.	Miner.	27	M.	Cranberry.	Hazleton, Luzerne. . . .	Hip fractured by fall of top coal while barring after shot.
12.	63	Michael Henry. . . .	do.	32	M.	East Sugar Loaf No. 6. . .	Stockton, Luzerne.	Both burned about face and hands by an explosion of gas caused by the laborers' light while putting up lagging.
12.	64	Patrick Dinsmore. . .	Laborer.	25	S.	do. do. . .	do. do.	
14.	65	Frank Joe.	do.	40	M.	Honeybrook No. 2.	Trescow, Carbon.	Leg fractured below knee by prop falling on him.
14.	66	George Zang.	Ticket boss. . . .	25	S.	Honeybrook No. 2.	do. do.	Fracture of leg and other injuries by falling nineteen feet to the ground by guard rail giving way with him.
14.	67	Henry Sundrbek. . . .	Watchman.	37	M.	Lattimer strippings.	Lattimer, Luzerne. . . .	Thumb and index finger severed from left hand by cog gearing on steam shovel while cleaning machinery which was in motion at the time.
14.	68	Michael Falatko. . . .	Laborer.	23	S.	Tomhicken.	Tomhicken, Luzerne. . .	Left leg fractured and right ankle dislocated by a fall of coal from the side of the gangway.
18.	69	David Parry.	Door-boy.	16	S.	Spring Mountain No. 1. . .	Jeanesville, Carbon. . .	Arm fractured by being caught between car and roof on slope.
25.	70	David Lanoni.	Miner.	46	S.	Drifton No. 1.	Drifton, Luzerne.	Eye seriously injured by dynamite exploding from his driving a wedge into a missed hole after he supposed he had extracted the powder.
27.	71	John Ponday.	Driver.	17	S.	Milnesville, outside. . . .	Milnesville, Luzerne. . .	Left foot badly squeezed by car on which he tried to jump; passing over it.
28.	72	William Kreiger. . . .	Roadman.	57	M.	Spring Mountain strippings.	Jeanesville, Luzerne. . .	Leg broken by foot getting fast between two rocks and falling; his weight caused the fracture.
28.	73	Peter Fetsno.	Patcher.	17	S.	Beaver Meadow.	Beaver Meadow, Carbon.	Arm broken and head bruised by being caught between car and pillar.
28.	74	Anthony Gabendore. .	Laborer.	28	M.	Lattimer strippings. . . .	Lattimer, Luzerne. . . .	Leg fractured below knee by buggy being derailed and crushing him against a plank.

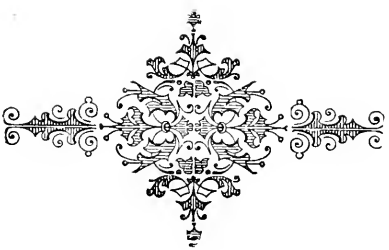
28,	75	Frank Green,	Slate-picker,	11	S.	Sandy Run breaker,	Sandy Run, Luzerne,	Leg broken by a plank which he pulled down on himself.
Aug. 2,	76	Fritz Burtskin,	Laborer,	23	M.	Honeybrook No. 2,	Trescow, Carbon,	Head and face cut by coal falling from slip on pillar which was loosened by a shot in pillar.
10,	77	Peter Romanesky,	Miner,	45	M.	Highland No. 2,	Highland, Luzerne,	Fracture of collar bone by fall of top coal in his breast.
10,	78	Eugene McGee,	Loader,	22	S.	East Sugar Loaf No. 6,	Stockton, Luzerne,	Seven ribs fractured by being caught between car and gangway.
27,	79	Frank Detrick,	Slate-picker,	13	S.	Lattimer breaker No. 3,	Lattimer, Luzerne,	Injured; while playing around conveyors he fell sixteen feet to the culm bank; no bones broken.
31,	80	Dominick Barber,	Laborer,	21	S.	Spring Mountain stripping,	Jeanesville, Luzerne,	Foot slightly injured by stone rolling on it from bank.
31,	81	Michael Ferritz,	Runner,	26	S.	do. do. do.	do. do.	Injured by blow from hoisting rope staple, which pulled out of car.
Sept. 13,	82	James Larocka,	Loader,	24	M.	Milnesville breaker,	Milnesville, Luzerne,	Two ribs fractured by being squeezed between cars.
26,	83	Peter Desashow,	Laborer,	35	M.	Spring Mountain strippings,	Jeanesville, Luzerne,	Neck and chin cut by hook of stripping car catching him while dumping the car.
Oct. 1,	84	Charles Gomega,	do.	23	S.	Cranberry,	Hazleton, Luzerne,	Slightly injured by same fall of coal passing over him that caught and killed his brother John the miner.
5,	85	Patrick O. Donnel,	Miner,	34	M.	Spring Mountain No. 4,	Jeanesville, Luzerne,	Leg slightly bruised by shute board striking against it.
10,	86	Dennis Conner,	do.	32	M.	South Sugar Loaf,	Hazleton, Luzerne,	Foot crushed by fall of top coal after shot; amputated at instep, at State Hospital.
11,	87	Daniel Snyder,	do.	30	M.	East Sugar Loaf No. 4,	Stockton, Luzerne,	These men were doing something to a missed rock hole and caused an explosion which injured Snyder so that his arm was amputated below elbow, and one eye had to be removed; while Parishl was burned slightly on face and hands.
11,	88	Andro Parishl,	Laborer,	26	S.	do. do.	do. do.	
11,	89	Thomas Clark,	Miner,	32	M.	Hazle Brook colliery,	Hazle Brook, Luzerne,	Leg fractured by large piece of coal striking him.
17,	90	John Shecordly,	Driver,	20	S.	Lattimer stripping,	Lattimer, Luzerne,	Seriously bruised by car on which pin broke allowing it to dump unexpectedly and catch him.
27,	91	Frank Rosmerski,	Miner,	35	S.	East Sugar Loaf No. 6,	Stockton, Luzerne,	Slightly burned on face and hands by gas which he lighted himself.
28,	92	Martin Klaupa,	Outside laborer,	26	S.	Milnesville stripping,	Milnesville, Luzerne,	Leg fractured by fall of clay from a bank under which he was working.
Nov. 2,	93	Condy O'Donnell,	Miner,	28	S.	Evans' colliery,	Beaver Meadow, Carbon,	Severely bruised by a fall of top slate in his working place.
4,	94	Philip Wikton,	Outside laborer,			Harwood breaker,	Harwood, Luzerne,	Severe scalp wound; neck and side bruised; squeezed between car and breaker building.
15,	95	John Hill,	Driver,	21	S.	Sandy Run,	Sandy Run, Luzerne,	Arm fractured above elbow; squeezed between locomotive and pillar on turn-out, through latches being misplaced.
15,	96	Michael Yatsura,	do.	25	M.	Beaver Meadow,	Beaver Meadow, Carbon,	Collar bone fractured and right shoulder bruised by being squeezed between car and brattice on gangway.
18,	97	John Michael,	Laborer,	25	M.	do.	do. do.	Seriously bruised by a buggy which ran away from some other men in the stripping, striking him.
21,	98	Simon Luther,	Miner,	35	M.	Glen slope No. 4,	Gowen, Luzerne,	Leg fractured in two places by fall of coal which he was engaged in dressing down after shot.

TABLE NO. 5.—*Continued*

Date of accident.	No. of accident.	NAME OF PERSON	Occupation.	Age.	Married or single.	Name of Colliery.	Location County.	Nature and Cause of Accident.
Nov. 21.	99	William Butler. . . .	Miner.	55	M.	Hazleton No. 8, ...	Hazleton, Luzerne, . . .	Head cut side and bruised by coal flying from a shot which exploded prematurely through his relighting a squib that went out.
29.	100	Hugh Dugan.	do.	45	M.	Highland No. 2.	Highland, Luzerne. . .	Both these men were burned by an explosion of gas which accumulated in their breast owing to their blocking the manway with coal while driving a cross heading.
29.	101	George Motsgo. . . .	Laborer.	30	S.			
Dec. 3.	102	Leonard Scinto, . . .	Outside laborer. .	30	S.	Milnesville slope No. 3. . .	Milnesville, Luzerne, . .	Ankle fractured by empty car leaving the track while he was walking along side of it to turn switch.
7.	103	Steven Churby . . .	do. do. .	15	S.	Milnesville stripping. . . .	do. do. . .	Toes crushed by car passing over them; he slipped in trying to get on while car was moving.
9.	104	Joseph Stasie.	Miner.	25	S.	East Sugar Loaf No. 6. . .	Stockton, Luzerne. . . .	Ankle fractured by the fall of bell shaped piece of roof rock.
10.	105	William Ryan.	do.	41	M.	South Sugar Loaf, ...	Hazleton, Luzerne. . . .	Head cut and hip bruised by fall of coal after shot.
17.	106	John Bassalli.	do.	32	M.	East Sugar Loaf No. 1, . .	Stockton, Luzerne, . . .	Seriously injured about head by falling down manway of his breast.
22.	107	Jacob Stroek.	do.	24	M.	Cranberry, ...	Hazleton, Luzerne. . . .	Leg fractured by coal flying from shot in face of gangway.
24.	108	John Nick.	do.	26	S.	East Sugar Loaf No. 5. . .	Stockton, Luzerne, . . .	Back and leg badly bruised by fall of rock while barring coal.
28.	109	James Jamieson. . . .	Foreman.	48	M.	Milnesville stripping. . .	Milnesville, Luzerne. . .	These two men were seriously injured about the head by rock from a blast which was fired prematurely by the man in charge of it.
28.	110	Ibra Kolokoski, . . .	Stripping laborer.	25	S.			

Recapitulation.

OCCUPATION.	Number injured.	Per cent.	Nationality.	Number injured.	Per cent.	Causes of accidents.	Number injured.	Per cent.
Miners,	37	33.7	Hungarian,	28	25.5	By explosions of C H gas,	6	5.5
Mine laborers,	20	18.2	American,	22	20.0	By explosions of powder,	6	5.5
Road men,	1	0.9	Irish,	16	14.6	By mine cars,	14	12.7
Bottom men,	3	2.7	Italian,	14	12.7	By cars on surface,	18	16.4
Drivers,	8	7.3	Polish,	12	10.9	By falls of coal, roof and sides,	29	26.4
Door boys,	3	2.7	German,	9	8.2	By falls of coal and clay on strippings,	2	1.8
Oilers,	1	0.9	Austrian,	4	3.6	By falling down manways,	1	0.9
Outside foremen,	2	1.8	Welsh,	3	2.7	By machinery on surface,	4	3.6
Stripping miners,	2	1.8	English,	2	1.8	By coal flying from premature blast,	1	0.9
Outside laborers,	15	13.7				By miscellaneous causes inside,	14	12.7
Locomotive engineers,	2	1.8				By miscellaneous causes on surface,	15	13.6
Locomotive firemen,	3	2.7						
Loaders,	4	3.6						
Watchmen,	1	0.9						
Outside drivers,	1	0.9						
Runners,	1	0.9						
Slate pickers,	6	5.5						
Total,	110	100.0	Total,	110	100.0	Total from all causes,	110	100.0



SIXTH ANTHRACITE DISTRICT.

(SCHULKILL COUNTY.)

OFFICE OF THE INSPECTOR OF MINES,
SHENANDOAH, PA., *March 24, 1893.*

HON. THOMAS J. STEWART, *Secretary of Internal Affairs:*

SIR: In compliance with the act of assembly approved May 20, 1891, I have the honor of herewith submitting to you my annual report as Inspector of mines of the Sixth Anthracite district for the year 1892.

The production of coal during the year was 6,287,366.06 tons being, a decrease of 36,956 tons as compared with the year 1891. The total number of tons shipped to market during the year 1892 was 5,730,850.07, being 751,496 tons less than in the year 1891.

Comparing the year 1892 with the year 1891 we have 12 fatal accidents less, or a reduction of a little over eighteen per cent. The number of wives left widows was twenty-one, and number of orphans, eighty. The non-fatal accidents number one hundred and twenty; of these seventy-three were of a trifling character.

Accompanying this report are the usual tables, which give the number of fatal and non-fatal accidents and their causes, together with other information which may be of general interest.

WILLIAM STEIN,
Inspector.

CONDITION OF COLLIERIES.

I am pleased to report that the condition of the collieries in my district has been considerably improved in regard to increasing the safety of the lives of those working in and about them, and there is no doubt but that the increased vigilance during the year has been the means of reducing the number of accidents. I notice that in nearly all of the collieries additional assistant mine foremen have been employed, whose duties are to visit the workmen as often as practicable, and give suggestions by which those under their charge may avoid taking unnecessary risks. Although the number of colliery officials has been increasing with a view to increase the safety of life and property, I find of the

fifty-four fatal accidents, only nineteen of them could be called purely unavoidable. For instance, four lives were sacrificed by premature explosions: this means that those who were killed went back to a shot before giving it time to explode. Nine lives were lost by jumping on cars and by getting on the high side of "gangway," instead of the low side, to allow cars to pass. The seven deaths from explosions of gas, were all caused by the absolute carelessness of the victims themselves, some of them being the most skilled miners in the district. Nine were killed by falls of coal and roof, two by machinery on surface, and four from miscellaneous causes, such as a miner firing a shot without giving notice to his neighboring workmen, or not retreating far enough away, when about to fire a blast. These thirty-five deaths I say occurred by the carelessness of the victims themselves, and as I have stated in my former reports, we would have fewer accidents if the miners and othres engaged in and about the mines would cease taking risks which so often result in loss of life.

The accompanying tracing shows the means taken to tap the water from the old Myersville slope into Park No. 2 colliery. It was decided to tap the water from the west "gangway" of Myersville slope, and bore-holes were driven 75 feet, but they proved unsuccessful. It was then decided to drive No. 4 "gangway" of Park No. 2 colliery west to a point 130 feet from the old workings, in which the water was lodged, and then to drive three bore-holes, which was done. These did not tap the water, as is shown on tracings of "bore-holes Nos. 1, 2 and 3." The "gangway" was again started and driven a distance of fifty feet further west; from this point holes Nos. 4, 5 and 6 were driven, which tapped the water. We had a vertical height of 230 feet, equal to $99\frac{8}{10}$ pounds pressure per square inch, or 7.18 tons (of 2,000 pounds) per square foot. The number of gallons of water tapped was 45,000,000.

Every precaution was taken by all concerned to prevent any accident while constructing the openings in order to tap this water. When it was decided to drive the first three bore-holes a meeting of the company was held in their office, comprising General Lilly and Mr. Lentz Mr. Lentz, Jr., general superintendent; Mr. Edward Reese, mine superintendent; Mr. S. M. Riley, engineer for the company; Mr. Fred. E. Zerby, engineer for the Lehigh Valley Coal Company; Mr. John Wilhams, inspector of the Land Company, and myself. The water could have been tapped with less cost and with perfect safety, but the company and their officials evidently did not consider the expense, but rather favored the idea that the survey of the old Myersville workings might not be correct.

The water was tapped on the 17th of December, 1892, and the quantity of water run off up to the 19th of January, 1893, was 42,000,000 gallons---diameter of bore-holes $2\frac{1}{4}$ inches. One of the bore-holes ran dry on January 19, 1893, and the other two holes were reamed out to five

MYERSVILLE COLLIERY

N

EAST GANGWAY FULL OF WATER

LEHIGH VALLEY RAILROAD

PARK PLACE

TO MAHANOY CITY

PLAN SHOWING
RELATIVE POSITION OF COLLIER

PLAN
DRILL HOLES FR
TO TAP WATER IN MYER
ORERATED E

EDWARD REESE,
S M RILEY. (?

FULL OF WATER
EAST GANGWAY MYERSVILLE

PLAN SHOWING DRILL HOLE

No 3 HORIZONTAL 76 FT

FAULT

WEST No 4 GANGWAY

INSIDE SLOPE

TO DELANO

WEST No 2 GANGWAY

FAULT

PARK No 2 COLLIERY

SLOPE

BREAKER

SHOWING

PARK No 2 COLLIERY

VILLE COLLIERY WORKINGS

LENTZ, LILLY & CO

NY 1893.

uperintendent in charge

and Mining Engineer.

SECTION SHOWING
DRILL HOLE WITH STAND PIPE & VALVE

WEST No 4 GANGWAY FROM PARK No 2 COLLIERY

inches diameter, so as to maintain a flow of 900 to 1,000 gallons per minute. This large body of water gave no little uneasiness to the workmen at Park No. 2 colliery, although I did not apprehend any danger from it from the fact that we had sufficient thickness of coal strata between No. 4 "gangway" and the water to resist more pressure than we had, and special care was taken by Mr. William O. Lentz and Mr. Edward Reese that nothing should be done unless authorized by them, and they can justly feel proud of their success.

TABLE A.—*Showing comparative statements of fatal casualties for the years 1891 and 1892.*

	YEARS.	
	1891.	1892.
Explosions of fire-damp,	4	7
Explosions of blasting material,	3	....
Premature explosions,	6	4
Falls of coal and roof,	28	21
Crushed by mine cars,	7	9
Falling down shafts and slopes,	3	....
By coal flying from shots,	1	....
By machinery on surface,	2	2
Miscellaneous,	12	11
Totals,	66	54

NUMBER OF FATAL ACCIDENTS AND QUANTITY OF COAL PRODUCED PER LIFE LOST.

	Number of fatal accidents.	Tons of coal produced per fatal accident.
Philadelphia and Reading Coal and Iron Company,	32	115,659
Lehigh Valley Coal Company,	5	97,428
Lehigh and Wilkes-Barre Coal Company,	3	163,183
Lentz, Lilly & Co.,	2	219,014
Coxe Brothers,	1	188,161
Individual firms,	11	98,497

TABLE B.—*Showing comparative statement of non-fatal casualties for the years 1891 and 1892.*

	YEARS.	
	1891.	1892.
Explosions of fire-damp,	10	31
Explosions of blasting material,	5	....
Premature explosions,	5	4
Falls of coal and roof,	31	32
Crushed by mine cars,	18	17
Falling down shafts and slopes,	....	....
By coal flying from shots,	3	3
By machinery on surface,	2	2
Miscellaneous,	18	33
Totals,	92	122

TABLE C.—*Showing the quantity of coal produced and shipped during the years 1891 and 1892.*

	YEARS.	
	1891.	1892.
Quantity of coal produced in tons,	6,419,302$\frac{16}{20}$	6,382,346
Quantity of coal shipped in tons,	6,021,177$\frac{19}{20}$	5,630,850

TABLE D.—*Comparisons between the years 1891 and 1892.*

	YEARS.	
	1891.	1892.
Number of persons employed,	19,472	20,414
Tons of coal produced per life lost,	97,262	118,191
Number of tons of coal mined per each personal injury,	40,622	36,263
Ratio of employes per life lost,	292	378
Average number of tons of coal mined per employe,	330	312.6
Ratio of employes per each personal injury,	211$\frac{6}{10}$	130

TABLE E.—*Taking the death rate per thousand as a basis of comparison between the different companies and individual operators we have the following ratio for the year:*

	Number of employes.	Number of deaths.	Death rate per thousand.
Philadelphia and Reading Coal and Iron Company,	13,299	32	2+
Lehigh Valley Coal Company,	1,662	5	3+
Lehigh and Wilkes-Barre Coal Company,	1,078	3	2+
Lentz, Lilly & Co.,	1,119	2	1+
Coxe Brothers,	569	1	
Individual firms,	2,687	11	4+

COMPARATIVE STATEMENT OF FATAL AND NON-FATAL CASUALTIES AND THEIR CAUSES FOR FIVE YEARS.

CASUALTIES.	1888.	1889.	1890.	1891.	1892.	Total for five years.
Fatal.						
Explosions of fire-damp,	1	4	3	4	7	
Explosions of blasting material,	1		1	3		
Premature explosions,	3		2	6	4	
Falls of coal and roof,	22	32	22	28	21	
Crushed by mine cars,	8	6	14	7	9	
By machinery on surface,	2	2		2	2	
Falling down shafts and slopes,	1		6	3		
By coal flying from shots,		1	2	1		
Suffocated by gas,			2	4		
Miscellaneous,	6	13	12	12	11	
Totals of the respective years,	44	60	66	66	54	290
Non-fatal.						
Explosions of fire-damp,	20	14	18	10	31	
Explosions of blasting material,	5	2	4	5		
Premature explosions,	6		2	5	4	
Falls of coal and roof,	30	32	38	31	32	
Crushed by mine cars,	23	15	12	18	17	
By coal flying from shots,	6	1	1	3	3	
By machinery on surface,				2	2	
Failing down shafts and slopes,		2				
Explosions of boilers,						
Miscellaneous,	22	17	22	18	33	
Totals of the respective years,	112	83	97	92	122	506

YEARS.	Killed.	Injured.	Total.	Total number of employes.	Number of employes to each casualty.	Number of tons of coal mined to each fatal casualty.	Number of tons of coal mined to each non-fatal casualty.	Ratio of tons of coal to each casualty.	Number of tons of coal mined to each employe.	Total number of tons of coal mined.
1888,	44	112	156	15,652	100.3	122,163	47,992	34,456	343.4	5,375,185
1889,	60	83	143	15,916	111.3	87,007.7	58,810.4	34,134	306.6	5,220,464
1890,	66	97	163	19,289	118	94,491	64,293+	38,260	323.6	6,236,554
1891,	66	92	158	19,427	123	95,747	69,775	40,628½	329.6	6,419,302
1892,	54	122	176	20,414	116—	118,191	52,313	36,263+	312.6	6,382,346
Totals,	290	506	796	90,698	568	517,599	293,183	183,741	1,615.8	29,633,851
Average,	58	101⅕	159⅕	18,139⅗	113⅗	103,519⅘	58,636⅗	36,748⅕	323.16	5,926,770⅕

TOTAL NUMBER OF PERSONS EMPLOYED INSIDE AND OUTSIDE AND THE DESCRIPTION OF SERVICES.

Inside.

Inside foremen,	154	
Miners,	4,370	
Mine laborers,	2,728	
All other company men,	3,242	
Drivers and runners,	853	
Door-boys and helpers,	336	
Total inside,		11,683

Outside.

Outside foremen,	62	
Blacksmiths and carpenters,	479	
Engineers and firemen,	668	
Slate pickers,	4,350	
All other company men,	3,088	
Superintendents and clerks,	84	
Total outside,		8,731
Total inside and outside,		20,414

Average number of days worked by the Philadelphia and Reading Coal and Iron Company,	203
Average number of days worked by the Lehigh Valley Coal Company,	148
Average number of days worked by the Lehigh and Wilkes-Barre Coal Company,	261
Average number of days worked by Lentz, Lilly & Co.,	180
Average number of days worked by Coxe Brothers,	239
Average number of days worked by individual firms,	208 4/10

In addition to the 5,630,850 tons of coal shipped to market, there has been shipped from three washeries, 125,914 tons of coal taken from the culm bank, which is only a small quantity compared with what will be taken from our culm banks in the near future. At the close of the year Heber S Thompson, Esq., superintendent and engineer of the Girard estate, made a report on the quantity of coal deposited in the culm banks in connection with the collieries operated on the lands of the Girard estate, and he estimates that one bank alone contains 16.35 per cent. of the total shipments of coal to market from the first operation of the colliery. Of this coal 3.26 per cent. of the shipments is large coal, and 13 09 per cent. of the shipments is small coal.

GIRARD ESTATE—NOTES ON WASTE IN MINING AND PREPARING COAL AND ON THE PERCENTAGE OF COAL WON AT REPRESENTATIVE COLLIERIES ON THE GIRARD ESTATE.

[From the Report of Heber S. Thompson, Engineer Girard Estate, to the Directors of City Trusts, October 3, 1892.]

GIRARD ESTATE.
OFFICE OF ENGINEER AND AGENT
FOR SCHUYLKILL AND COLUMBIA COUNTIES.
POTTSVILLE, PA., *October* 3, 1892.

GENERAL LOUIS WAGNER, *Chairman Committee on the Girard Estate Without the City, Philadelphia, Pa.:*

DEAR SIR:

* * * * * * * * * *

Coal Wasted in Culm Banks—Hammond Colliery Culm Banks.

The measurements of banks and tests of weight of material and proportions of coal, slate and refuse, made in August, 1892, show the total contents of Hammond colliery culm banks (not including the rock banks, 550,922 cubic yards), to be	1,972,090 cubic yards.	
The coal and culm used in filling excavated spaces in the mines and carried away by the action of the elements is estimated to be 20 per cent., ...	394,418 cubic yards.	
Total coal, culm and refuse deposited, ...	2,366,508 cubic yards.	

Taking the weight of the culm banks, as determined by the tests annexed, at 1,941.75 pounds per cubic yard (or one ton per 1.15 cubic yards), the weight of the culm banks, including that used in filling and washed away, will be 2,057,833 tons.

The marketable coal in the culm banks appears by the accompanying tests to be 42 per cent. of the content, ...		864,290 tons,
Of which 19.94 per cent. is large coal (or such as will not go through a $\frac{5}{8}$-inch screen mesh), viz:	172,339 tons,	
And 80.06 per cent. is small coal (or such as will pass through a $\frac{5}{8}$-inch screen mesh and will be retained by a screen of $\frac{3}{16}$-inch mesh), viz:	091,951 tons,	
	———	864,290 tons.

Whether the lighter specific gravity of the coal has carried it, in being deposited, towards the edges of the banks, so as to show by these tests a greater proportion of coal and less of slate and heavier refuse near the surface than in the interior of the banks, can only be determined by the re-working of the banks. It is not likely that the percentage of the whole banks will vary much from that shown by the tests made.

The total shipment of coal from the Hammond colliery lease from 1863, the first year of its operation, to August, 1892, is 4,403,707 tons. The coal thrown away in its dirt banks has therefore been equivalent to 19.62 per cent. of its shipment to market (3.91 per cent. large and 15.71 per cent. small coal).

The coal in the Hammond dirt banks *on the ground now*, is (42 per cent. of $\frac{1,972,090}{1.15}$) 720,242 tons, equivalent to 16.35 per cent. of the total shipments of coal to market from the first operation of the colliery. Of this coal 3.26 per cent. of the shipments, 143,616 tons, is large coal and 13.09 per cent. of the shipments, 576,626 tons, is small coal.

The total shipment of coal from all the collieries on the Girard estate from their opening to January 1, 1892, has been 26,953,328 tons.

Taking the proportion of coal thrown aside as refuse by the other collieries to be the same as that thrown aside by the Hammond colliery, the coal in the culm banks on the Girard estate, or washed down by the elements and carried away by the streams has been 5,288,243 tons. The proportion washed away is greater at most of the other collieries than at Hammond colliery.

The coal in the Hammond colliery banks on the ground now, being 16.35 per cent. of the total shipments, it is safe to estimate that an amount equal to ten per cent. of the total shipments of coal from the Girard Estate collieries from their opening to the first of January, 1892, still remains on the ground in the culm banks, viz: 2,695,333 tons, which may be recovered by the reworking of the banks.

The tests of Hammond colliery culm banks made by Mr. John B. Granger, Mine Inspector of the Girard estate, August 15, 1892, are as follows, viz:

First sample; bank dumped in 1872.

Weight of a cubic foot,			71 lbs.
Containing of dirt,		30.5 lbs.	
slate,		7 lbs.	
large coal,	5 lbs.		
small coal,	28.5 lbs.		
		33.5 lbs.	
			71 lbs.

Second sample: bank dumped in 1877.

Weight of a cubic foot,		71.5 lbs.
Containing of dirt,	25.75 lbs.	
slate,	12.50 lbs.	
large coal,	5.25 lbs.	
small coal,	28 lbs.	
	33.25 lbs.	
		71.5 lbs.

Third sample; bank from old Conner breaker, which prepared only Buck mountain bed coal, deposited about 1885.

Weight per cubic foot,		70 lbs.
Containing of dirt,	19.75 lbs.	
slate,	15.75 lbs.	
large coal,	9.50 lbs.	
small coal,	25 lbs.	
	34.50 lbs.	
		70 lbs.

Fourth sample; bank dumped in 1888.

Weight per cubic foot,		70.5 lbs.
Containing of dirt,	20.75 lbs.	
slate,	17.50 lbs.	
large coal,	9.50 lbs.	
small coal,	22.75 lbs.	
	32.25 lbs.	
		70.5 lbs.

Fifth sample; bank dumped in 1891.

Weight per cubic foot,		80 lbs.
Containing of dirt,	24.50 lbs.	
slate,	36.75 lbs.	
large coal,	5 lbs.	
small coal,	13.75 lbs.	
	18.75 lbs.	
		80 lbs.

Sixth sample; bank from old McMichael breaker, deposited about 1866.

Weight per cubic foot,		68.5 lbs.
Containing of dirt,	29.5 lbs.	
slate,	9.5 lbs.	
large coal,	2 lbs.	
small coal,	27.5 lbs.	
	29.5 lbs.	
		68.5 lbs.

Average weight of culm bank per cubic foot, ... 71.9166 lbs.
Average weight of culm bank per cubic yard, ... 1,941.75 lbs.
Containing of dirt, ... 35 per cent.
slate, ... 23 per cent.
large coal, ... 8.38 per cent.
small coal, ... 33.62 per cent.
42 per cent.

The Growth in the Use of Small Sizes of Coal.

In coal leases on the Girard Estate granted prior to 1869, the smallest coal provided for under the size of stove coal was chestnut, which was taken to include all coal which would pass through a screen mesh one inch square. In the coal leases made in 1869, pea coal was first recognized and described as coal which would pass through a five-eighths of an inch screen mesh. This mesh is the pea-coal mesh of the present leases and under them all coal is classed as pea coal which will not be retained by a five-eighths of an inch mesh.

Pea coal first appears returned separately on the railroad toll reports of the Giratd Estate collieries, in April, 1867, by Girardville (now Hammond) colliery, Col. J. J. Conner, Lessee. Buckwheat coal first appears returned separately in August, 1878, by Hammond colliery, the Philadelphia and Reading Coal and Iron Company, Lessee.

The quantity and percentage of large and small sizes of coal shipped from the Girard Estate at five-year periods for the twenty years from 1871 to 1891, inclusive, is shown by the following table:

	LARGER THAN CHESTNUT.			CHESTNUT.			PEA.			BUCKWHEAT.		
	Tons.	Cwt.	Per cent.	Tons.	Cwt.	Per cent.	Tons.	Cwt.	Per cent.	Tons.	Cwt.	Per cent.
1891	899,604	15	62 64	227,717	08	15.86	170.992	02	11.91	137,622	14	9.59
1886	759,604	06	68.94	131,408	10	11.92	149,381	10	13.56	61,501	08	5.58
1881	1,073,869	15	75.63	159,687	04	11.24	158,711	03	11.18	27,722	17	1.95
1876	614,404	12	76.19	117,063	05	14.51	74,992	03	9.30			
1871	519,284	05	83.62	76,229	08	12.27	25,503	05	4.11			

The total shipment of coal from the Girard Estate in 1891 was 1,435,936$\frac{1}{2}$ tons. In addition to this there were 188,026 tons of coal (almost wholly small coal), 13.09 per cent. of the shipments, consumed in generating steam for the operation of the collieries, making the actual production for the year 1891, 1,623,962$\frac{1}{2}$ tons. Of this, 496,640$\frac{1}{2}$ tons, 30.58 per cent. of the production, was small coal, now saved but which prior to 1867 would have been thrown aside as refuse.

The pea and buckwheat coal shipped to market in 1891 from the collieries on the Girard Estate is shown by the above table to have been 21.5 per cent. of the total shipment.

The coal used for generating steam at the collieries, almost wholly small coal, was in 1891, 13.09 per cent. of their shipment to market. The proportion of coal used for steam purposes at the collieries increases with the depth and extent of the workings. In 1889 it was 10.04 per cent. of the shipments; in 1890, 12.33 per cent. and in 1891, 13.09 per cent. Six per cent. was formerly taken as a fair estimate.

The small coal wasted in 1866 would appear to have been that now used under boilers, say 6 per cent. of the shipments, and that now sent to market, 21.5 per cent. of the shipments, making together 27.5 per cent. of the shipments. The 27.5 per cent of the shipments including the small coal would be 37.93 per cent. of the shipments excluding the small coal.

The coal, therefore, thrown away on the refuse banks in 1866 was an amount equal to 37.93 per cent. of the shipment of that year.

The shipment from the Girard Estate collieries in 1866 was 424,376$\frac{12}{20}$ tons, and the small coal therefore thrown aside as refuse on the Girard Estate in that year appears to have been 160,966 tons, 37.93 per cent. of the shipment.

If these figures are applied to the total anthracite production of the State of Pennsylvania, and I think they may be with some approach to correctness, adding to the shipment of 1891, which was 40,448,336 tons, 13.09 per cent. for small coal used at the mines, ... 5,294,687 tons, will make the production of 1891 . . . . . 45,743,023 tons, of which 30.58 per cent. or 13,988,216 tons was small coal now saved and utilized, but which prior to 1867 would have been thrown aside as refuse.

By the same estimate the total small coal thrown away on the refuse banks in 1866 by the whole state was 37.93 per cent. of 12,703,882 tons, the shipment of that year, viz: 4,818,582 tons.

The total shipments of anthracite coal prior to 1867 were 150,272,359 tons, in which the waste in small coal thrown away, 37.93 per cent. was 56,998,305 tons.

The total shipments of anthracite coal up to January 1, 1892, were 779,605,897 tons.

If the percentage of coal thrown aside in refuse banks and washed away by the streams at all the collieries in the state, is taken to have been the same as shown by the tests at Hammond colliery, the total waste of coal in this way at the close of the year 1891, has been 19.62 per cent. of the shipments, viz: 152,958,677 tons, of which about one-half, or 10 per cent. of the total shipments, may be *on the ground now*, the balance having been carried away by the streams.

Loss of Coal in Pillars Left Unmined, Etc.

The loss of coal by the present methods of mining is still beyond what is reasonable, considering the intelligence and care bestowed upon mining and the experience of seventy years' operations. The loss in pillars

left unmined for the support of shafts, slopes, gangways and airways which are intended and expected to be taken out, is much greater than is usually counted upon, because a large production cannot be maintained at this stage of the work and the coal is sacrificed because it cannot be mined at a profit. And in the crush and settling of the roof rocks as an attempt is made to withdraw the coal, the loss is excessive, particularly in beds of great thickness. In such beds, and even in seams of moderate size, it is impossible to mine out the coal with any degree of thoroughness without filling the excavated spaces for the support of the roof, with material brought from the surface, which involves an expense which cannot be borne under present conditions.

After the mines have been worked and the strata over the coal have been broken and the excavated spaces closed with the fallen roof material, it is possible in many cases to open new gangways through territory already once worked and obtain as much coal as was obtained by the original mining operations. After the mines have been exhausted by the present methods of mining, they will undoubtedly be opened again and reworked.

I have thought proper to anticipate by this qualification the results shown by the following calculations of coal won at different collieries on the Girard Estate. The estimates of the per cent. of coal won in the territory worked over, given first below, were made by Mr. A. DW. Smith, Assistant Geologist of the state, for the Pennsylvania Coal Waste Commission, from bed sections and maps furnished him by me. The collieries, Girard, Hammond and Kehley's Run, were selected by me as representative of mining operations under different conditions.

Girard colliery operations are in a steep and narrow basin, with its synclinal axis six hundred and thirty-six (636) feet below the surface, its two Mammoth outcrops but eight hundred (800) feet apart, and its measures pitching south 57 degrees and north 68 degrees toward each other.

Hammond colliery operations are in measures pitching in one direction, favorably for thorough mining. Kehley's Run colliery measures lie favorably for mining, but have their run interfered with disadvantageously by the property lines of adjoining owners, and have a Mammoth bed attaining a thickness in some places of fifty feet, which is most unfavorable for thorough mining.

Hammond Colliery.—P. & R. C. & I. Co., Operators.

Estimate of the per cent. of coal won from the commencement of mining, 1863, to December 1, 1891, made from the mine maps and information furnished by Heber S. Thompson, engineer Girard Estate.

	Average dip.	Average thickness of bed.	Average thickness of coal	Area Worked.		Probable original content in tons.
				Surface acres.	Bed acres.	
Holmes	42°	13' 6"	10'	42.9	57.7	1,154,000
Mammoth Top	40	13'	10' 8"	41.5	54.2	1,156,628
Mammoth Bottom	35°	25'	18'	107.4	131.1	4,719,600
Buck Mountain	15°	11' 6"	8' 4"	306.2	317	5,283,122

Probable total original content of area, ... 12, 313, 350 tons.
Shipments 1863, to December 1, 1891, ... 4, 288, 157 tons.

The consumption of coal at this colliery to produce steam for the past three years has averaged 12.6 per cent. of the shipments. This has no doubt increased somewhat with the increased depth of the workings. Estimating that the average consumption at the colliery since the commencement of mining, 1863, has been 9 per cent. of the shipments, would make the total production to December 1, 1891, 4,674,091 tons, or 38 per cent. of the original contents.

Estimate of coal won, shipments and colliery consumption, 4,674,091 tons, or 38 per cent.

The first buckwheat coal was shipped about 1878. The total shipments up to this time had been 1,649,706 tons. Were we to allow 10 per cent. of this, or 164,971 tons for the buckwheat, had it been made during the whole time, the total production would have been 4,839,062 tons, or 39.3 per cent. of the original content.

Estimate of coal won if buckwheat had been made from commencement of mining, 39.3 per cent.

The areas as given here have been mined over and the pillars robbed. The coal remaining in the pillars yet to be robbed in the comparatively small portion of the mine now in active operation, has been considered in the above estimate.

The thickness of the beds and coal as given are taken as the probable average thickness for the whole area exploited, including any faulty or crushed areas encountered.

Specific gravity has been taken as 1.65, or 2,000 tons per acre per foot in thickness.

Ten specific gravity determinations, by McCreath, of coal in this neighborhood average 1.658.

From the following measurements and estimates made by Mr. Thompson, of Hammond colliery culm bank, I would draw the following inferences:

Mr. Thompson estimates that the Hammond colliery has produced since the commencement of mining to August 1, 1892, 2,057,833 tons of culm.

The shipments to August 1, 1892, have been . . . . . 4, 403, 707 tons.
Shipments to December 1, 1891, were . . . . . 4, 288, 157 tons.
Shipments between December 1, 1891, and August 1, 1892, were . . . . . 115, 550 tons.
Estimating the culm produced between December 1, 1891, and August 1, 1892, as 30 per cent. of the shipments, the production of culm in that time would have been . . . . . 34, 665 tons.
Hence the culm produced up to time of our estimate, December 1, 1891, was . . . . . 2, 023, 168 tons.

Mr. Thompson analyzes the culm bank as follows:

Dirt, ...	35 per cent.
Slate, ...	23 per cent.
Marketable coal, ...	42 per cent.
Total, ...	100 per cent.

Were we to subdivide the dirt, calling 25 per cent. powdered coal, and coal too small to market, and 10 per cent. refuse, the table would then show:

Coal and coal-dirt, ...	67 per cent.
Refuse, ...	33 per cent.
Total, ...	100 per cent.

Taking 67 per cent. of the culm produced, as coal and coal-dirt, would give us 1,355,523 tons.

The following general distribution of the coal lost and won at the colliery can then be made:

Estimated original coal, contents of area exploited, ...		12, 313, 350 tons.
Total production of coal, shipment and colliery consumption, ...	38 per cent.	4, 674, 091 tons.
Total coal and coal-dirt sent to culm bank,	11 per cent.	1, 355, 523 tons.
Total coal and coal-dirt left in mine . .	51 per cent.	6, 283, 736 tons.
Total, ...	100 per cent.	12, 313, 350 tons.

Mr. Thompson estimates that there are 720,242 tons of coal now (August 1, 1892), in the Hammond culm bank, which can be won by rescreening, say 715, 000 tons, December 1, 1891. If this were added to the production up to that time, it would make a total of 5,389,091 tons, or 43.8 per cent. of the original content.

Estimate of coal won, including coal to be won by rescreening culm banks, 43.8 per cent. or 5,389,091 tons.

Girard Colliery.—P. & R. C. & I. Co., Operators.

Estimate of the per cent. of coal won from the commencement of mining, 1864, to March 1, 1892, made from the mine maps and information furnished by Heber S. Thompson, engineer Girard Estate.

NAME OF BED.	Average dip.	Average thickness of bed.	Average thickness of coal.	AREA WORKED.		Probable original content in tons.
				Surface acres.	Bed acres.	
Mammoth	68° N.,	34	22'6"	40.8	108.9	9,031,500
	57° S.,			50	91.8	
Buck Mountain	57° S.,	14	9	6.7	12.3	221,400

Probable total original content of area, ... 9, 252, 900 tons.
Shipments 1864, to March 1, 1892, ... 1, 627, 491 tons.

The consumption of coal to produce steam at this colliery for the past three years has averaged 31 per cent. of the shipments. This, of course, has increased somewhat with the increased depth of the workings. Estimating that 20 per cent. has been the average colliery consumption since mining commenced, 1864, would make the total production to March 1, 1892, 1,952,989 tons or 21.1 per cent. of the original content.

Estimate of coal won, shipments and colliery consumption, 1,952,989 tons or 21.1 per cent.

The first buckwheat coal was shipped about 1878. The total shipments up to this time had been 732,797 tons. Were we to allow ten per cent. of this or 73,280 tons for buckwheat, had it been made during the whole time, the total production would be 2,026,269 tons or 21.9 per cent. of the original content.

Estimate of coal won if buckwheat had been made from commencement of mining, 21.9 per cent.

The area as given has been mined over and the pillars robbed. The coal remaining in the pillars yet to be robbed in the comparatively small portion of the mine now in active operation has been considered in the above estimate.

The thickness of the beds and coal as given are taken as the probable average thickness of the whole area exploited, including any faulty or crushed areas that may have been encountered.

The mining operations in the Mammoth at this colliery are now in the bottom of the narrow and deep basin. The gangways are in the underlying Skidmore bed, tunnels being driven at short intervals to the basin of the Mammoth.

The estimate of the total coal in the area worked by this bed includes that in the wedge at the axis of the basin, a large per cent. of which cannot be mined.

Specific gravity is taken as 1.65, or 2,000 tons per acre, per foot in thickness.

Ten specific gravity determinations by McCreath, of coal in this neighborhood average 1,658.

Kehley's Run Colliery.—Thomas Coal Company, Operators.

Estimate of the per cent. of coal won, made from the mine maps and information furnished by Heber S. Thompson, engineer Girard Estate This estimate embraces the time between the commencement of mining, 1865, to January 1, 1892.

NAME OF BED.	Average dip.	Average thickness of bed.	Average thickness of coal.	ACRE WORKED.		Probable original content in tons.
				Surface acres.	Bed acres.	
Mammoth,	35°	45'	30'	65.3	79.7	4,782,000
Skidmore,	35°	7'	3'10"	21	25.6	196,275
Seven Feet,	35°	7'	5'8"	53.9	65.8	745,777
Buck Mountain,	35	10'2"	7'	58.7	71.7	1,003,800

Probable total original content of area, ... 6, 727, 852 tons.
Shipments 1865, to January 1, 1892, ... 2, 266, 337 tons.

The consumption of coal at this colliery to produce steam for the last three years has averaged 6.39 per cent. of the shipments. This has no doubt increased somewhat with the increased depth of the workings. Estimating that the average consumption at the colliery since the commencement of mining, 1865, has been 5 per cent. of the shipments, would make the total production to January 1, 1892, 2,379,656 tons, or 35.4 per cent. of the original content.

Estimate of coal won, shipments and colliery consumption, 2,379,656 tons or 35.4 per cent.

The first buckwheat coal was shipped about 1878. The total shipments up to that time had been 895,604 tons. Were we to allow 10 per cent. of this, or 89,560 tons for buckwheat had it been made during the whole time, the total production to January 1, 1892, would be 2,469,216 tons, or 36.7 per cent. of the original content.

Estimate of coal won if buckwheat had been made from commencement of mining, 36.7 per cent.

The areas given have been mined over and the pillars robbed. The coal remaining in the pillars yet to be robbed in the comparatively small portion of the mine now in active operation has been considered in the above estimates.

The thickness of the beds and coal as given are taken as the probable average thickness for the whole area exploited, including any faulty or crushed areas encountered.

Specific gravity is taken as 1.65, or 2,000 tons per acre, per foot in thickness.

Ten specific gravity determinations by McCreath of coal in this neighborhood average 1.658.

The following estimates of the per cent. of coal won at these same

collieries made by myself, taking the weight of coal, as found by my tests, at one hundred (100) pounds per cubic foot, which is fifty-five (55) tons per foot per acre less than the weights used by Mr. Smith, come very close in their results to the estimates made by him:

Hammond Colliery.—P. & R. C. & I. Co., Lessee.

Estimate of the per cent. of coal won since the commencement of mining, 1863, to December 1, 1891:

NAME OF BED.	Average dip.	Average thickness of bed.	Average thickness of coal.	AREA WORKED.		Probable original content in tons.
				Surface acres.	Bed acres.	
Holmes	42	13'6"	9'8"	43.3	58.3	1,096,137
Mammoth	35	23'3"	17'1"	101	123.3	4,096,899
Top Split	40	12'2"	10'0"	42	54.8	1,065,860
Buck Mountain	15	11'0"	8'0"	302.5	313.1	4,871,836
Original content	....	.....	.....	.....	.....	11,130,732

Shipments from 1863 to December 1, 1891, ... 4,288,157 tons.
Add for consumption at colliery 9 per cent. of shipment, 385,934 tons.

Total production, ... 4,674,091 tons,

or 41.99 per cent. of original content.

If the coal in the culm banks now on the ground, 16.85 per cent. of the shipment, 722,554 tons, which may still be recovered, is added to the above total production, the total yield from the colliery will be 5,396,645 tons, or 48.49 per cent. of the original content.

Weight of coal is taken at 100 pounds per cubic foot.

Girard Colliery.—P. & R. C. & I. Co., Lessee.

Estimate of the per cent. of coal won since the commencement of mining, 1864, to March 1, 1892.

NAME OF BED.	Average dip.	Average thickness of bed.	Average thickness of coal.	AREA WORKED.		Probable original content in tons.
				Surface acres.	Bed acres.	
Mammoth	68 N., 57 S.,	. . . .	. . . .	38.4 54	102.5 99.1	8,822,136
		31'0"	22'6"			
Original content	....	.....	.....	.....	.....	8,822,136

Shipments from 1864 to March 1, 1892, ... 1,627,491 tons.
Add for consumption at colliery 20 per cent. of shipment, 325,498 tons.

Total production, ... 1,952,989 tons,

or 22-14 per cent. of original content.

If the coal in the culm banks now on the ground, 10 per cent. of the shipment, 162,749 tons, which may still be recovered, is added to the above total production, the total yield from the colliery will be 2,115,738 tons, or 23.98 per cent. of the original content.

The Holmes and Buck Mountain beds worked but slightly prior to March 1, 1892, are not taken into consideration in this estimate.

Weight of coal is taken at 100 pounds per cubic foot.

Kehley's Run Colliery.—Thomas Coal Company, Lessee.

Estimate of the per cent. of coal won since the commencement of mining, 1865, to January 1, 1892.

NAME OF BED.	Average dip.	Average thickness of bed.	Average thickness of coal.	AREA WORKED.		Probable original content in tons.
				Surface acres.	Bed acres.	
Mammoth, ...	°35	40'6"	27'0"	65.3	79.7	4,185,445
Sikdmore, ...	°35	6'3"	3'5"	22.3	27.2	180,755
Seven Feet, ...	°35	6'3"	5'3"	53.9	65.8	671,900
Buck Mountain, ...	°40	9'7"	6'7"	60.5	79.	1,011,562
Original content, ...	. . . .	. . . . .	. . . . .	. . . . .	. . . . .	6,049,662

Shipments from 1865 to January 1, 1892, ... 2,266,337 tons.
Add for consumption at colliery 5 per cent. of shipment, 113,317 tons.

Total production, ... 2,379,654 tons,

or 39.33 per cent of original content.

If the coal in the culm banks now on the ground, 16.85 per cent. of the shipment, 381,878 tons, which may still be recovered, is added to the above total production, the total yield from the colliery will be 2,761,532 tons, or 45.65 per cent. of the original content.

Weight of coal is taken at 100 pounds per cubic foot.

* * * * * * * * * *

Very respectfully yours,

HEBER S. THOMPSON,
Engineer Girard Estate.

EXAMINATION OF APPLICANTS FOR MINE FOREMAN'S CERTIFICATE.

The annual examination of applicants for mine foreman's certificates in the Sixth district was held in Pottsville, July, 1892.

The examiners were William Stein, mine Inspector; William H. Lewis, superintendent; Frank O. Boyle, miner and John Thurlby, miner.

The following are the names of the successful candidates:

Thomas J. Lannon, Jacksons, Mahanoy City, Pa.; Thomas Coan, St. Nicholas, Pa.; Thomas D. James of Wm. Penn, passed successfully in 1891; but his name was omitted.

TABLE I.—*Showing Location of Collieries in the Sixth Anthracite District.*

NAME OF COLLIERY.	Name of Operator.	Location—Schuylkill county.	Name of Superintendent.	Postoffice Address.
Boston Run.	Philadelphia and Reading Coal and Iron Co.,	St. Nicholas,	John Veith, Esq.,	Pottsville, Schuylkill county.
Bear Run.	do. do. do.	do.	do. do.	do. do.
Ellangowan.	do. do. do.	Maple Dale,	do. do.	do. do.
Elmwood.	do. do. do.	Mahanoy City,	do. do.	do. do.
Girard.	do. do. do.	Girardville,	do. do.	do. do.
Girard Mammoth	do. do. do.	Raven Run,	do. do.	do. do.
Gilberton.	do. do. do.	Gilberton.	do. do.	do. do.
Hammond.	do. do. do.	Girardville,	do. do.	do. do.
Indian Ridge.	do. do. do.	Shenandoah.	do. do.	do. do.
Knickerbocker.	do do. do.	Yatesville,	do. do.	do. do.
Kohinoor.	do. do. do.	Shenandoah.	do. do.	do. do.
Mahanoy City.	do. do. do.	Mahanoy City,	do. do.	do. do.
North Mahanoy.	do. do. do.	do.	do. do.	do. do.
St. Nicholas.	do. do. do.	St. Nicholas,	do. do.	do. do.
Suffolk.	do. do. do.	do.	do. do.	do. do.
Schuylkill.	do. do. do.	Mahanoy City,	do. do.	do. do.
Shenandoah City.	do. do. do.	Shenandoah City,	do. do.	do. do.
Turkey Run.	do. do. do.	do.	do. do.	do. do.
Tunnel Ridge.	do. do. do.	Mahanoy City,	do. do.	do. do.
West Bear Ridge.	do. do. do.	Mahanoy Plane,	do. do.	do. do.
East Bear Ridge.	do. do. do.	do.	do. do.	do. do.
Maple Hill.	do. do. do.	St. Nicholas,	do. do.	do. do.
Draper.	do. do. do.	Gilberton.	do. do.	do. do.
Mahanoy Jig House.	do. do. do.	Mahanoy City,	do. do.	do. do.
Packer No. 3.	Lehigh Valley Coal Company,	Brownsville,	Col. D. P. Brown,	Lost Creek, Schuylkill county.
Packer No. 4.	do. do.	Lost Creek,	do. do.	do. do.
Packer No. 2.	do. do.	do.	do. do.	do. do.
Packer No. 5.	do. do.	Rappahannock.	do. do.	do. do.
Honeybrook No. 4.	Lehigh and Wilkes-Barre Coal Company,	Audenreid,	David R. Roberts, Esq.,	Audenreid, Pa.
Honeybrook No. 5.	do. do. do.	do.	do. do.	do.
Park No. 2.	Lentz, Lilly & Co.,	Park Place,	Edward Reese, Esq.,	Centralia, Columbia county.
Springdale.	do. do.	do.	do. do.	do. do.
William Penn.	William Penn Coal Company,	Shaft.	William H. Lewis, Esq.,	Shaft, Pa.
Silver Brook No. 1.	Silver Brook Coal Company,	Silver Brook,	J. S. Wentz, Esq.,	Mauch Chunck, Pa.
Silver Brook No. 2.	do. do.	do.	do.	do.
Buck Mountain.	Mill Creek Coal Company.	Buck Mountain.	T. D. Jones, Esq.,	Hazleton, Luzerne county.
Kehley's Run.	Thomas Coal Company.	Shenandoah.	Thomas Baird, Esq.,	Shenandoah.
Glendon.	J. C. Haydon & Co.,	Mahanoy City.	William P. Daniels, Esq.,	Mahanoy City.
Primrose.	Nevills and Company.	do.	James Wynn, Esq.,	do.
Lawrence.	Moore and Burchill.	Mahanoy Plane.	George Burchill, Esq.,	Frackville, Pa.
Cambridge.	Cambridge Coal Company.	Shenandoah.	William James, Esq.,	Shenandoah.
Onelda.	Coxe Bros..	Nelson City,	E. Kudlich, Esq..	Drifton, Pa.

TABLE NO. 2.—*Giving the total number of tons of coal mined in each colliery, number of days worked, number of employes, number of persons killed and injured, number of keys of powder used, etc., in the Sixth Anthracite District for the year ending December 31, 1892.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Pounds of dynamite used.
Boston Run,	St. Nicholas,	148,872.09	140,872.09	220.25	470	2	2	3,145	26	44	. . .	9,087½
Bear Run,	do.	155,433.16	148,433.16	180.45	627	4	3	5,994	26	62	. . .	7,761
Ellangowan,	Maple Dale,	319,398.17	304,398.17	209.75	972	4	5	7,067	36	99	. . .	4,210
Elmwood,	Mahanoy City,	99,527.12	94,527.12	188.7	437	. . .	5	2,527	16	39	. . .	1,782
Girard,	Girardville,	128,673.01	118,673.01	201 95	382	. . .	3	1,277	39	43	. . .	7,310
Girard Mammoth,	Raven Run,	105,680.14	95,680.14	207.85	287	. . .	2	2,043	25	44	. . .	2,059½
Gilberton,	Gilberton,	173,970.13	163,970.13	210.95	674	1	1	4,041	48	44	. . .	11,450
Hammond,	Girardville,	180,647.02	168,647.02	204.9	585	3	4	4,853	36	48	. . .	7,107
Indian Ridge,	Shenandoah City,	200,375.12	184,375.12	204.9	784	1	2	5,684	24	75	. . .	3,262½
Knickerbecker,	Yatesville,	184,834.08	172,834.08	214.8	708	2	4	4,345	30	41	. . .	14,126
Kohinoor,	Shenandoah City,	132,452.01	124,452.01	178.3	485	. . .	5	4,488	33	43	. . .	1,228
Mahanoy City,	Mahanoy City,	128,851.12	116,851.12	213.2	486	1	. . .	3,125	30	47	. . .	2,059
North Mahanoy,	do.	166,957	156,957	215.9	626	2	. . .	5,113	16	47	. . .	1,017
St. Nicholas,	St. Nicholas,	165,827.13	155,827.13	219.65	607	. . .	1	3,221	38	35	. . .	5,557
Suffolk,	do.	245,358.04	235,358.04	209.05	833	1	2	7,556	18	65	. . .	4,310
Schuylkill,	Mahanoy City,	82,026.12	78,026.12	198.25	359	1	2	2,401	20	29	. . .	498½
Shenandoah City,	Shenandoah City,	193,920.19	173,920.19	209.25	652	3	2	4,512	24	73	. . .	3,957½
Turkey Run,	do.	80,811.03	76,811.03	186.85	356	2	. . .	1,497	14	40	. . .	4,197
Tunnel Ridge,	Mahanoy City,	160,511	153,511	219.5	537	. . .	1	7,023	24	43	. . .	2,179½
West Bear Ridge,	Mahanoy Plane,	248,082.08	235,082.08	201.35	842	3	6	3,230	43	65	. . .	14,159
West Shenandoah,	Shenandoah,	130,831	123,831	212.45	407	1	2	2,945	16	43	. . .	1,325
East Bear Ridge,	Mahanoy Plane,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Maple,	St. Nicholas,	118,887.06	113,887.06	158.05	730	1	4	4,127	22	33	. . .	51,500
Draper,	Gilberton,	149,079.09	142,079.09	170	453	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Mahanoy Jig House,	Mahanoy City,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Packer No. 2,	Lost Creek,	158,879.09	145,364.09	209.8	342	1	7	2,953	22	28	1	9,808
Packer No. 3,	Brownsville,	194,531.13	182,837.13	205.9	519	3	5	3,578	34	34	2	3,271
Packer No. 4,	Lost Creek,	65,893.16	55,389.16	89 2	310	1	1	1,409	30	29	2	4,588
Packer No. 5,	Rappahanock,	67,836.19	59,219.19	87.6	491	. . .	1	1,125	32	34	2	6,967

Honeybrook No. 4,	Audenreid,	210,945.16	185,644.18	260	522	1	8	5,440	37	73	1	5,428
Honeybrook No. 5,	do.	278,605.05	253,585.05	262	556	2	13	4,589	49	45	4	7,364
Park No. 2,	Park Place,	284,315.04	231,827.04	177.8	691	1	1	6,900	43	65	. . .	750
Springdale,	do.	158,713.15	103,718.15	183.3	428	1	6	2,085	31	45	. . .	2,750
William Penn,	Shaft,	235,573	218,364	222	628	1	4	3,995	46	62	. . .	5,150
Silver Brook No. 1,	Silver Brook,	145,000	132,111.16	235	448	. . .	1	2,760	30	40	. . .	6,036
Silver Brook No. 2,	do.	26,000	23,880.10	83.3	203	. . .	. . .	628	5	5	. . .	1,388
Buck Mountain,	Buck Mountain,	161,673.14	150,723.14	195.2	378	1	. . .	4,295	24	41	. . .	3,070
Kehley's Run,	Shenandoah,	112,309.08	109,467.11	240.75	310	1	5	4,670	24	27	. . .	5,350
Glendon,	Mahanoy City,	81,606.	71,606.	161.8	302	5	2	1,476	24	44	. . .	4,300
Primrose,	do.	89,598.03	81,236.03	202.5	272	2	4	3,880	22	26	. . .	3,400
Lawrence	Mahanoy Plane,	17,517.12	14,282.14	194.25	200	1	1	50	14	22	. . .	5,000
Cambridge,	Shenandoah City,	18,741.15	8,450.16	230.8	61	. . .	1	625	3	7	. . .	. . .
Oneida,	Nelson City,	188,161.06	160,724.16	239	569	1	3	4,145	31	75	. . .	6,553
Furnace,	Gilberton,	35,523	33,523.17	246	79	. . .	1	1,206	2	5	. . .	. . .
Total,		6,287,306.06	5,730,880.07	. . .	20,608	54	120	145,906	1,137	1,748	12	241,8854

TABLE NO. 3.—*Showing the number of each class of employes at each colliery in the Sixth Anthracite District during the year 1892.*

NAMES OF COLLIERIES.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand total inside and outside.
	Inside foremen.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door-boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All other company men.	Superintendents, bookkeepers and clerks.	Total outside.	
Boston Run	6	94	20	85	15	6	229	2	17	17	123	81	1	241	470
Bear Run	4	75	139	104	20	8	350	2	17	12	151	93	2	277	627
Ellangowan	11	225	123	95	41	15	510	2	30	21	240	166	3	462	972
Elmwood	4	117	17	78	16	1	223	1	6	10	110	76	1	204	427
Girard	4	66	29	97	13	16	219	1	6	23	79	52	2	163	382
Girard Mammoth	2	48	15	56	14	5	140	1	5	14	77	49	1	147	287
Gilberton	5	121	111	124	13	7	381	2	7	20	163	99	2	293	674
Hammond	6	126	47	140	17	10	346	2	8	23	123	81	2	239	585
Indian Ridge	8	182	132	87	47	13	469	2	24	29	179	79	2	315	784
Knickerbocker	4	106	80	77	20	3	290	2	28	18	238	130	2	418	708
Kohinoor	6	145	82	46	27	8	314	2	6	19	86	56	2	171	485
Mahanoy City	4	95	66	76	31	9	281	2	4	15	127	55	2	205	486
North Mahanoy	4	115	107	73	33	13	345	1	10	10	182	76	2	281	626
St. Nicholas	5	97	115	124	21	15	377	. .	8	13	114	94	1	230	607
Suffolk	5	207	141	115	22	8	498	2	25	19	155	131	3	335	833
Schuylkill	3	86	42	58	16	14	219	1	5	9	79	45	1	140	359
Shenandoah City	6	110	61	138	32	18	365	2	8	17	162	96	2	287	652
Turkey Run	3	48	91	49	13	2	206	2	20	7	50	69	2	150	356
Tunnel Ridge	4	129	44	120	26	9	332	1	17	12	109	64	2	205	537
West Bear Ridge	8	169	61	184	31	19	472	2	21	30	177	138	2	370	842
East Bear Ridge															
Maple Hill	4	130	140	147	9	9	439	1	38	16	153	81	2	291	730
Draper	7	71	16	146	20	6	266	1	6	21	96	61	2	187	453
Mahanoy Jig House	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Packer No. 2	1	108	21	53	10	11	204	1	6	10	48	72	1	138	342
Packer No. 3	1	150	97	80	13	5	346	1	8	18	76	68	2	173	519
Packer No. 4	1	94	24	65	18	6	208	1	6	11	52	31	1	102	310
Packer No. 5	2	129	64	86	18	3	302	1	6	15	84	81	2	189	491
Park No. 2	2	179	131	76	48	2	438	1	14	24	150	61	2	253	691
Springdale	1	96	44	57	29	12	239	1	9	20	98	58	3	189	428
William Penn	3	140	130	62	20	15	370	3	16	18	92	123	6	258	628

Silver Brook No. 1,	1	73	70	30	41	10	225	3	8	17	110	80	4	223	448
Silver Brook No. 2,	1	35	16	30	2	3	87	1	9	5	60	42	...	116	203
Buck Mountain,	1	133	55	14	15	4	222	1	7	13	91	41	3	156	378
Kehley's Run,	7	78	73	8	9	5	180	1	7	12	48	60	2	130	310
Glendon,	1	50	26	54	13	6	150	1	4	10	90	44	3	152	302
Primrose,	2	76	22	36	9	7	152	3	5	7	43	59	3	120	272
Lawrence,	1	17	37	11	10	1	75	1	3	27	48	45	1	125	200
Cambridge,	1	26	7	1	3	1	39	1	1	1	10	9	...	22	61
Oneida,	5	131	73	58	29	12	308	3	19	25	122	90	2	261	569
West Shenandoah,	5	104	18	17	13	5	222	2	6	13	93	69	2	185	407
Honeybrook No. 4,	2	104	94	122	35	23	380	1	7	17	69	48	2	144	524
Honeybrook No. 5,	2	68	30	153	17	7	277	1	20	29	102	123	2	277	554
Furnace,	1	17	17	2	4	....	41	...	2	1	21	12	2	38	79
Total,	154	4,141	2,868	3,234	853	346	10,746	62	478	668	4,480	3,058	84	8,862	19,308

TABLE 4.—*List of fatal accidents which occurred in the mines of the Sixth Anthracite Mining District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON INJURED.	Age.	Married or single.	No. of orphans.	Name of Colliery.	Location (All in Schuylkill county).	Date of investigation.	Nature and Cause of Accident in Brief.
Jan. 4.	Michael Muldoshus,	28	S.	..	Primrose,	Mahanoy,	Jan. 5.	Polander, Miner; burned by an explosion of gas and died in hospital on January 14. He with his butty went past the danger mark to the face of their breast, struck a match and fired the gas.
5.	William H. Williams,	38	M.	3	Park No. 3 slope,	Park Place,	5.	American, fire-boss; car-hitching broke while being hoisted up slope; car ran back and struck Williams, who was walking up the slope.
18.	John Webb,	47	M.	7	Glendon,	Mahanoy City,	18.	English, Miner; burned by an explosion of gas; died in hospital on the 25th.
18.	William Harley,	37	M.	..	Glendon,	Mahanoy City,	18.	English, miner; burned by an explosion of gas; died January 21.
22.	Alex. Bobin,	28	S.	..	Packer No. 2,	Lost Creek,	23.	Polish, laborer; injured by an explosion of gas; died January 29.
22.	Peter Pangrass,	34	M.	2	Packer No. 3,	Brownsville,	23.	Polish, miner; killed by a fall of coal.
26.	John Samanage,	23	S.	..	North Mahanoy,	Mahanoy City,	27.	Polish, laborer; run over by cars.
27.	Felix Patrick,	26	S.	..	Packer No. 3,	Brownsville,	27.	Polish, miner; killed by a fall of coal.
28.	William Yarkis,	31	M.	1	Schuylkill,	Mahanoy City,	28.	Polish, miner; killed by rock measures falling between Mammoth and Skidmore veins.
Feb. 4.	Joe Gelinsky,	39	M.	6	Mahanoy City,	do.	Feb. 4.	Hungarian, miner; injured by a blast while going back to the shot too soon; he died on February 6.
6.	Albert Smith,	18	S.	..	East Bear Ridge,	Mahanoy Plane,	7.	American, pusher; killed by being caught between car and shute.
9.	John Burns,	34	M.	1	Bear Run,	St. Nicholas,	10.	Irish, miner; killed by a fall of top coal under which he was drilling.
18.	Joseph Skates,	40	M.	4	Packer No. 3,	Brownsville,	19.	Polish, miner; killed by an explosion of gas caused by his unscrewing the ganze of lamp.
19.	William Solvinsk,	28	S.	..	Knickerbocker	Yatesville,	19.	Polish, miner; killed by a fall of coal.
20.	Joseph Starr,	30	S.	..	Bear Run,	St. Nicholas,	21.	Polish, miner; killed by a fall of coal.
20.	Joseph Walnscavige,	24	S.	..	Packer No. 3,	Brownsville,	21.	Polish, miner; fatally burned by an explosion of gas; died in Miners' Hospital on February 24.
Mar. 3.	Martin McDonald,	35	S.	..	Springdale,	Park Place,	March 4.	Miner, killed by a fall of coal.
15.	John Postory,	35	M.	..	Ellangowan,	Mapledale,	16.	Hungarian slate-picker; injured and died same day. Carpenters were building a new addition to the breaker and one of them put up a post but did not secure it with rails or otherwise; and it fell on Pastory fracturing his skull.

	23.	Reuben Handsman,	23	S.		North Mahanoy,	Mahanoy City,		24,	Polish, laborer; run over by a mine car at bottom of surface plane.
April	7.	Thomas M. Williams,	41	M.	4	Glendon,	do.	April	9,	Miner; killed by fall of coal.
	7,	John H. Phillips,	28	M.		Glendon,	do.		9,	Miner; burned by an explosoin of gas; died April 10.
June	9.	Joseph Shilinski,	26	S.		Shenandoah City,	Shenandoah,		9.	Polish, laborer; injured by a premature blast and died on June 12.
	9,	William Shearlock,	25	S.		Turkey Run,	do.		10,	Laborer; killed by a fall of rock while loading a buggy.
July	13,	Rober Yestes,	23	S.		East Bear Ridge,	Mahanoy Plane,	July	15.	Polish laborer; killed by fall of coal.
	13.	Patrick Tarpey,	38	M.	4	Maple Hill,	St. Nicholas,		15,	Miner; killed by a fall of slate. Was going up to work in the morning when the accident occurred.
	19,	John Freel,	30	S.		Hammond,	Girardville,		21,	Starter; injured by being squeezed between coal and side of chute. Died August 23.
	25.	Andrew Lukas,	17	S.		Onelda,	Nellson City,		27,	Hungarian; Roller-tender. He was putting on a belt and was drawn into the rolls.
Aug.	1,	Larry Rusbrock,				Boston Run,	St. Nicholas,	Aug.	2.	Laborer; killed by being caught between cars at bottom of breaker plane.
	2,	Mike Broski,	40	M.	4	Shenandoah City,	Shenandoah,		2.	Miner; killed by a fall of "clod."
	2.	Trofell Pochinski,	30	M.	3	Knickerbocker,	Gatesville,		2.	Loader; killed by being squeezed between cars.
	27,	Louis Ringhelser,	25	M.	2	Kehley's Run,	Shenandoah,		28,	Miner; killed by a lump of loose coal rolling down on him.
Sept.	7,	Joe Wasinnick,	34	S.		Indian Ridge,	do.	Sept.	8,	Polish laborer; killed by a fall of rock.
	8,	William Quapp,	41	M.	6	Shenandoah City,	do.		8,	Killed by the neighboring miners, George and Thomas Shields, firing a shot before first giving Quapp notice.
	9,	Joe Cosofskey,	35	M.	5	Turkey Run,	do.		10,	Laborer; killed by a fall of top rock.
	12,	Edward Boyle,	48	M.	5	Honeybrook No. 4,	Audenreid,		13,	Miner; injured by a fall of "bone," and died on September 16.
	23.	Mike Tomalavidge,	20	S.		Suffolk,	St. Nicholas,		24,	Laborer; fatally injured between car and platform. He was walking along the gangway, having quit work and was passing a trip of cars on the high side, when the cars started and he was caught as stated above.
Oct.	4,	William Thornton,	22	S.		Hammond,	Girardville,	Oct.	5,	Driver; instantly killed. The topmen ran two empty cars down without putting on the chain.
	11,	Jeremiah Burns,	15	S.		Ellangowan,	Maple Dale,		12,	Jig boy; killed by being caught between one of the wheels and jig box. He went through a narrow passage instead of going around the back of the machinery; it is supposed he was going to turn the water on or off.
	17,	Larry Burns,	50	W.	3	Gilberton,	Gilberton,		18,	Miner; killed by a premature blast.
	28,	Michael McCoog,	17	S.		Boston Run,	St. Nicholas,		31,	Driver; squeezed between cars and tunnel brattice. Died October 29.
	31,	Leo Smith,	28	M.	2	West Shenandoah,	Shenandoah,		31,	Miner; killed by a fall of top rock. He had fired a shot which knocked a prop out; he prepared to stand the prop again when the rock fell.
Nov.	2,	John Jones,	24	S.		William Penn,	Shaft P. O.,	Nov.	3,	Miner; killed by fall of coal. Was barring down top coal when he was killed by the side coal slipping out.
	7,	Mich. Bosldar,	37	M.	3	Honeybrook No. 5,	Audenreld,		8,	Laborer; killed by the breaking down of trestling in connection with the stripping.
	10,	Frederick Hahm,	17	S.		Lawrence,	Mahanoy Plane,		11,	Driver; chute rushed on him and he was caught by a lump of coal and gangway timber. He had no business to be where he was.
	15.	John Joyce,	18	S.		Bear Ridge,	do.		17.	Driver; fell from his mule while going to stable, and was dragged along the road until life was almost extinct.

TABLE NO. 4.—*Continued.*

Date of accident.	NAME OF PERSON INJURED.	Age.	Married or single.	No. of orphans.	Name of Colliery.	Location (All in Schuylkill County).	Date of investigation.	Nature and Cause of Accident in Brief.
Nov. 17.	Anthony Lobutus.	30	. .	. .	Bear Run.	St. Nicholas, ...	Nov. 17.	Laborer; killed by a piece of slate rolling down the "gob" on him.
25.	Joseph Sogle.	19	S.	. .	do.	do. . . .	26.	Laborer; killed by a fall of coal.
29.	Edward Jennings.	23	S.	. .	Ellangowan, ...	Maple Dale. . . .	30.	Car runner; injured by a car breaking loose while being hoisted up the slope; died in a few hours afterwards.
29.	George Barber.	47	M.	4	Packer No. 4.	Lost Creek.	30.	Miner; killed by fall of coal.
Dec. 5.	Steve Listic.	35	M.	1	Buck Mountain, ...	Mahanoy City. . .	Dec. 7.	Miner; injured by a shot; died same evening.
11.	Edward Corrigan.	48	W.	3	Ellangowan, ...	Maple Dale. . . .	15.	Miner; head and face cut by a fall of coal; died January 9, in Miners' Hospital; he did not attend to the wounds and erysipelas set in.
15.	William Ashman.	52	M.	7	Glendon.	Mahanoy City. . .	17.	Miner; injured by a fall of coal; died on the 17th.
21.	Bernard O'Donald.	27	S.	. .	Hammond.	Girardville. . . .	22.	Starter; killed by a premature blast.
28.	Joe Bilkivitch.	25	S.	. .	Primrose.	Mahanoy City. . .	29.	Loader; injured by being run over by cars and died six hours after the accident.
29.	Martin Skunsoda.	30	. .	. .	Honeybrook No. 5. . .	Audenreid, ...	30.	Track laborer; killed on railroad.

TABLE NO. 5.—*List of non-fatal accidents which occurred in the mines of the Sixth Anthracite District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON INJURED.	Age.	Married.	No. of children.	Name of Colliery.	Location (All in Schuylkill county).	Date of investigation.	Nature and Cause of Accident in Brief.
Jan. 1,	Casper Ravritch,	34	M.	2	Primrose,	Mahanoy City	Jan. 5,	Pole miner; burned on face and hands by explosion of gas; he lit a match at face of breast.
8,	Joseph Paplertis,	27	S.	..	Primrose,	do.	9,	Pole miner; body squeezed between cars and chute platform.
12,	Andrew Hyland,	15	..	..	Suffolk,	St. Nicholas,	12,	American driver; right leg was cut off while attempting to jump on cars;
12,	Anthony McAndrew,	48	M.	..	East Bear Ridge,	Mahanoy Plane,	.....	Irish miner; burned on face and hands by an explosion of gas.
13,	Steve Kropie,	39	M.	3	Honeybrook No. 5,	Audenreid,	.....	Hungarian laborer; door of car fell on him, bruising his head and face.
15,	Peter Servitis,	34	M.	2	St. Nicholas,	St. Nicholas,	15,	Pole laborer; bruised about back by a fall of coal in gangway.
19,	Tim Driscoll,	..	..	..	Girard,	Girardville,	19,	American, miner; bruised about body and arms by a fall of coal.
Feb. 18,	Anthony Wasel,	31	M.	2	Packer No. 3,	Brownsville,	.....	Pole, miner; burned by an explosion of gas; he used his naked lamp.
19,	Charles Fleig,	21	S.	..	Gilberton,	Gilberton,	Feb. 19,	American, laborer; squeezed between rock dumper and transit car.
20,	Napoleon Asarat,	28	S.	..	Indian Ridge,	Shenandoah,	20,	Pole, laborer; squeezed by rush of loose coal in breast.
25,	Stiney Stuberness,	25	M.	..	Bear Run,	St. Nicholas,	26,	Pole, miner; squeezed and bruised by a fall of coal.
26,	Geo. Wolfgang,	..	..	..	Hammond,	Girardville,	.....	American, carpenter; three ribs broken by falling from scaffold at breaker.
26,	Ernest Heclclumter,	..	..	..	Boston Run,	St. Nicholas,	.....	American, miner; leg fractured by a fall of coal.
Mar. 3,	Michael William,	..	..	..	do.	do.	.....	Burned on face and hands; he went up a breast with a naked lamp; he is the fire-boss at this colliery.
5,	Charles Brosasko,	38	M.	4	Elmwood,	Mahanoy City,	Mar. 5,	French, miner; burned by an explosion of gas.
5,	Frank Strouse,	28	S.	..	do.	do.	5,	German, laborer; burned by an explosion of gas.
5,	Charles Armonavage,	29	S.	..	do.	do.	5,	Pole, laborer; burned by an explosion of gas.
5,	Henry Kline,	15	..	..	do.	do.	5,	German, fan-boy; burned by an explosion of gas.
10,	Frank Bauer,	..	..	..	Mahanoy Transfer,	do.	11,	Hand crushed between hook and drawbar, while coupling cars.
12,	John Carly,	30	M.	1	Packer No. 2,	Lost Creek,	13,	Irish, miner; face lacerated; his "butty" fired a shot without giving warning.

TABLE NO. 5.—*Continued.*

Date of accident.	NAME OF PERSON INJURED.	Age.	Married.	No. of children.	Name of Colliery.	Location—(All in Schuylkill county).	Date of investigation.	Nature and Cause of Accident in Brief.
Mar. 14.	Thomas Bowen,	16	. .	. .	Primrose,	Mahanoy City,	Mar. 16,	Welsh, driver; arm fractured; slipped and fell under cars.
28,	Joseph Morltes,	. .	. .	. .	Springdale,	do.	28,	Poles, miners; both slightly burned by an explosion of gas.
28.	Stiney Semnight,	. .	. .	. .				
31,	John Lucas,	27	M.	1	Honey Brook No. 4,	Audenreid,	April 1.	Pole, miner; burned on face and hands by an explosion of gas.
April 1.	John August,	36	M.	. .	Packer No. 2,	Lost Creek,	4,	Pole, miner; slightly burned by an explosion of gas.
5.	Joseph Lavelle,	. .	. .	. .	Hammond,	Girardville,	8,	Irish, miner; slightly burned by an explosion of gas.
8.	John Curry,	. .	. .	. .	Maple Hill,	St. Nicholas,	8,	American, driver; squeezed between platform and car.
25.	Mart Myolavage,	. .	. .	. .	Kohinoor,	Shenandoah,	28,	Pole, laborer; leg fractured by a fall of coal.
25.	Andy Yitcufsky,	41	M.	. .	Packer No. 3,	Brownsville,	28,	Pole, laborer; leg and arm fractured; coal rushed down breast driving him off platform on to gangway.
28.	Condy Gillesple,	32	S.	. .	Honeybrook No. 4,	Audenreid,	. . . . .	Irish, laborer; hips squeezed between "rib" and car.
28,	Josep Marltes,	. .	. .	. .	Springdale,	Mahanoy City,	29,	Pole, miner; slightly burned by an explosion of gas.
28.	Stiney Semright,	. .	. .	. .	do.	do.	29,	Pole, miner; slightly burned by an explosion of gas.
May 2.	Adan Stobenski,	27	S.	. .	Ellangowan,	Maple Dale,	3.	Pole, miner; slightly burned by an explosion of gas.
2.	Charles Yardis,	35	S.	. .	Packer No. 2,	Lost Creek,	. . . . .	Pole, miner; leg fractured by a fall of coal.
2.	John Bolunock,	. .	. .	. .	Ellangowan,	Maple Dale,	3.	Pole, laborer; slightly burned by an explosion of gas.
2.	Pat Gaughan,	. .	. .	. .	Bear Ridge,	Mahanoy Plane,	. . . . .	Irish, laborer; struck by a brake stick; breaking several of his ribs.
2.	Stiney Aleck,	25	S.	. .	Kohinoor,	Shenandoah,	4,	Pole, laborer; part of foot amputated from being injured by a fall of slate.
3.	Peter Cuff,	18	. .	. .	West Shenandoah,	do.	. . . . .	Driver; two fingers cut off by being struck by a piece of rock.
4.	Wm. Taylor,	. .	. .	. .	Hammond,	Girardville,	. . . . .	American; collar bone broken by a fall of coal.
4,	Paul Petrulus,	. .	. .	. .	Maple Hill,	St. Nicholas,	7,	Pole, miner; head and back injured by a fall of coal.
7,	John Lawendick,	30	M.	. .	Packer No. 2,	Lost Creek,	. . . . .	Pole, miner; back bruised by a fall of coal.
8,	Aud McOlick,	. .	. .	. .	Knickerbocker,	Yatesville,	. . . . .	Pole, laborer; ribs fractured by falling on guard rail.
12.	Anthony Burke,	. .	. .	. .	Indian Ridge,	Shenandoah,	. . . . .	Roadman; head injured by being struck by an empty car.
13,	Pat Reddy,	. .	. .	. .	Kohinoor,	do.	14.	Miner; leg fractured by a fall of coal.
. . . . .	William E. Burke,	. .	. .	. .	Park No. 2,	Park Place,	18,	Miner; both feet seriously injured by a fall of rock; he is working again.
18	Wm. Richardson,	19	S.	. .	Springdale,	Mahanoy City,	19,	Driver; face lacerated; while coming around curve on trestle the car jumped the track and he was precipitated to the ground a distance of 15

	18.	Martin Ushensky,	28	S.	..	Packer No. 3,	Brownsville,	18.	Pole, miner; slightly burned by an explosion of gas.
	18.	Wm. Volanty,	25	S.	..	do.	do.	18.	Pole, miner; slightly burned by an explosion of gas.
	19.	Joe Gyefaky,	28	M.	1	do.	do.		Pole, laborer; head and neck injured by a fall of coal.
	24.	Joe Phillips,	34	S.	..	do.	do.	31.	Pole, miner; slightly burned at same time as Coolski.
	24.	Joe Methus,	26	S.	..	Kehley's Run,	Shenandoah,		Pole, laborer; leg fractured; he drew a piece of coal against his leg.
	27.	Stiney Coolski,	28	S.	..	Boston Run,	St. Nicholas,		Pole, miner; slightly burned by an explosion of gas. went to face of breast with a safety lamp in his hand and naked lamp burning on his head.
	31.	Jos. Flynn,	..	..	..	Bear Ridge,	Mahanoy Plane,		Driver; leg slightly bruised between two ears.
June	6.	Joe Ciski,	..	..	..	Shenandoah City,	Shenandoah,		Pole; back, face and leg injured; fell while trying to turn tongues on tip.
	9.	Con O. Donald,	..	..	..	Schuylkill,	Mahanoy City,	June 10.	Irish, laborer; jaw bone broken by a fall of slate.
	10.	Ed. Gibbons,	..	..	..	Girard,	Girardville,	10.	Irish, loader; hand cut by a fall of slate.
	14.	John Cosine,	39	M.	1	Kehley's Run,	Shenandoah,	16.	Pole, miner; he was firing two shots together and failed to reach the safety heading which resulted in his face and body being badly bruised; he is working again.
	17.	William Daily,	29	S.	..	Packer No. 3,	Brownsville,	18.	Miner; face and neck burned by an explosion of gas; after firing a shot, he returned to work without his safety lamp.
	27.	Michael McDonald,	..	..	..	Knickerbocker,	Yatesville,	28.	Miner; face and hands burned by an explosion of gas.
	28.	William Minklow,	..	..	..	Bear Ridge,	Mahanoy Plane,	29.	Pole, slate picker; leg crushed; caught by elevator.
	29.	John Chernuftsky,	26	S.	..	Kehley's Run,	Shenandoah,		Pole, laborer; head slightly cut by a piece of coal falling on him.
	30.	William Brennan,	..	..	..	Ellangowan,	Maple Dale,	July 1.	Irish, miner; burned about the body by an explosion of gas.
July	1.	Thomas Keating,	..	..	..	do.	do.	1.	Miner; slightly burned by an explosion of gas.
	5.	John Ulrich,	14	..	..	Honeybrook No. 4,	Audenreid,		Slate picker; leg fractured; one of his companions threw a sheet of iron over on him while playing at dinner time.
	6.	Martin Cuderco,	32	M.	2	do.	do.		Pole; slightly bruised about the body by a fall of "bone".
	6.	David R. Roberts,	47	M.	3	do.	do.		Welsh, superintendent; knee cap injured; car wheel became detached while going up slope, and came down striking him.
	11.	Pat. Malowney,	..	..	..	Girard Mammoth,	Raven Run,		Irish, miner; fell and fractured one of his ribs.
	15.	Jos. Bukavatskis,	24	S.	..	Primrose,	Mahanoy city,		Pole; leg fractured by being struck by a piece of coal flying from a shot.
	25.	John Bolinski,	40	S.	..	Lawrence,	Mahanoy Plane,		Pole, laborer; body slightly bruised by a rush of coal squeezing him against dumper.
	29.	John O. Boyle,	32	S.	..	Honeybrook No. 4,	Audenreid,		Irish, miner; body and legs slightly bruised; while barring down loose coal a piece fell on him.
Aug.	11.	Jos. Bondy,	30	M.	2	Silverbrook No. 2,	Silverbrook,	Aug. 13.	Hungarian, laborer; collar bone and several ribs broken; the engineer was given the signal to hoist up instead of lower and Bondy was thrown into the dump car.
	16.	Frank Stomcoski,	..	..	..	Suffolk,	St. Nicholas,	17.	Pole, laborer; leg fractured by a fall of coal.
	17.	Jos. Mitchell,	..	..	..	Ellangowan,	Mapledale,	19.	Miner; badly burned by an explosion of gas.
Sept.	6.	Jos. Brasitus,	..	..	..	Maple Hill,	St. Nicholas,	Sept. 7.	Pole, miner; face burned by an explosion of gas; he went up to face of "breast" without his safety lamp.
	7.	Charles Burke,	26	S.	..	Springdale,	Mahanoy City,	8.	Irish, miner; slightly burned by an explosion of gas; went up to face of "breast" without his safety lamp.

TABLE No. 5—*Continued.*

Date of accident.	NAME OF PERSON INJURED.	Age.	Married.	No. of children.	Name of Colliery.	Location—(All in Schuylkill county).	Date of investigation.	Nature and Cause of Accident in Brief.
ept. 7,	William Quinn,	34	M.	7	Springdale,	Mahanoy City,	Sept. 8,	Irish, miner; slightly burned at the same time as Burke.
,	Ignatius Budsky,	31	S.	.	Honeybrook No. 4,	Audenreid,	20,	Pole, laborer; bruised on head and body by a fall of coal.
19,	Pat. J. Boyle,	25	S.	. .	do.	do.	20,	Irish, driver; hips squeezed between cars and timber.
20,	Jos. Boyer,	40	M.	3	do.	do.	20,	Pole, laborer; leg fractured by being struck by a piece of clay flying from a blast in stripping.
3,	William Richardson,	19	. .	. .	Springdale,	Mahanoy City,	24,	Driver; bruised an d head cut; fell through trestling; this young man was hurt on the 18th of May; he is reputed to be a careless, stupid boy, and disobeyed the orders of the foreman, otherwise, he would not have been injured on the 23d of September.
,	Frank Lewis,	40	M.	4	West Shenandoah,	Shenandoah,	. . . . .	American, miner; several ribs broken by a fall of rock.
. 1,	Edward Cash,	65	M.	. .	Hammond,	Girardville,	Oct. 3,	Welsh, timberman; leg cut off; he stepped in front of loaded cars and was run over.
	Frederic Broker,	14	. .	. .	Tunnel Ridge,	Mahanoy City,	4,	American; left leg broken; right leg dislocated and arm lacerated by being caught by the line shaft.
,	Anthony Carey,	29	M.	2	Hammond,	Girardville,	5,	Irish, bottom man; cut and bruised about the body; two cars ran down slope from landing without the rope.
,	Sam. Harris,	45	M.	3	Girard,	do.	7,	American, miner; shoulder blade broken by being caught between mule and side of tunnel.
7,	Jabez Powell,	50	M.	4	Kehley's Run,	Shenandoah,	. . . . .	Miner; leg slightly bruised by a fall of coal.
7,	Aug. Stetler,	17	S.	. .	William Penn,	Shaft,	. . . . .	Spragger; knee squeezed between loaded cars.
8,	Joe Gitcofsky,	31	M.	. .	Shenandoah City,	Shenandoah,	9,	Pole, miner; severe scalp wound and face cut; he had fired two shots and went to face of breast to examine what the shots had done and was struck on head by a fall of "clod."
1,	Joe Mikelovitch,	32	M.	. .	Honeybrook No. 5,	Audenreid,	12,	Laborer; back slightly hurt by a fall of "clod" in breast.
3,	Michael Connors,	28	S.	. .	Packer No. 5,	Rappahannock,	14,	Miner; burned on face and hands; he hung his safety lamp on a prop 45 feet back from face and went up with naked lamp.
13,	Ralph Sherax,	. .	. .	. .	Kohinoor,	Shenandoah,	. . . . .	Miner; arm broken; fell from a scaffold while making room for a prop.

	17,	Alex. McDonald,	..	..	..	Schuylkill,	Mahanoy City,	.....	Timber man; injured himself internally by lifting a a prop.
	17,	Wm. Rusk,	..	..	..	Girard Mammoth,	Raven Run,	Oct. 19,	Spragger; contusion of pelvis by being caught between timber and cars.
	19,	Geo. Smith,	28	S.	..	Packer No. 2,	Lost Creek,	19,	Miner; cut on arm and side. He shortened the squib too much.
	24,	Mike Skillycinls,	..	..	..	Knickerbocker,	Yatesville,	26,	Miner; back injured by a fall of coal.
Nov.	1,	John Jenkins,	15	S.	..	Glendon,	Mahanoy City,	Nov. 2,	Door-boy; injured about the hips between car and door frame while riding on cars.
	1,	Michael Kerrowski,	35	M.	..	William Penn,	Shaft,	3,	Miner; leg fractured by a fall of coal.
	3,	Jacob Piz,	25	S.	..	Oneida,	Oneida,	4,	Miner; leg fractured by coal from shot, did not get away far enough.
	4,	Robert Buber,	..	..	..	Knickerbocker,	Yatesville,	6,	Laborer; back slightly injured by a fall of coal.
	7,	Dominick Nicarige,	28	S.	..	Packer No. 3,	Brownsville,	7,	Laborer; face terribly lacerated; went back too soon to shot which did not explode as soon as he thought it should have done.
	7,	John Costabile,	26	S.	..	Honeybrook No. 5,	Audenreid,	8,	Italian; trestling collapsed at No. 10 stripping; leg broken.
	7,	Mike Begadzle,	44	M.	3	do. do.	do.	8,	Hungarian; Trestling collapsed at No. 10 stripping; leg bruised.
	7,	John Haddock,	44	M.	3	do. do.	do.	8,	Laborer; Trestling collapsed at No. 10 stripping; slightly bruised.
	7,	John Washcock,	40	M.	4	do. do.	do.	8,	Trestling collapsed at No. 10 stripping; collar bone broken.
	7,	Number 121,	25	S.	..	do. do.	do.	8,	Hungarian, laborer; Trestling collapsed at No. 10 stripping; arm broken.
	7,	Number 16,	20	S.	..	do. do.	do.	8,	Trestling collapsed at No. 10 stripping; internally injured.
	7,	Number 145,	24	S.	..	do. do.	do.	8,	Italian; Trestling collapsed at No. 10 stripping; arm broken.
	9,	Peter Burke,	..	..	..	Bear Ridge,	Mahanoy Plane,	.....	Chute boss; arm broken; fell from a plank while pushing "bony" coal.
	11,	John Bacha,	20	S.	..	Oneida,	Oneida,	15,	Laborer; body squeezed between car and prop. He and other men were cleaning the track, those behind were pushing a car, he was in front and the car was pushed on him.
	15,	John Novitskie,	25	S.	..	Packer No. 2,	Lost Creek,	.....	Miner; cut on face and head and arm broken; did not give time for blast to explode.
	16,	Uvis Duncavitch,	28	S.	..	Furnace,	Gilberton,	.....	Pole; laborer; three toes cut off by a fall of coal.
	17,	Wm. Hoffman,	28	M.	..	William Penn,	Shaft,	.....	Carpenter; bruised about the body; fell from the new breaker structure.
	17,	Aud. Tema,	19	S.	..	William Penn,	do.	19,	Laborer; both legs fractured; while running cars from shaft to tip he fell under them.
	19,	Tom. Feeley,	32	M.	4	Primrose,	Mahanoy City,	.....	Miner; hands and back bruised by an explosion of gas. This breast was not examined by fire-boss at face.
	27,	Dan. Collins,	..	..	..	Bear Ridge,	Mahanoy Plane,	20, 28,	Miner; rib fractured; fell from platform on car.
	27,	Bryne Zarter,	25	M.	2	Park No. 2,	Park Place,	.....	Pole, miner; back severely injured by fall of coal.
	28,	Mike Costa,	53	M.	5	Honeybrook No. 5,	Audenreid,	.....	Italian, miner; leg fractured by a fall of frozen clay.
	29,	Larry Askler,	28	S.	..	Honeybrook No. 4,	Audenreid,	.....	Miner; leg broken by a fall of coal.
Dec.	10,	M. Novitskey,	24	S.	..	Bear Run,	St. Nicholas,	Dec. 11,	Miner; body bruised; while tamping a hole with dynamite the charge exploded.
	12,	John Flute,	26	M.	..	Honeybrook No. 5,	Audenreid,	.....	Laborer; hands and face burned; at dinner time he got a can with some powder in it and put it on a fire.
	15,	Henry Hulsock,	..	..	..	Kohinoor, scraper line,	Shenandoah,	15,	Laborer; flesh badly torn from hand; caught in tail plate of scraper line, also had a finger torn off.

TABLE NO. 5—*Continued.*

Date of accident.	NAME OF PERSON INJ'RED.	Age.	Married.	No. of children.	Name of Colliery.	Location—(All in Schuylkill county).	Date of investigation.	Nature and Cause of Accident in Brief.
Dec. 16.	Joe. Ansulavige.	28	S.	. .	Packer No. 3.	Brownsville.	Dec. 17.	Loader; back severely injured; he jumped from breast platform as the trip was passing and fell under cars instead of getting on bumper as he intended.
17.	Anthony Paddon.	33	S.	. .	Packer No. 2.	Lost Creek.	17.	Miner; bruised about face and hands by an explosion of gas.
17.	William Head.	35	M.	1	do.	do.	19.	Miner; burned about the face and hands by an explosion of gas; he crawled over six feet of rubbish to hunt for a plank and ignited the gas which had accumulated.

SEVENTH ANTHRACITE DISTRICT.

(NORTHUMBERLAND, COLUMBIA, SCHUYLKILL AND DAUPHIN COUNTIES.)

OFFICE OF INSPECTOR OF MINES,
SHAMOKIN, PA., *March 25, 1893.*

HON. THOMAS J. STEWART, *Secretary of Internal Affairs:*

SIR: I have the honor of presenting herewith the annual report of the coal mines of the Seventh Anthracite District, for the year ending December 31, 1892.

During the latter part of 1892 my predecessor, Mr. William McMurtrie, was taken ill, and, after some weeks of suffering, was called to his final reward. The deceased was highly respected in this district and his death was greatly regretted by all. He had filled his responsible position to the general satisfaction of miners and operators, and was recognized as a very competent official.

I having assumed the duties of the office on March 10, 1893, will explain the meagreness of this report, which is largely composed of data collected from the notes of Mr. McMurtrie. But two accounts of improvements and descriptions of colleries will appear, for reasons already given, and the report will be principally composed of the tables that are annually submitted.

The quantity of coal mined in the Seventh District during 1892 was 5,464,678 tons against 5,321,044 tons for 1891, being an increase of tonnage for 1892 of 143,634 tons.

I am glad to state that there was a decrease in loss of life for the past year. During 1891 there were 56 fatal accidents and for 1892 only 45—being a decrease of 11. It is to be hoped that for the future there may be a steady increase of the coal output, and that through improved methods of mining and careful management and inspection, the sacrifice of life may be diminished.

Yours respectfully,

EDWARD BRENNAN
Inspector of Mines.

CONDITION AND IMPROVEMENT OF COLLERIES.

Through the courtesy of Frank G. Clemens, Esq., superintendent and engineer, I am enabled to submit the following reports:

Mid Valley Colliery No. 1.—At this colliery during the year 1892 the No. 1 slope on the Holmes vein was driven down another lift, and turnouts opened east and west, and a tunnel started south to cut the Mammouth vein. An airway was driven up parallel with slope and connected with the main fan airway by an overcast, driven through the rock, over the first lift gangway.

A mule stable was constructed by driving into the bottom slate of the Mammoth vein, and it is practically fire-proof. The colliery is in good condition and well ventilated.

Mid Valley Colliery No. 2.—Some two miles east of the No. 1 breaker, after some preliminary shafting and diamond drilling to prove the veins, a trial slope was commenced in the latter part of November on a good vein of coal almost fifteen feet thick, known as the Buck Mountain vein.

This slope is called No. 3 slope, and has been opened as a double track slope through the surface into the vein where the top is stronger. From this point it is continued as a single track slope, wide enough for hoisting, pumping and ventilating, and it is through this slope that the No. 2 colliery is to be developed.

An open cut for the No. 4 or main slope has been made, and timber for a double track slope has been placed, and on the line of this slope it is proposed to build a breaker. Temporary blacksmith and supply shops have been built and a colliery reservoir has been made. The ground has been cleared of timber and underbrush, and in early spring the work of building the breaker will be commenced, and the latter part of 1893 ought to see this colliery completed and in full operation.

TABLE A.—*Comparative statement of fatal casualties from various causes, which occurred during the years 1890, 1891 and 1892.*

	1890.	1891.	1892.
Explosions of fire damp,	1	6	7
Falls of coal and roof,	17	23	16
Mine cars and machinery,	10	13	10
Falling down slopes and shafts,	1	2	3
Breaking of ropes and chains,	....	....	1
Explosion of blasting materials,	1	3	5
Suffocated by mine gases,	....	....	....
Kicked by mules,	1	....	....
Miscellaneous,	8	9	3
Total,	39	56	45

TABLE B.—*Showing number of tons of coal mined by each company, number of fatal casualties and number of tons mined per each fatality.*

	Tons mined.	Deaths.	Tons mined per death.
Philadelphia and Reading Coal and Iron Co.,	2,167,658.95	18	120,425.49
Mineral Railroad and Mining Company,	583,544.20	5	116,708.84
Summit Branch Railroad Company,	347,864.70	5	69,572.94
Lykens Valley Coal Company,	292,014.30	4	73,003.57
Union Coal Company,	559,971.55	4	139,992.88
L. A. Riley & Co.,	379,829.65	2	189,914.15
Individual collieries,	1,133,795.50	7	161,970.78
Total,	5,464,678.85	45	121,437.31

TABLE C.—*Showing the comparison of non-fatal accidents for the years 1890, 1891 and 1892.*

	1890.	1891.	1892.
Falls of coal and roof,	59	48	36
Explosions of fire damp,	13	22	16
Mine cars and machinery,	30	45	27
Explosion of blasting materials,	3	17	5
Kicked by mules,	3	. . . .	2
Miscellaneous,	13	23	15
Total,	121	155	101

TABLE D.—*Showing comparison of the quantity of coal shipped, the estimated quantity used and sold at collieries, and the total production for the years 1890, 1891 and 1892.*

	1890.	1891.	1892.
Quantity of coal shipped,	4,123,347.00	5,009,505.61	5,142,605.40
Quantity of coal used at collieries,	305,625.00	311,538.97	322,073.45
Number of tons of coal produced,	4,428,972.00	5,321,044.58	5,464,678.85

TABLE E.—*Showing general comparisons between the years 1890, 1891 and 1892.*

	1890.	1891.	1892.
Number of persons employed,	18,257.00	18,415.00	18,437.00
Number of tons of coal mined per life lost,	115,357.00	95,018.65	121,437.31
Ratio of employes per life lost,	468 5/35	328 47/56	409 32/45
Number of tons of coal mined per person injured,	36,603.07	25,218.22	54,105.73
Tons of coal mined per employe,	242.59	288.95	296.39

TABLE F.—*Showing the number of persons employed by the several companies and the number of deaths.*

	Number of deaths.	Number of employes.
Philadelphia and Reading Coal and Iron Company,	18	8,222
Mineral Railroad and Mining Company,	5	1,998
Summit Branch Railroad Company,	5	1,018
Lykens Valley Coal Company,	4	1,086
Union Coal Company,	4	1,731
L. A. Riley & Co.,	2	1,035
Individual collieries,	7	3,347
Total,	45	18,437

TABLE 1.—*Showing Location of Collieries in the Seventh Anthracite District.*

NAME OF COLLIERY.	Name of Operator.	Location County.	Name of Superintendent.	Postoffice Address.
Alaska,	Philadelphia and Reading Coal and Iron Company,	Northumberland,	John Veith,	Pottsville.
Reliance,	do. do.	do.	do.	do.
North Ashland,	do. do.	Columbia,	do.	do.
East,	do. do.	Schuylkill,	do.	do.
Tunnel,	do. do.	do.	do.	do.
Keystone,	do. do.	do,	do.	do.
Potts,	do. do.	do.	do.	do.
Merriam,	do. do.	Northumberland,	do.	do.
Monitor,	do. do.	do.	do.	do.
Locust Gap,	do. do.	do.	do.	do.
Locust Spring,	do. do.	do.	do.	do.
Buck Ridge,	do. do.	do.	do.	do.
Big Mountain,	do. do.	do.	do.	do.
Peerless,	do. do.	do.	do.	do.
Henry Clay,	do. do.	do.	do.	do.
Sterling,	do. do.	do.	do.	do.
Burnside,	do. do.	do.	do.	do.
Bear Valley,	do. do.	do.	do.	do.
North Franklin,	do. do.	do.	do.	do.
Preston No. 2,	do. do.	Schuylkill,	do.	do.
Preston No. 3,	do. do.	do.	do.	do.
Locust Run,	do. do.	Columbia,	do.	do.
Mid Valley,	Mid Valley Coal Company,	Northumberland,	F. Clemens,	Mt. Carmel.
Pennsylvania,	Union Coal Company,	do.	John L. Williams,	Shamokin.
Hickory Swamp,	do. do.	do.	do.	do.
Hickory Ridge,	do. do.	do.	do.	do.
Excelsior,	Excelsior Coal Company,	do.	A. Robertson,	Pottsville.
Corbin,	do. do.	do.	do.	do.
Cameron,	Mineral Railroad and Mining Company,	do.	Morris Williams,	Shamokin.
Luke Fidler,	do. do.	do.	do.	do.
Logan,	Lewis A. Riley & Co.,	Columbia,	Edward Reese,	Centralia.
Centralia,	do. do.	do.	do.	do.
Williamstown,	Summit Branch Railroad Company,	Dauphin,	T. M. Williams,	Lykens.
Short Mountain,	do. do.	do.	do.	do.
Neilson,	J. Langdon & Co.,	Northumberland,	H. S. Gay,	Shamokin.
Enterprise,	Enterprise Coal Company,	do.	D. H. Hughes,	Excelsior.
Mt. Carmel,	Thomas M. Righter & Co.,	do.	Thomas M. Righter,	Mt. Carmel.
Morris Ridge,	May, Troutman & Co.,	Columbia	James May,	Shamokin.
Bellmore,	D. Bickel & Co.,	do.	Tobias Bickel,	Mt. Carmel.
Continental,	Lehigh Valley Coal Company,	do.	Col. D. P. Brown,	Lost Creek.
Colbert,	Smith & Keiser,	Northumberland,	William Smith,	Shamokin.
Ferndale,	Philips, Nagle & Co.,	do.	R. J. Phillips,	Mt. Carmel.
Patterson,	Patterson Anthracite Mining Co.,	de.	H. Vincent,	Natalie.

TABLE NO. 2.—*Giving the total number of tons of coal mined in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the Seventh Anthractite District for the year ending December 31, 1892.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Pounds of dynamite used.
Alaska	Northumberland county	248,387.10	237,387.10	201.8	704	1	2	7,840	36	85	...	6994
Reliance	do. do.	140,340.02	133,340.02	192.85	508	1	3	4,747	24	44	...	261
North Ashland	Columbia county	187,786.19	179,786.19	209.7	533	4	2	4,195	34	51	...	3,000
Bast	Schuylkill county	173,539.01	167,539.01	216.75	632	...	2	1,634	46	55	...	11,250
Tunnel	do. do.	77.16	77.16	...	...	...	...	...	...	...	...	...
Keystone	Columbia county	7,177.11	6,177.11	34.2	2	...	...	9	...	17	...	917
Potts	do. do.	56,456.16	54,456.16	133.9	263	...	...	1,041	31	19	...	5,393
Merriam	Northumberland county	81,268.12	78,268.12	155	489	4	2	1,725	39	58	...	3,121
Monitor	do. do.	72,186.06	68,186.06	193.3	322	...	1	838	16	36	...	2,1084
Locust Gap	do. do.	206,152.09	197,152.09	215.9	580	1	3	3,270	25	43	...	3,625
Locust Spring	do. do.	182,302.09	175,302.09	210.15	491	...	2	5,480	32	69	...	2,2234
Buck Ridge	do. do.	47,827.06	43,827.06	203.6	221	...	2	874	24	19	...	3,321
Big Mountain,*	do. do.	...	...	...	528	2	2	...	...	...	...	...
Peerless,*	do. do.	...	...	...	...	...	...	...	...	...	...	...
Henry Clay	do. do.	442,149.08	422,149.08	216	806	2	1	2,011	36	208	...	1454
Sterling,*	do. do.	...	...	...	298	2	1	...	...	...	...	...
Burnside	do. do.	106,820.06	100,820.06	116.55	661	...	6	2,375	14	57	...	4,284
Bear Valley	do. do.	98,674.19	94,676.19	200.25	346	...	...	2,715	34	48	...	5,571
North Franklin	do. do.	79,052	76,052	140.5	396	...	...	1,505	24	37	...	2,5014
Preston No. 3	Schuylkill county	37,459.09	35,459.09	191.7	419	1	1	360	34	20	...	8,813
Preston No. 2	do. do.	...	...	...	12	...	...	...	...	...	...	...
Locust Run	do. do.	...	...	...	11	...	...	...	...	...	...	...
Mid Valley	Columbia county	190,541.18	184,183.18	199	369	1	1	4,968	5	32	...	14,000
Pennsylvania	Northumberland county	284,975.04	274,275.04	281.1	849	2	15	9,039	41	109	...	8,060
Hickory Swamp	do. do.	174,684.04	165,924.04	268.25	508	...	5	4,625	24	50	...	5,013
Hickory Ridge	do. do.	100,312.03	93,412.03	198	374	1	13	2,584	15	35	...	3,045
Excelsior	do. do.	180,719.17	175,719.17	249 9	437	...	...	4,800	26	60	...	1,500

Corbin,	do. do.	66,357.06	62,357.06	260	164	...	...	3,750	7	8	..	500
Cameron,	do. do.	363,251.08	329,733.08	249.75	1,196	2	7	12,545	40	108	2	22,092
Lake Fidler,	do. do.	220,292.16	198,452.16	242.25	802	3	4	4,667	20	78	2	4,530
Logan,	Columbia county,	169,813.04	150,888	198.15	497	2	2	5,350	52	39	1	1,850
Centralia,	do. do.	210,016.09	176,495.18	197.8	538	2	1	4,790	28	64	1	2,800
Williamstown,	Dauphin county,	347,864.14	340,947.19	305.25	1,018	4	9	10,050	93	155	4	17,971
Short Mountain,	do. do.	292,014.06	282,648.11	306.5	1,086	3	5	3,689	77	141	3	6,273
Neilson,	Northumberland county,	170,000	148,125.03	270.25	520	6	1	4,194	19	41	...	6,400
Enterprise,	do. do.	109,370	101,870	219.5	406	...	...	3,585	18	24	1	8,350
Mt. Carmel,	do. do.	48,977.19	44,524.18	193.2	286	...	2	1,752	33	31	2	2,225
Morris Ridge,	Columbia county,	67,697	58,697	209.5	219	...	3	1,840	16	21	...	2,000
Bellmore,	Northumberland county,	...	...	...	19	...	...	...	15	21	...	...
Continental,	Columbia county,	...	...	...	3	...	...	...	...	...	...	...
Colbert,	Shamokin,	53,410	52,918.14	246	137	...	1	1,341	3	16	...	450
Ferndale,	Mt. Carmel township,	40,771.10	35,771.10	204.8	186	...	1	1,635	6	18	...	400
Natalie,	Mt. Carmel,	205,950	195,000	207	601	...	...	3,700	16	46	...	...
Total,		5,464,678.17	5,142,605.10	209.67	18,437	45	101	129,613	980	1,953	16	154,884½

* Consolidated with Henry Clay.

TABLE NO. 3.—*Showing the number of each class of employes at each colliery in the Seventh Anthracite District during the year 1892.*

NAMES OF COLLIERIES.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							GRAND TOTAL INSIDE AND OUTSIDE.
	Inside foremen.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All other company men.	Superintendents, bookkeepers and clerks.	Total outside.	
Alaska	3	250	36	70	34	30	423	1	4	18	178	74	2	281	704
Reliance	4	185	25	28	19	16	277	1	18	14	138	58	2	231	508
North Ashland	4	119	11	133	15	11	293	1	6	19	146	67	1	240	533
East	9	104	58	175	19	22	387	1	6	20	150	86	2	265	652
Tunnel															
Keystone								1				1		2	2
Potts	5	49	7	55	4	6	124	1	6	15	49	67	1	139	263
Merriam	6	104	50	124	17	5	306	1	33	20	66	61	2	183	489
Monitor	3	88	26	66	11	3	197	1	4	5	63	51	1	125	322
Locust Gap	6	186	32	92	15	10	341	1	7	18	116	95	2	239	580
Locust Spring	5	147	17	75	20	4	268	2	14	17	124	64	2	223	491
Buck Ridge	3	64	17	39	3	8	134	1	4	15	39	27	1	87	221
Big Mountain	7	276	74	102	57	12	528								528
Peerless															
Henry Clay	4	180	30	64	21	5	304	3	34	28	237	195	5	502	806
Sterling	4	130	31	78	12	3	258	1	4	7		27	1	40	298
Burnside	4	183	60	110	32	11	400	1	36	16	108	98	2	261	661
Bear Valley	3	93	19	71	14	5	205	1	4	14	72	49	1	141	346
North Franklin	4	82	28	46	10	1	171	1	11	10	94	108	1	225	396
Preston No. 2				5			5			6		1		7	12
Preston No. 5	4	72	36	60	7	6	185	1	46	19	66	101	1	234	419
Locust Run								1		5		5		11	11
Mid Valley	1	105	26	54	15	4	205	1	7	7	88	55	6	164	369
Pennsylvania	1	275	120	158	41	18	613	1	7	20	85	120	3	236	849
Hickory Swamp	3	160	40	110	20	8	341	1	5	9	90	60	2	167	508
Hickory Ridge	1	120	42	27	30	8	228	1	5	7	62	70	1	146	374
Excelsior	2	151	78	40	23	3	297	2	5	10	76	45	2	140	437
Corbin	1	53	30	8	8		100	1	1	2	38	20	2	64	164
Cameron	6	425	129	239	61	35	895	1	14	22	139	122	3	301	1,196
Luke Fidler	4	212	83	197	39	22	557	1	10	15	96	120	3	245	802
Logan	2	140	33	80	16	7	278	1	8	17	115	75	3	219	497

Centralia,	2	135	36	91	22	15	301	1	9	14	125	85	3	237	538
Williamstown,	5	242	208	139	85	17	696	2	16	30	175	96	3	322	1,018
Short Mountain,	6	365	184	149	54	25	783	2	19	30	103	145	4	303	1,086
Neilson,	1	239	67	64	20	6	397	1	6	14	48	50	4	123	520
Enterprise,	1	120	86	71	13	2	293	1	8	14	40	47	3	113	406
Mt. Carmel,	1	71	31	35	15	3	156	1	4	21	54	46	4	130	286
Morris Ridge,	1	69	22	27	9	1	129	1	3	10	58	16	2	90	219
Bellmore,	1	4	....	....	....	....	5	...	....	5	....	8	1	14	19
Continental,	1	....	....	....	....	....	1	...	....	2	....	....	....	2	3
Colbert,	1	62	16	6	8	....	93	1	2	1	25	13	2	44	137
Ferndale,	4	58	36	15	7	....	120	1	4	7	26	26	2	66	186
Natalie,	3	150	140	52	14	10	369	2	14	11	42	160	3	232	601
Totals,	126	5,468	1,944	2,953	810	342	11,643	44	288	534	3,231	2,614	83	6,794	18,439

[1] Consolidated with Henry Clay.

TABLE No. 4.—*List of fatal accidents which occurred in the mines of the Seventh Anthracite District for the year ending December 31, 1892.*

Date of accident.	Name of Person Injured.	Age.	Married or single.	Number of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident in Brief.
1891.							
Dec. 19.	Albert G. Horley.	. .	. .	. .	Short Mountain.	Dauphin.	Fatally injured December 19, 1891, by mine wagon falling on his body; died January 24, 1892.
1892.							
Jan. 8.	Philip Desert.	25	S.	. .	Neilson.	Northumberland.	Killed by explosion of gas.
8.	John Grimzi.	26	S.	. .	do.	do.	Killed by explosion of gas.
11.	Frank Brady.	. .	. .	. .	Mid Valley.	Columbia.	Killed by being run over by mine wagons.
Feb. 14.	James Kelly.	. .	S.	. .	Merriam.	Northumberland.	Fatally injured February 14 by being squeezed between mule and car; died March 24.
26.	Patrick Duffy.	. .	S.	. .	Luke Fidler.	do.	Killed by fall of top rock.
26.	Alex. Novick.	. .	. .	. .	Pennsylvania.	do.	Burned by explosion of gas; died February 28.
Mar. 2.	Frank Chisnel.	. .	. .	. .	Big Mountain.	do.	Killed by falling down man-way.
4.	Lewis Wendel.	. .	. .	. .	Luke Fidler.	do.	Leg broken and internally injured by premature discharge of shot; died March 13.
7.	Michael Colgan.	. .	. .	. .	Merriam.	do.	Killed by an explosion of gas.
9.	Peter Feiten.	. .	. .	. .	Locust Gap.	do.	Killed by spark from lamp dropping into powder while putting it in keg.
10.	George May.	. .	. .	. .	North Ashland.	Columbia.	Killed by being caught between buggy and side of breast.
21.	William Humphrey.	. .	M.	. .	Sterling.	Northumberland.	Killed by a runaway mine wagon.
30.	Reuben Zimmerman.	35	. .	. .	Short Mountain.	Dauphin.	Killed by fall of coal.
30.	Peter Busky.	35	S.	. .	Neilson.	Northumberland.	Killed by premature explosion.
April 6.	Andrew Andrews.	25	M.	. .	Enterprise.	do.	Killed by fall of coal.
26.	Andrew Kamavage.	. .	. .	. .	Pennsylvania.	do.	Killed by an explosion of gas.
29.	Thomas Watanbah.	. .	. .	. .	Neilson.	do.	Killed by explosion of gas.
May 2.	Edward Weiss.	. .	. .	. .	Big Mountain.	do.	Killed by a fall of rock.
10.	Edward Grant.	. .	. .	. .	North Ashland.	Columbia.	Killed by a fall of coal.
11.	John Birmingham.	. .	. .	. .	Sterling.	Northumberland.	Killed by fall of coal.
21.	Judas Warmbur.	. .	. .	. .	Alaska.	do.	Killed by a fall of coal and slate.
July 9.	Frank McBride.	22	. .	. .	Williamstown.	Dauphin.	Killed by fall of slate.
11.	Frank McBridge.	. .	. .	. .	do.	do.	Killed by fall of coal.
14.	Sylvester Shoffstall.	15	S.	. .	do.	do.	Fatally injured July 14 by falling under car; died July 16.
25.	Patrick Canfield.	55	M.	5	Merriam.	Northumberland.	Killed by premature explosion.
26.	Henry Meyers.	. .	. .	. .	North Ashland.	Columbia.	Fatally injured July 26 by falling down breast; died August 15.
Aug. 10.	John Larkin.	. .	. .	. .	do.	do.	Fatally injured August 10 by fall of coal; died September 2.
11.	John Gondy.	. .	. .	. .	Williamstown.	Dauphin.	Killed by fall of coal.
11.	Michael Polanski.	20	S.	. .	Patterson.	Northumberland.	Killed by fall of rock.

18,	Capus Henninger,	..	M.	..	Cameron,	do.	Killed by fall of rock.
22,	Michael Serambo,	..	..	..	Henry Clay,	do.	Killed by being squeezed between mine wagons.
23,	Andrew Juscuski,	..	..	..	Reliance,	do.	Killed by prop falling on his head.
31,	James Woobridge,	..	S.	..	Luke Fidler,	do.	Killed by being squeezed between mine wagons.
Sept. 9,	Charles Brown,	38	M.	..	Henry Clay,	do.	Killed by falling down man-way.
26,	Walter Bekler,	..	..	..	Preston No. 3,	Schuylkill,	Fatally injured September 26 by falling and striking his head on iron rail; died September 28.
Oct. 22,	Andrew Bondy,	18	S.	..	Hickory Ridge,	Northumberland,	Killed by falling under moving mine cars.
27,	Asa Blackaway,	..	S.	..	Short Mountain,	Dauphin,	Killed by being squeezed between mine cars.
Nov. 5,	Frank Webster,	..	..	..	Logan,	Columbia,	Killed by fall of coal.
9,	Charles C. Werfel,	28	M.	4	Short Mountain,	Dauphin,	Fatally injured November 9 by fall of slate on back; died November 15.
21	Christopher Kinhoff,	39	..	..	Williamstown,	do.	Killed by a collar falling on him.
Dec. 1,	Anthony Welch,	..	..	..	Hazle Dell,	Columbia,	Killed by premature explosion.
2,	Anthony Crosnuski,	32	S.	..	Merriam,	Northumberland,	Killed by prop breaking and coiling about his body and pulling him down a breast.
6	John Opit,	..	..	..	Cameron,	do.	Killed by fall of coal.
16,	Pasquale Nardella,	..	..	..	Pennsylvania,	do.	Burned by explosion of gas; died December 23.

TABLE No. 5.—*List of non-fatal accidents which occurred in the mines of the Seventh Anthracite District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON INJURED.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident in Brief.
4.	John Bulski,	..	..	..	Reliance,	Northumberland,	Leg broken by jumping on truck while in motion.
8.	John Churela,	18	S.	..	Hickory Ridge,	do.	Leg broken by falling under mine wagon.
11.	George Kramer,	..	..	..	Locust Spring,	do.	Ruptured from kick by a mule.
30.	John Kinney,	19	S.	..	Williamstown,	Dauphin,	Leg broken by locomotive and car bumping together.
Feb. 2	John Barno,	27	M.	2	Hickory Ridge,	Northumberland,	Back hurt by fall of top coal.
12.	Austin Long,	..	..	..	Cameron,	do.	Leg broken by fall of rock.
13.	Charles Miller,	..	..	..	Logan,	Columbia,	Injured by a premature blast.
15.	Thos. Anderson,	60	..	..	Williamstown,	Dauphin,	Back injured by a fall of coal.
17.	Levi Phillips,	30	..	..	do.	do.	Back bruised by fall of coal.
17.	John McNamara,	..	S.	..	Alaska,	Northumberland,	Arm broken and cut by wagon running over him.
26.	Alex. Nigerbone,	25	S.	..	Pennsylvania,	do.	Squeezed between wagon and drum.
26.	Alexander Novick,	..	..	..	do.	do.	Severely burned by explosion of gas.
26.	Wm. Milanovagu,	25	M.	2	do.	do.	Severely burned by explosion of gas.
26.	Victor Carpenter,	16	S.	..	Williamstown,	Dauphin,	Leg broken by being caught between belt and pulley.
27.	Charles Gaffney,	44	..	..	Short Mountain,	do.	Head cut and rib broken by fall of slate.
Mar. 1.	Joseph Ney,	..	..	..	Burnside,	Northumberland,	Hips and back bruised.
3.	Anthony Bilock,	..	S.	..	Mount Carmel,	do.	Struck by car; bruised and cut.
9.	James Yost,	..	..	..	Merriam,	do.	Head cut and badly bruised by being thrown under mine car.
10.	Daniel Jones,	..	..	..	Cameron,	do.	Ribs fractured by falling under moving mine car.
10.	Geo. Bainbridge,	18	S.	..	Hickory Ridge,	do.	Arm broken by being caught between chute and wagon.
14.	Irwin Derk,	..	..	..	Cameron,	do.	Bruised by being squeezed between dumpers.
21.	Wm. Schwartz,	..	..	..	Bast,	Schuylkill,	Head cut and hands and feet bruised.
22.	Daniel Lloyd,	41	M.	4	Hickory Ridge,	Northumberland,	Head cut and hurt internally by fall of rock.
22.	Luke Delaney,	50	S.	..	do.	do.	Leg broken by fall of top coal.
23.	Adam Rudisill,	35	..	..	Short Mountain,	Dauphin,	Ribs broken by fall of rock.
29.	Jos. Noyocaski,	..	..	..	Burnside,	Northumberland,	Toe cut off by fall of coal.
30.	H. E. Yost,	..	..	..	do.	do.	Arm broken by post falling on him.
30.	Thomas Cauley,	..	..	..	do.	do.	Body bruised by post falling on him.
Apr. 5.	Jacob C. Miller,	54	..	..	Williamstown,	Dauphin,	Thigh broken by fall of rock.
9.	William G. Bateman,	40	..	..	do.	do.	Leg injured and back bruised by fall of slate.
16.	Victor Trenosky,	23	S.	..	Pennsylvania,	Northumberland,	Burned by explosion of gas.
26.	James Snobytus,	..	..	..	Locust Gap,	do.	Arm cut and body bruised by fall of top coal.
26.	John Duffey,	..	..	..	Monitor,	do.	Head and side hurt by falling under mine car.
28.	Grant Wary,	26	S.	..	Pennsylvania,	do.	Head cut and hand mashed by fall of coal.

May	30.	Joseph Potuska.			Reliance,	do.	Columbia,	Knee, elbow and back hurt by fall of coal.
	6.	James Reilley,			Morris Ridge,	do.	Columbia,	Burned by explosion of gas.
	6.	Frank Dixon,			do.	do.	do.	Burned by explosion of gas.
	10.	John Berster,			Locust Gap,	do.	Northumberland,	Leg broken by fall of coal.
	11.	John Oestrich,			Burnside,	do.	Dauphin,	Bruised by falling from trestle.
	13.	Charles Dressel,		20	Short Mountain,	4	Northumberland,	Fingers cut off while blocking cars.
	19.	Daniel Shadstaff,		30	Pennsylvania,	do.	do.	Back injured by premature explosion.
	20.	Frank Ritchka,			Cameron,	do.	do.	Body bruised by falling down manway.
June	4.	John Young,		20	Hickory Swamp,	do.	do.	Bruised between wagon and timber.
	3.	Fred. Richard,		31	Williamstown,	do.	Dauphin,	Arm broken by falling against a drill.
	6.	Frank Stoncobag,			Colbert,	do.	Northumberland,	Leg broken and head cut by fall of top coal.
	11.	Stany Kollzinski,		33	Hickory Swamp,	do.	do.	Cut and bruised by fall of top coal.
	14.	Walter Bartsock,			Big Mountain,	do.	do.	Ribs broken by fall of slate.
	22.	Charles Hertzog,			Henry Clay,	do.	do.	Arm broken by falling from a platform.
	23.	George Terrepshock,		2	Hickory Swamp,	do.	do.	Legs broken by a fall of slate.
	28.	William Bordell,	M.	32	Hickory Ridge,	do.	do.	Bruised by being caught by mine wagon.
July	6.	William Marcosky,	A.	15	Lake Fidler,	do.	do.	Hurt internally by being squeezed between mine wagon and prop.
	7.	John O'Brien,		40	Short Mountain,	do.	Dauphin,	Leg broken by mule falling on him.
	11.	Valentine Ignazo,	A.	19	Cameron,	do.	Northumberland,	Leg broken by fall of rock.
	12.	Anthony Kushner,			Hickory Ridge,	do.	do.	Eyes cut by being kicked by a mule.
	14.	George Rudhauf,		19	North Ashland,	do.	Columbia,	Head cut and back bruised by fall of coal.
	15.	David Rowe,	M.	27	Hickory Ridge,	do.	Northumberland,	Back hurt by fall of coal.
	15.	Joseph Robinson,			Buck Ridge,	do.	do.	Hip bruised; squeezed between wagons.
	19.	Thomas Grady,			Bast,	do.	Schuylkill,	Arm broken; caught between mine wagons.
	22.	John Moleski,			Cameron,	do.	Northumberland,	Bruised and cut by falling down manway.
	25.	George Hepler,			Ferndale,	do.	do.	Leg cut off by loaded wagon running over it.
Aug.	2.	William Shuman,			Reliance,	do.	do.	Arm broken and foot cut by fall of rock.
	8.	Eli P. Rumberger,		64	Williamstown,	do.	Dauphin,	Leg broken by fall of coal.
	1.	John Madara,	M.	20	Hickory Ridge,	2	Northumberland,	Ankle sprained by fall of slate.
	16.	John Cupsick,			Sterling,	do.	do.	Leg broken; caught by buggy.
	24.	Joseph Curran,			Buck Ridge,	do.	do.	Thigh broken; caught between wagons.
	24.	John Bartes,			Lake Fidler,	do.	do.	Burned by an explosion of gas.
		Joseph Bartes,			do.	do.	do.	Burned by an explosion of gas.
Sept.	2.	Charles W. Challenger,		24	Williamstown,	do.	Dauphin,	Collar bone broken; caught between car and prop.
	7.	John Sarocko,			Reliance,	do.	Northumberland,	Ankle broken; caught in axle of mine car.
	7.	Dennis McCobil,			Locust Spring,	do.	do.	Leg broken by coal from a shot.
	13.	Martin Crowl,			Cameron,	do.	do.	Arm broken by fall of top coal.
	13.	Matthew Mackie,	M.	32	Hickory Ridge,	do.	do.	Leg broken by fall of top coal.
	15.	John Purdy,			Midvalley,	do.	Columbia,	Leg cut off by mine cars.
	21.	Gilbert Reitz,			Merriam,	do.	Northumberland,	Arm cut by premature explosion of shot.
	30.	James Melbonald,			North Ashland,	do.	Columbia,	Leg broken by fall of top coal.
Oct.	1.	Jacob Kolt,		30	Short Mountain,	do.	Dauphin,	Internally injured by being squeezed.
	4.	Joseph Cinski,			Alaska,	do.	Northumberland,	Leg broken and back hurt; fall of top coal.
	5.	Hugh McKeone,			Locust Gap,	do.	do.	Ribs broken and hurt internally; fall of top rock.
	8.	Michael Mrosz,	A.	16	Hickory Ridge,	do.	do.	Fingers blown off by playing with a dualin cap.
	10.	William Campbell,			Morris Ridge,	do.	Columbia,	Burned by explosion of gas.
	12.	Alex. Trego,	M.	36	Hickory Ridge,	6	Northumberland,	Ear cut; struck by iron bar.
	25.	John Dulkevitch,	A.	26	Hickory Swamp,	do.	do.	Cut and bruised by falling down manway.
	26.	Thomas Grady,			Preston No. 3,	do.	Schuylkill,	Back injured by fall of top coal.
	27.	Martin Lobilki,			Big Mountain,	do.	Northumberland,	Head squeezed and back cut by fall of coal.
Nov.	12.	John B. Kendly,			Burnside,	do.	do.	Arm broken by fall of slate.
	12.	John Fenix,			Lake Fidler,	do.	do.	Leg broken by fall of top coal.
	12.	Costa Baldrera,	A.	35	Pennsylvania,	do.	do.	Slightly burned by an explosion of gas.
	17.	William Barnett,	M.	28	do.	1	do.	Slightly burned by an explosion of gas.
	19.	Adam Mutling,	A.	25	do.	do.	do.	Slightly burned by an explosion of gas.
	19.	John P. Dunlavey,	M.	28	do.	6	do.	Slightly burned by an explosion of gas.
	19.	Felix Vedro,	M.	25	do.	1	do.	Slightly burned by an explosion of gas.

TABLE NO. 5.—*Continued.*

Date of accident.	NAME OF PERSON INJURED.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident in Brief.
Nov. 19.	Michael Dobitzki.	26	S.	..	Pennsylvania,	Northumberland,	Slightly burned by an explosion of gas.
19.	August Jaeko,	24	S.	..	do.	do.	Slightly burned by an explosion of gas.
30.	Elijah Ashton.	45	M.	6.	do.	do.	Slightly injured by jumping from cage.
30.	William Parry.	50	M.	3	do.	do.	Leg broken and head cut by cage falling on body.
Dec. 5.	Charles Vetski,	..	..	..	Mount Carmel.	do.	Leg broken by falling from a railroad car.
6.	Martin Cannon.	20	S.	..	Hickory Swamp.	do.	Toes mashed by loaded car running over them.
16.	Michael Tyke.	..	..	..	Hazel Dell.	Columbia.	Body bruised and cut by fall of top rock.
16.	John Gusig.	..	..	..	Logan.	do.	Leg broken while attempting to jump on a car.
31.	Charles Meek.	24	M.	2	Hickory Ridge.	Northumberland.	Back hurt by fall of top coal.
Jan. 8.	Fred. English.	..	M.	..	Neilson.	do.	Slightly burned by explosion of gas.

EIGHTH ANTHRACITE DISTRICT.

(SCHUYLKILL AND CARBON COUNTIES.)

Hon. THOMAS J. STEWART,

Secretary of Internal Affairs:

SIR: I have the honor of presenting herewith my annual report as Inspector of Mines for the Eighth anthracite district, for the year 1892.

It is exceedingly painful to have to report a large increase in the loss of human life. There have been twenty-two more lives sacrificed from the various causes, than there were in the previous year, making a total of fifty lives lost, against twenty-eight for the year 1891, and leaving nineteen widows and sixty-three orphans dependent upon the charities of the public.

Twenty-five of the fatal casualties were the result of two disasters, *i. e.* an explosion of fire-damp at the York Farm colliery, and the flooding of the underground workings of the Lytle colliery. The details and remarks thereon will be found embodied in the report elsewhere.

The total output of coal was 3,066,092 tons, against 3,030,933 tons the previous year, being an increase of only 36,992 tons. The production of tons per life lost was 61,321, against 108,247 for the year preceding, showing a decrease of 46,926 tons from that of 1891.

SAMUEL GAY,
Inspector Eighth District.

COLLIERY IMPROVEMENTS.

A new breaker at the Lytle colliery has been completed, and is calculated to have a capacity to handle and prepare from one thousand to fifteen hundred tons of coal per day. However, before the mine is ready to produce that quantity of coal, it will require considerable time, and a large sum of money must necessarily be spent, in addition to that already put in the concern in consequence of the vast area of old workings filled with water, which must be pumped out before the main body of the coal can be reached. Notwithstanding the vast quantity of coal that has been taken out of these lands, there still remains a very large area to be worked.

The Philadelphia and Reading Coal and Iron Company's new breaker

at the new Silver Creek shaft is nearly completed. This breaker will have a capacity of one thousand tons per day, with every prospect of being able to furnish a sufficient supply of coal to keep it running to its full capacity. The coal seams cut in the shaft are being opened up rapidly, and show up in a very excellent condition.

The Silverton Coal Company, which is composed of gentlemen from the Luzerne region, owns the land, and are opening up the old slopes, and removing the water from the old workings. However, there is but a small area of old workings filled with water, and these are confined to the two upper red ash veins, viz: Black mine and Tunnel beds.

Another party of Scranton gentlemen, known as the Chamberlain Coal Company have commenced to develop the lands known as the Chamberlain Tract, which was purchased some two years ago by Scranton capitalists. As in the former case, the company will have to remove the water from the old slope that is already sunk about eight hundred feet. However, but a small area has been worked, and the workings being confined to the two upper red ash veins, known as the Lewis and Little Tracy veins. There is but a comparatively small quantity of water to be removed from the old openings, in comparison with the Lytle colliery workings.

CONDITION OF COLLIERIES.

If we should take as a comparison the death roll of the past year, and allow the readers of these reports to render their verdicts thereon, we presume that the impression would be, that in place of the condition of the mines in point of safety as well as the sanitary effects upon the employes improving, the magnitude of the death list recorded in this report would leave an impression to the contrary. Notwithstanding, however, such a verdict would be far from being a just one to those engaged in the great mining industries of anthracite coal, for even with this fearful death list, it is not to be compared with those of former years, when the mine law first came into force.

We are not using this as an argument to justify such serious calamities at this time, or to shield those in charge of the mines where the great loss of life occurred, but it is a well known fact that as a rule, there is always a certain class of extremists, ready to censure everyone connected with mining affairs, on all such occasions, without ever waiting to find out whether the parties thus condemned have failed in any particular to do their duty.

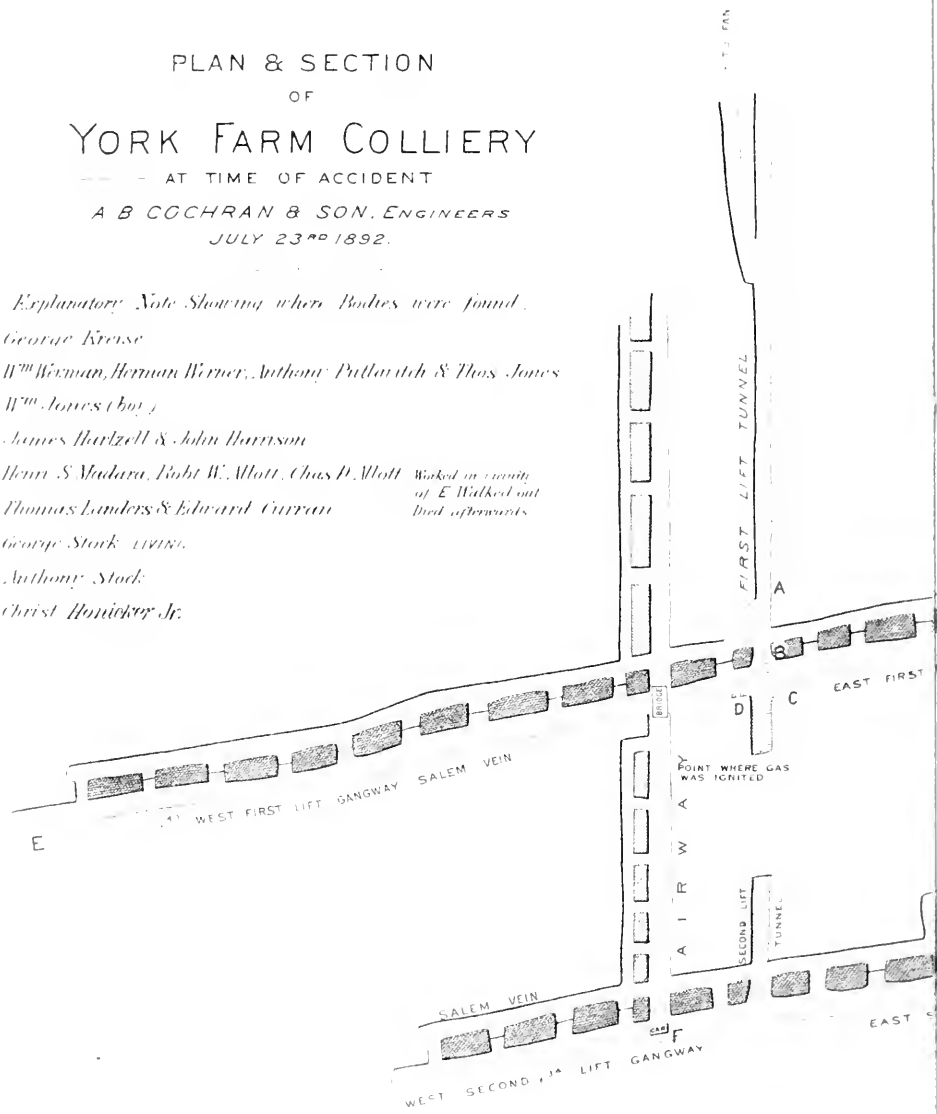
Notwithstanding, however, we are of the opinion that the persons who had charge of the opening up of the old mines where the calamities occurred, had, in their judement, taken every precaution to prevent accidents from the sources from whence they had anticipated danger. On the other hand we are free to say that in one of the cases, especially the Lytle disaster, that those in charge of the mine made a

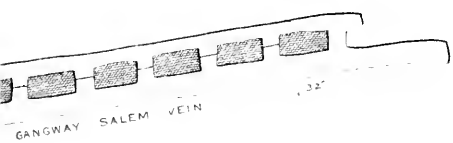
PLAN & SECTION
OF
YORK FARM COLLIERY
AT TIME OF ACCIDENT

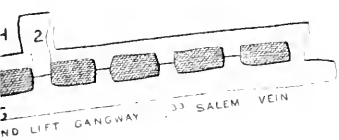
A B COCHRAN & SON, ENGINEERS
JULY 23RD 1892.

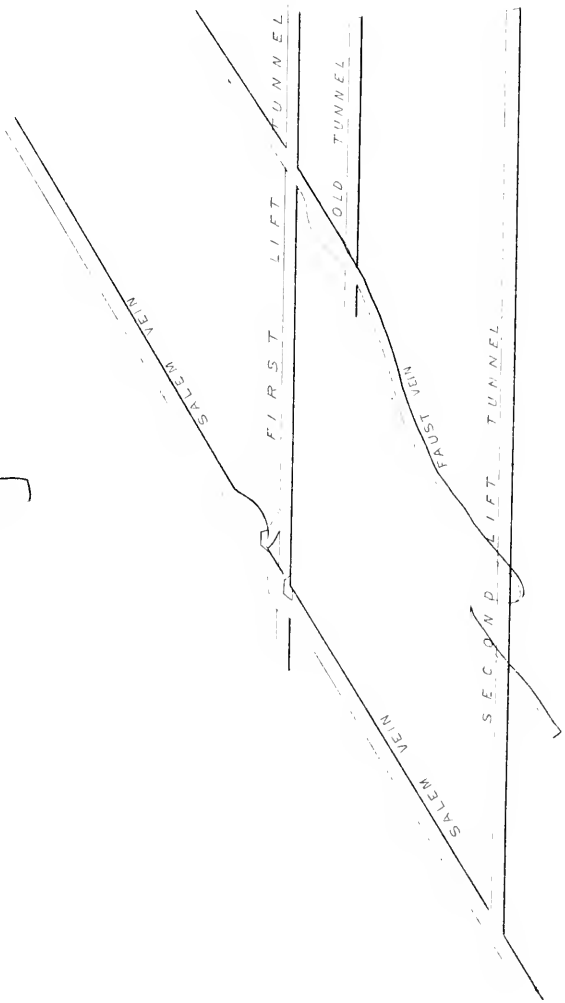
Explanatory Note Showing where Bodies were found.

A *George Kreese*
B *Wm Wesman, Herman Werner, Anthony Pittarith & Thos Jones*
C *Wm Jones (boy)*
D *James Hartzell & John Harrison*
E *Henr S Madara, Robt W. Mott, Chas D. Mott* — *Walked in vicinity of E Walked out Died afterwards*
Thomas Landers & Edward Curran
F *George Stock (boy)*
G *Anthony Stock*
H *Christ Honicker Jr.*









SAMUEL GAY MINE INSPECTOR

mistake, or were overly anxious, after tapping the water and locating the old slope workings, to produce a little coal for steam purposes and the use of their employes, the fact of the bore holes showing that the old slope workings were two hundred feet west of the point where the fatal breast was being worked, they felt quite confident that the point of danger was passed. Notwithstanding, had I, as Inspector, anticipated that the officials had any intention of working a breast, I certainly should have protested against it, until the water had been drained out of the old workings down to that level; not that I should have anticipated any serious danger, but as an extra precautionary measure against unforseen dangers.

In the other disaster, at the York Farm colliery, in which fifteen persons lost their lives by an explosion of gas, had the workmen been instructed, and had they followed out the instructions, to have thrown open the battery doors between the intake and the return, it is more than probable that the accident would have been prevented; for two reasons, first, the volume of fresh air would have been very largely increased on the one hand, whilst the volume of gas that was swept along with the current would have been very materially diminished. But, as we have already remarked in the other case, the officials used every precaution in their judgment in endeavoring to prevent accidents from that source that cost the lives of the fifteen victims.

It will be understood that these two disasters cost the lives of twenty-five persons, or fifty per cent. of all the lives lost in the district for the year, yet neither of these collieries had produced any output of coal, but were simply developing, or opening up the old workings, preparatory to mining and producing coal for market; hence we do not consider that under the circumsances the great increase in the death roll should have much bearing on those which were *producing* collieries, in their regular order of mining and shipping coal to market.

Outside of these unusual calamities, we are free to say that the condition of the mines in general is good, and with the exception of small concerns, or in some parts of the larger collieries where nothing but "robbing" is being done, the ventilation is adequate, and, in fact, in much larger quantities than required by law; but as a matter of fact, most of the fiery mines require much larger volumes than the minimum quantity provided for in the act of assembly.

YORK FARM COLLIERY DISASTER.

On the 23d of July, 1892, one of the most destructive explosions of gas that has occurred in the southern anthracite coal field during the last twenty years, took place at this mine causing the death of fifteen persons. The colliery is situated near the borough line of Pottsville, and was opened between fifty and sixty years ago; after working a number of years, and the slope reaching a depth of twelve hundred feet, the

mine was abondoned, and remained in that condition for about thirty-five years. About three years ago the lands were purchased by the Lehigh Valley Coal Company, and a new and extensive plant built. The water in the old workings was taken out, and the old slope continued down three hundred feet below the old level. Tunnels were driven north and south, cutting several seams of coal; the last cut on the lower or new level wherein the explosion occurred, is what is known in this locality as the Salem vein.

At the time of the accident there were only two breasts working on that level, shown on sketches Nos. 1 and 2; the ventilation being produced by two fans each, 21 feet in diameter, hence a large volume of air was circulating; in fact, according to the testimony of the miners themselves, before the coroner's jury, they stated that the air current was so strong that it made it disagreeable for them to work, by reason of the high velocity of the current filling their eyes with dust. However, it is a well known fact that where large volumes of gas are suddenly discharged from the strata by outbursts, that even large volumes of air are not by any means a sure preventive against explosions; in fact, we have had a demonstration of it in this case.

As we have stated before, there were but two breasts working on this level in the Salem vein, and it was No. 1 breast that was being worked by the two miners, William Lewellyn and Chris. Honicker where the outburst occurred. Both men had large experience in fiery mines, particularly Lewellyn. Every precaution, as far as the officials thought necessary for the protection of the employes had been taken, and no person was employed as a miner unless the foreman of the mine was satisfied that the man had previously been engaged in a fiery mine. The workmen were confined to the use of locked safety lamps, and dynamite was the only explosive used, and the shots were fired by electric batteries. The miners were also instructed, in case of any outburst, to notify the nearest official of the fact.

A short time before the explosion, Lewellyn and Honicker had fired a shot, and immediately after, Lewellyn discovered that a large volume of gas was being given off, charging the return current to an explosive point. He told Honicker that such was the case, telling him to stay in the intake heading, whilst he would go and notify some of the officials. In a few minutes Lewellyn found a fire-boss who had charge of that section of the mine, and they at once began to retrace their steps back to Lewellyn's working place, but just as they started back, an explosion occurred with such fearful results as I hope I shall never witness again, or have occasion to make a record of. As a natural result, batteries, timbers and brattices were blown out, and ventilation cut off, and the workings in the Salem vein were filled with explosive gas. However, ventilation was soon re-established, and every effort made to rescue the bodies by the willing hands of the brave-hearted men of the colliery. A

number of workmen from some of the neighboring mines displayed energy, skill and courage in their efforts to recover the bodies of the entombed men, and are worthy the name of heroes. The bosses, and a number of the workmen from Beechwood colliery deserve special mention, because they were under no obligation in any way to render any assistance, but willingly came and offered their services, without any expectation of being remunerated for their labor or the risk to their lives.

After recovering the bodies, we directed our attention to the question which would naturally be asked: How and where did the explosion take place? In our examination of the airway, and at a point about forty feet below the second lift gangway, three men were engaged in timbering and enlarging the main airway, or return. It will be noticed on the accompanying sketch that there are two airways running parallel to each other, connected every sixty feet by cross headings. Our first object was to examine that part of the opening where the men were timbering. Here we found the timbers blown in opposite directions; those towards the first lift having been blown up the pitch, and those below, down the pitch.

By following through all that part of the mine affected by the explosion, it was found that the same state of affairs existed. That part of the workings in the second, or bottom lift, the car at F. where George Stock was found, received the force of the explosion on the north side, crushing the north side of the car in, and toppling it over toward the south, and on top of the boy Stock; in fact, everything indicated that the explosion originated at the point in the airway where the three men were working.

There is no question in my mind whatever as to the point where the gas was ignited. The manner in which it was fired will never be known with any degree of certainty. The men who were working the airway were not there when the explosion occurred, but were found about eighty feet out from the mouth of air hole on the main gangway. It was my opinion at the time, and I still am convinced that the three men had either detected the air current charged with gas, or else they had been notified by John Harrison, the fire-boss. However, it was quite evident that in the excitement one of the unfortunates ran away and left his safety lamp behind, and we are of the opinion that the fire-boss, on learning of the fact, was on his way to make an effort to recover the lamp, and just as he got to the mouth of the air hole, the explosion occurred, killing him. The safety lamps were all found alongside of the victims, excepting the one that belonged to Wheyman, one of the men who was employed in the airway. Part of this lamp was afterward found in the airway, when the debris was being cleared up.

As a matter of course, this is nothing more than a theoretical conjecture, but the facts as well as the effect that left their marks written in

the course of the destructive element, gave strong grounds to form such an hypothesis.

Sketch A

Represents that section of the York Farm working in the Black mine vein, that is advancing towards the old Guinea Hill slope that was abandoned about fifty years ago, and is supposed to be one of the first slopes sunk below water level in the anthracite coal field. The parallel lines marked bore holes, show the number, direction, and the actual distance the holes have been bored in advance of working faces. It will be observed that there are five holes, varying in length from twenty-five to three hundred feet. However, up to this writing, the old workings have not been reached.

LYTLE COLLIERY DISASTER BY WHICH TEN PERSONS WERE DROWNED.

This colliery is situated about one and one-half miles northwest of Minersville. About two years ago the property was purchased by J. Stickney & Co., and afterwards leased to the Lytle Coal Company.

This property in former years had been worked very extensively, both on the east and the west side of the colliery now being opened by the Lytle Company. However, the old maps showed that there was a boundry pillar standing between the old western and the eastern workings, or what is better locally known as the Wolf Creek and the Forestville workings. As this pillar was about the only available place in the territory to open the property by a slope, the company determined to open up their colliery at this point, and sink their slopes in the boundary pillar on the Primrose slope. On the east side of this new slope opening, the Primrose vein had been worked to a depth of fifteen hundred feet below water level, or about nineteen hundred feet below the mouth or top of the new opening being made by the Lytle Coal Company.

On the west side, the condition of things was much more favorable, because the workings on the Primrose vein on this property had not been operated very extensively. A slop was formerly worked on this seam, known as the Old McDonald colliery, but was only worked one lift below water level, or about three hundred feet, and the gangway driven eastward up to the boundary pillar, or, thereabouts.

The new openings consist of two slopes: the one on the eastern side was sunk through the old water level workings for a distance of about four hundred and fifty feet. At this point the old Wolf creek water level was reached. The west side, or the main hoisting slope, was sunk in the boundary pillar, and was continued down about two hundred feet below the water level. In order to guard against accidents by reason of the water on the east side, holes were bored a distance of forty feet, and five feet apart, as the slope was being sunk. At the time of the

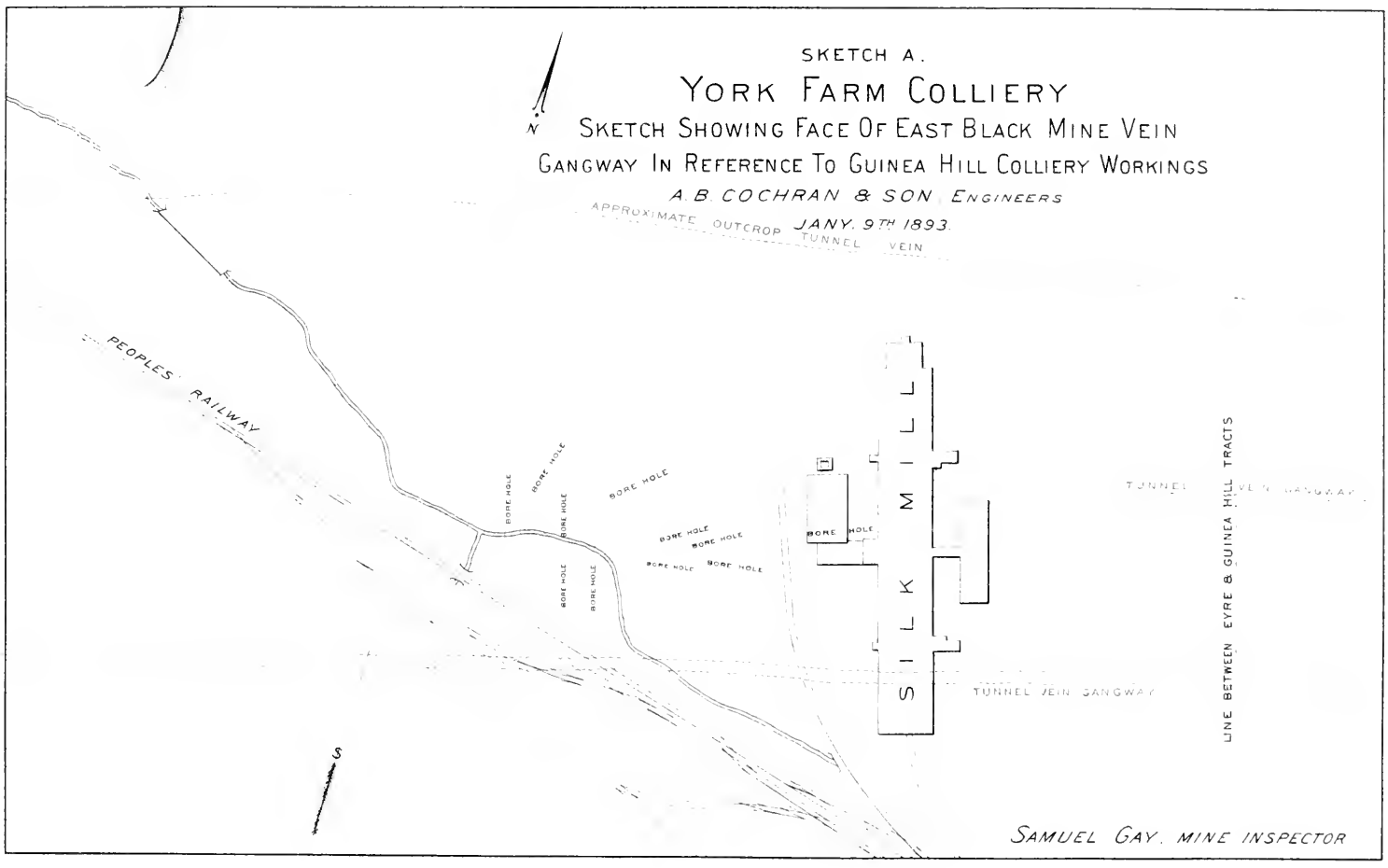
SKETCH A.

YORK FARM COLLIERY

SKETCH SHOWING FACE OF EAST BLACK MINE VEIN GANGWAY IN REFERENCE TO GUINEA HILL COLLIERY WORKINGS

A. B. COCHRAN & SON, ENGINEERS

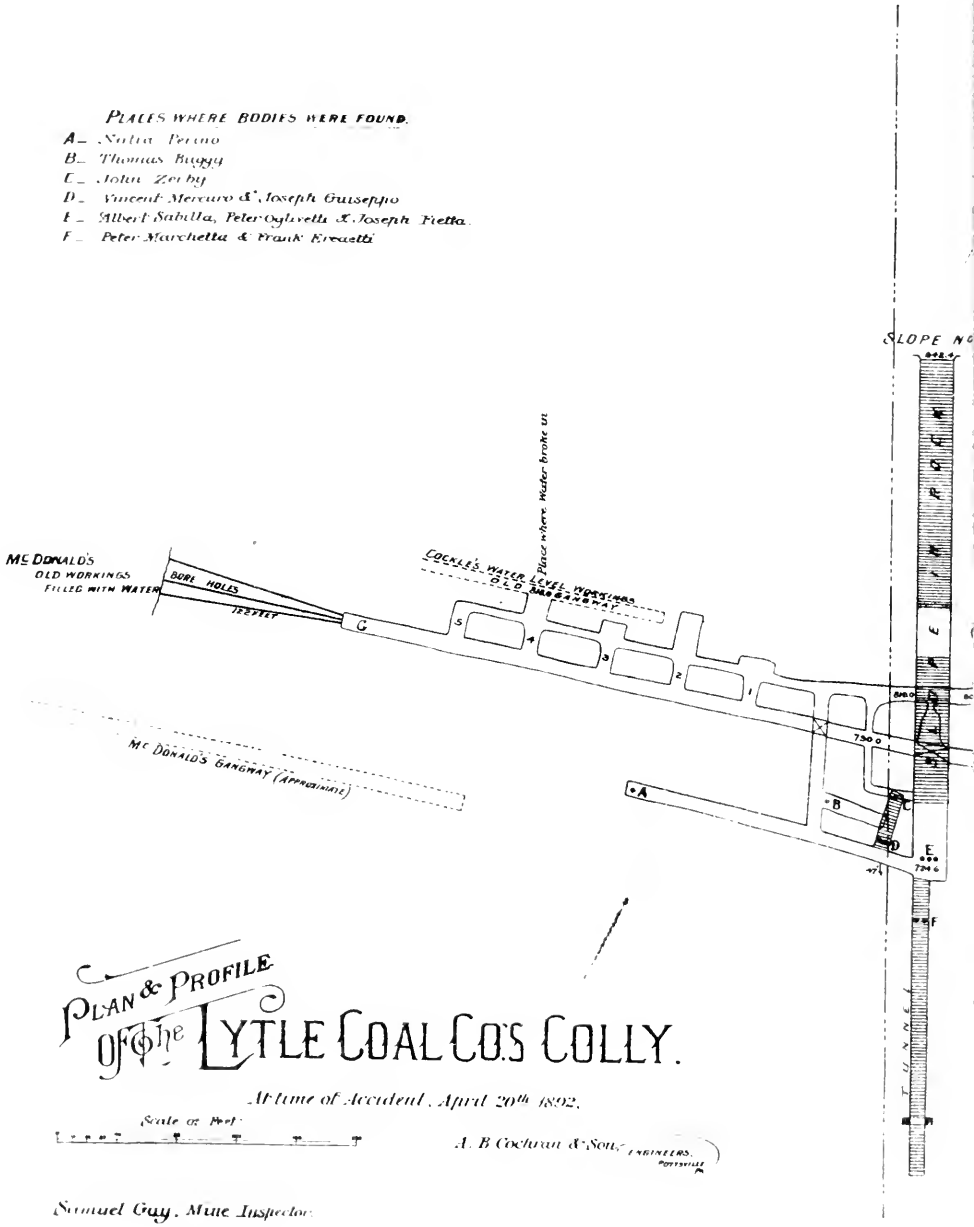
JANY. 9TH 1893.



SAMUEL GAY, MINE INSPECTOR

PLACES WHERE BODIES WERE FOUND.

A— Natia Perno
B— Thomas Buggy
C— John Zerby
D— Vincent Mercuro & Joseph Guiseppio
E— Albert Sabilla, Peter Ogliveti & Joseph Fietta.
F— Peter Marchetta & Frank Ercaetti



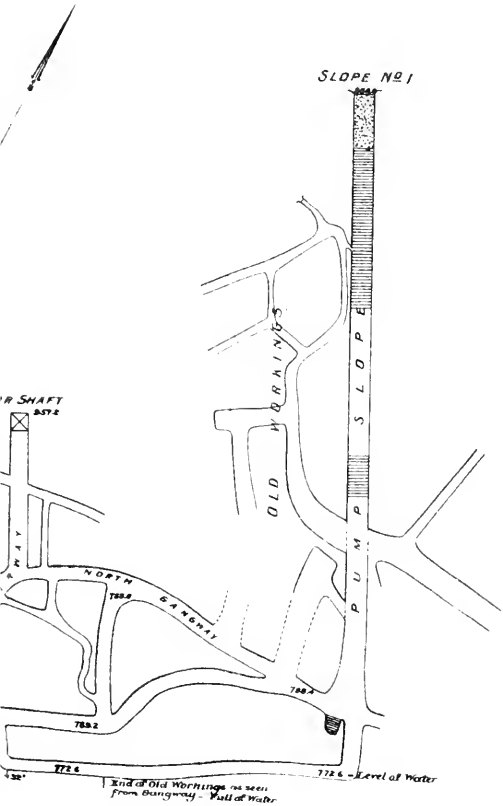
PLAN & PROFILE OF THE LYTLE COAL CO.'S COLLY.

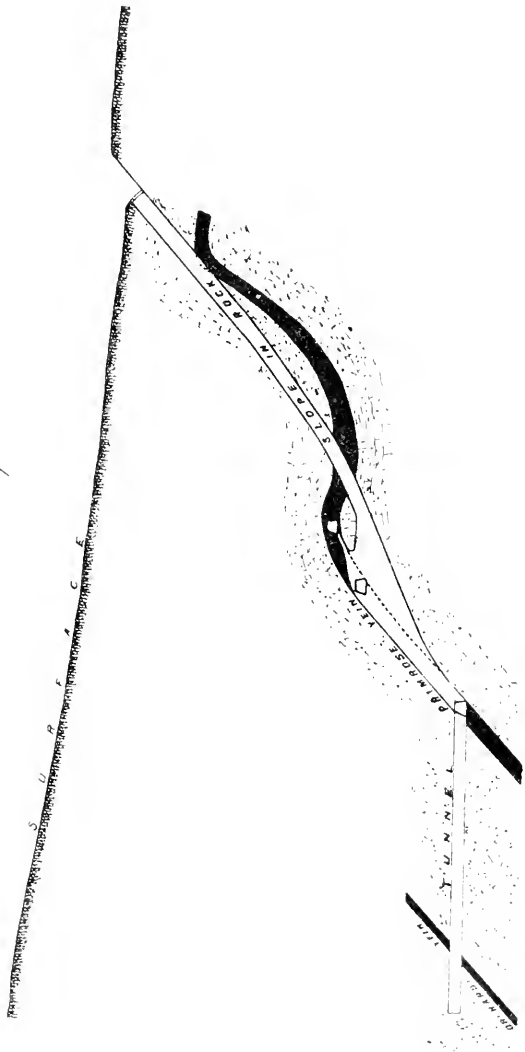
At time of Accident, April 20th 1892.

Scale of Feet

A. B Cochran & Sons, ENGINEERS, POTTSVILLE PA.

Samuel Gay, Mine Inspector.


SLOPE No 1
OLD WORKINGS
PUMP SLOPE
NORTH GANGWAY
788.9
788.2
788.2
772.6
772.6
Level of Water
Full of Water


ROCK
SURFACE
PRIMROSE VEIN
TUNNEL

accident the sinking of the slope had been discontinued for the time being, and two tunnels were being driven, one north and the other south. The latter was extended to reach the old workings on what is known as the old Red Ash, or Diamond vein workings, which would give them a lower level of about ninety feet vertical to deliver the water into from the old workings. During the progress of this work on the lower level, a gangway was being driven westward on the old water level above, with the intention of tapping and drawing off any water that might have lodged in the old McDonald workings above this level.

In driving this gangway, bore-holes had been bored from fifty to one hundred and twenty feet in advance. Finally the bore-hole reached the old workings, tapping the water, bringing considerable relief to all parties connected therewith. However, the relief was only of a short duration, for in two or three days after the tapping of the water, it burst into the mine, filling up the lower lift and drowning the ten persons employed in driving the tunnels, notwithstanding the care taken to ascertain to what distance the old workings had been extended eastward, both from old maps, and from old miners who had lived and worked in the vicinity of the colliery, and more particularly from those who had worked in the colliery when it was abandoned.

Some of the old miners had a fair recollection of the extent the gangway had been driven, but unfortunately no one appeared to know, or else it had been forgotten that there had been an old water level drift worked on this seam and abandoned some forty-four years before. Nevertheless a water level had been worked, and the gangway extended several hundred feet east beyond the slope gangway, where the water was tapped.

In driving this gangway in which the water was tapped, chutes and headings followed up the gangway in the rear for the purpose of ventilation. And to furnish some coal for steam purposes, two hundred feet back from the face of gangway G a breast was started, the officials of the colliery supposing that they had about four hundred feet of solid coal between gangway G and the surface. However, in this they were wofully mistaken, for the opening or breast had not been driven more than twelve feet above the heading, when the coal began to show indications of water by droppers falling from the roof and other places.

The inside foreman, William Adams, on learning of this, told the miners to stop working at the face, and that they should stand a row of props along the face. Before the men had time to secure the face by timbers, it burst out, liberating the impounded water in the old gangway, with the fearful result as before stated.

After the accident, several of the old miners recollected that a water level drift had been worked, and that the gangway from its mouth for a short distance was driven down on a dip, in order to gain a longer lift. In order to drain or carry off the water from this drift, by reason of its dip-

ping at its mouth, the operators had taken advantage of the surface surroundings, and had gone down the valley some distance and dug an open cut. Commencing to carry it level from the point from which they started, by the time they had reached the drift gangway they had gained about ten feet vertical height, or they had reached the lowest point of the gangway.

However, years before the Lytle people had commenced their new operation, all sight and evidence of the old drift mouth and open cut had been obliterated, by their being filled up with material washed down from the hillsides and valley above the opening, forming a barrier or dam, impounding the water in the old water level. As we have said before, Mr. A. Cochran, the company's engineer, had made every effort to ascertain and gather all the information relating to the old workings, both by consulting maps and the old miners, who he thought might be able to furnish useful information. From these sources he was enabled to gather considerable data, which were found to be nearly correct; but in all of his efforts he had never received any intimation from any source, that a water level drift had ever been opened. Unfortunately, however, when it was too late, some of the old men recollected the drift, but none of them appeared to have any idea or knowledge, as to the distance it had been driven.

The coroner's jury that investigated the cause of the disaster, after hearing the evidence of a large number of persons, in summing up their deliberation, said, "We find that the Lytle Coal Company has failed to comply with the requirements of the mine law, by reason of not having flank bore holes."

Comparative statement of fatal casualities which occurred during the years 1891 and 1892.

CAUSE OF ACCIDENTS.	1891.	1892.
Explosions of fire damp,	6	16
Falls of roof and coal,	5	9
Crushed by mine cars,	2	6
By machinery on the surface,	....	2
By machinery underground,	....	....
Breaking of ropes and chains,	1	....
Falling down shafts,	....	....
Falling down slopes,	....	1
By blasting material,	1	3
By drowning,	....	10
Miscellaneous,	13	3
	28	50

Table showing number of fatal accidents and quantity of coal produced per life lost by the different companies and individual firms during the year 1892.

	Number of fatal accidents.	Quantity coal produced per life lost.
Philadelphia and Reading Coal and Iron Company,	17	96,232
Lehigh Coal and Navigation Company,	3	211,480
Lehigh Valley Coal Company,	18	7,098
Individual firms,	12	54,667
	50	369,477

Comparative statement of non-fatal casualities during years 1891 and 1892.

CAUSE OF ACCIDENTS.	1891.	1892.
Explosions of fire damp,	24	7
Falls of roof and coal,	9	15
Crushed by mine cars,	9	9
By machinery on the surface,	1	1
By machinery underground,	....	....
Falling down shafts,	1	....
Falling down slopes,	1	....
Explosions of blasting materials,	1	7
Miscellaneous,	17	13
	63	53

Table showing the quantity of coal shipped by rail, and estimated quantity used and sold at the mines.

	1891.	1892.
Quantity of coal shipped by railroads,	2,859,372	2,892,540
Estimated quantity used about the mines,	171,562	173,552
Total production,	2,030,933	3,066,092

Table showing comparisons between the years 1891 and 1892.

	1891.	1892.
Number of persons employed,	9,872	10,416
Quantity of coal mined per life lost,	108,247	61,321
Ratio of employes per life lost,	352$\frac{16}{28}$	212
Number of tons produced per each person seriously injured,	48,869	57,840
Tons of coal produced per each employe,	307	294$\frac{3}{10}$

Summary.

Number of fatal accidents,	50
Number of non-fatal accidents,	53
Number of widows,	19
Number of orphans,	63
Number of kegs of powder used,	56,681
Pounds of high explosives used,	172,509
Tons of coal produced,	3,066,092
Tons of coal shipped,	2,892,540
Tons of coal produced per each employe,	294
Tons of coal produced per each fatal accident,	63,127
Tons produced per each non-fatal accident,	57,850
Number of mines in operation,	38
The largest output from a single colliery,	306,000
Number of persons employed,	10,417
Number of steam boilers,	719
Average number of days worked,	211

TABLE 1.—*Showing location of collieries in the Eighth Anthracite District.*

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Middle Creek	Philadelphia and Reading Coal and Iron Co.	Schuylkill	R. C. Luther	Pottsville, Schuylkill county.
Phœnix Park	do. do.	do.	do.	do. do.
Thomaston	do. do.	do.	do.	do. do.
Otto	do. do.	do.	do.	do. do.
Glendower				do. do.
Beachwood	do. do.	do.	do.	
Richardson	do. do.	do.	do.	do. do.
Brookside	do. do.	do.	do.	do. do.
East Franklin	do. do.	do.	do.	do. do.
Pine Forrest	do. do.	do.	do.	do. do.
Good Spring	do. do.	do.	do.	do. do.
Old Lincoln	do. do.	do.	do.	do. do.
Eagle Hill	do. do.	do.	do.	do. do.
Silver Creek shaft	do. do.	do.	do.	do. do.
North Brookside	do. do.	do.	do.	do. do.
No. 8	Lehigh Coal and Navigation Company.	do	W. D. Zehner	Lansford, Carbon county.
No. 10	do. do.	do.	do.	do. do.
No. 11	do. do.	do.	do.	do. do.
No. 12	do. do.	do.	do.	do. do.
Kaska William	do. do.	do.	do.	do. do.
York Farm	Lehigh Valley Coal Company.	do.	Wm. A. Lathrop	Wilkes-Barre.
Blackwood	do. do.	do.	do.	do.
New Boston	New Boston Coal Company.	do.	T. D. Jones	Hazleton.
Morea	Dodson Coal Company,	do.	Daniel Thomas	Morea.
Oak Hill	Swenk & Co.,	do.	Wm. Swenk	Minersville.
Greenwood No. 13	Oliver & Co.,	do.	Wm. I. Oliver	Tamaqua.
Flowery Field	Sturdivent & Co.,			
West Lehigh	John Young,	do.	John Young,	do.
Ellsworth	John H. Davis,	do.	John H. Davis,	New Castle.
Schuylkill Valley	Richard White & Co.,	do.	Richard White,	St. Clair.
Reserve	do. do.	do.	do.	do.
Peach Orchard	do. do.	do.	do.	do.
East Lehigh	Jos. Mitchell,	do.	Jos. Mitchell,	Tamaqua.
Chamberlin	Thompson & Co.,	do.	Ed. Thompson,	St. Clair.
Hoocker	Linderman & Co.,	do.	Samuel Vuner,	Pottsville.
Keckline	Keckline Coal Company	do.	P. Sulivan,	Minersville.
Eagle	Thomas Crockson,	do.	Thomas Crockson,	St. Clair.
Red Ash	Wm. Walters & Co.,		Wm. Walters,	do.

TABLE NO. 2. *Giving the total number of tons of coal mined in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the Eighth Anthracite District for the year ending December 31, 1892.*

NAME OF COLLIERIES	Location.	Total production in tons of coal.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Pounds of high explosives used.
Middle Creek shaft	Middle Creek	77,696.94	73,299	203	255			1,567	20	43		7,212
Phœnix Park	Phœnix Park	53,348.74	50,329	203	273	1	3	1,247	21	28		1,757
Thomaston	Thomaston	117,058.98	110,433	212	472		4	2,497	46	53		7,970
Otto	Branchdale	130,930.14	125,519	220	583	2	1	1,758	38	67		13,682
Glendower	Taylorsville	119,894.48	113,108	210	582		3	2,318	20	59	1	7,185
Beachwood	Mount Laffe	66,101.60	62,360	214	284			1,047	20	32		1,291
Richardson	Heckscherville	71,205.38	67,175	210	318		2	1,372	35	27		17,613
Brookside	Tower City	280,026.56	264,176	289	837	5		5,455	70	99	3	8,625
East Franklin	Tremont	46,769.32	44,122	178	230	2	3	711	9	23		3,596
Pine Forest	St. Clair	116,957.22	110,337	189	511	4	1	4,478	19	31		5,480
Good Spring	Good Spring	77,567.62	73,177	207	320			2,680	32	25	1	5,120
Old Lincoln	Lorbery	324,439.50	306,075	290	734	1	4	7,549	37	77		7,349
Eagle Hill	Eagle Hill	153,736.24	145,034	205	494	2	5	1,431	32	58		9,277
Silver Creek shaft	Silver Creek	227.90	215		253			240	12	12		6,800
North Brookside	Tower City							125	2			426
Lehigh Coal and Navigation Co., No. 8	Coaldale	205,842.24	192,304	236	431	1	2	540	45			15,550
Lehigh Coal and Navigation Co., No. 10	do.	160,151.16	151,086	203	470	1		720	37			7,950
Lehigh Coal and Navigation Co., No. 11	do.	145,442.38	135,323	221	348	1	2	2,160	32	19		9,000
Lehigh Coal and Navigation Co., No. 12	do.	74,159.92	67,132	215	201			1,440	17	39		530
Lehigh Kaska William shaft	Middleport	57,348.12	54,102	156	150			500	20			
York Farm	Pottsville	32,592.88	30,748	138	406	17	6	480	27	22		10,900
Blackwood	Blackwood	91,935.08	89,618	194	465	1	6	4,410	12	30		9,200
Lytle	Minersville	10,600.00	10,000	309	170	10		310	11	12		4,000
New Boston	New Boston	120,573.94	113,749	214	294		3	2,054	56	15		1,600
Morea	Morea	234,463.52	221,192	244	415	1	3	5,700	31	51		7,700
Oak Hill	Minersville	131,866.12	124,402	242	306		2	2,456	20	17		2,501
Greenwood, No. 13	Tamaqua	46,147.10	43,535	234	87			407	4	14		
Flowery Field	Wadesville	8,706.84	8,214	205	45			320				
West Lehigh	Tamaqua	5,766	5,766	220	30			150				
Ellsworth	New Castle	14,271.84	13,164	287	50			120	4	5		

Schuylkill Valley,	do.	12,190.00	11,500	156	67	....	....	260	4	4	...	....
Reserve,	Wadesville,	3,436.52	3,242	200	38	....	....	100	.....	.....	...	....
East Lehigh,	Tamaqua,	4,948.08	4,668	230	21	....	....	150	.....	.....	...	....
Chamberlin,	St. Clair,	9,676.74	9,129	150	50	....	....	150	.....	.....	...	....
Hoocker,	do.	44,913.26	42,371	220	126	....	1	1,004	9	8	1	....
Keckilne,	Thomaston,	4,051.32	3,822	250	25	....	....	120	.....	.....	...	....
Eagle,	St. Clair,	3,843.78	3,513	230	15	....	....	50	.....	.....	...	....
Peach Orchard,	Wadesville,	8,626.28	8,138	200	39	....	1	200	.....	.....	...	....
Red Ash,	do.	2,305.50	2,175	150	22	1	....	50	.....	.....	...	....
Total,		*3,066,092	2,882,550	7,934	10,417	28	52	56,326	732	1,084	6	172,314

* Production is obtained by adding six per cent. to total shipment.

TABLE NO. 3.—*Showing the number of each class of employes at each colliery in the Eighth Anthracite District during the year 1892.*

NAME OF COLLIERIES	Occupations of Persons Employed Inside.							Occupations of Persons Employed Outside.							
	Inside foremen.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All other company men.	Superintendents, book-keepers and clerks.	Total outside.	Grand total inside and outside.
Middle Creek shaft,	4	54	32	47	7	5	149	1	12	13	43	36	1	106	255
Phœnix Park,	3	130	11	39	15	4	202	1	4	7	36	22	1	71	273
Thomaston,	6	126	26	86	18	8	270	2	15	18	86	79	2	290	470
Otto,	8	159	40	130	19	12	368	2	8	21	84	98	2	215	583
Glendower,	6	145	67	155	18	19	410	2	16	19	53	87	2	179	589
Beachwood,	4	65	40	59	14	10	192	1	4	9	39	38	1	92	284
Richardson,	4	89	24	66	5	9	197	1	6	16	31	65	2	121	318
Brookside,	5	139	122	249	33	11	569	2	11	32	104	126	2	277	846
East Franklin,	3	52	20	43	9	2	129	1	6	7	37	49	1	101	230
Pine Forest,	3	165	24	78	13	2	285	2	5	11	94	112	2	226	511
Good Spring,	3	96	27	58	6	3	193	1	8	10	56	50	2	127	320
Old Lincoln,	5	259	104	135	39	1	543	2	8	16	84	81	2	193	736
Eagle Hill,	7	111	39	106	21	16	300	2	6	16	95	73	2	194	494
Silver Creek shaft,	3	7	58	83	2	5	158	1	47	8	....	39	....	95	253
North Brookside,	....	....	....	....	....	....	....	....	....	....	....	....	....	....	9
Kaska William,	....	....	....	....	....	....	....	....	....	....	....	....	....	....	170
Lehigh No. 10,	5	53	5	162	23	13	261	1	5	20	107	75	....	218	479
Lehigh No. 8,	6	49	14	182	27	11	288	1	6	15	82	33	....	142	430
Lehigh No. 12,	2	47	11	65	12	4	141	1	1	6	33	19	....	60	201
Lehigh No. 11,	4	66	12	97	14	9	202	1	4	13	75	53	....	146	348
York Farm,	2	101	60	61	18	10	252	1	13	14	30	94	2	154	406
Blackwood,	3	207	38	17	14	1	280	1	6	8	97	72	1	185	465
New Boston,	2	64	38	19	23	6	152	1	7	21	74	33	6	142	294
Morea,	2	81	15	52	18	9	177	2	10	17	82	124	3	238	415
Oak Hill,	1	77	73	52	8	4	214	1	6	17	40	27	3	94	308
Lytle,	3	22	32	20	2	....	79	2	10	8	....	69	21	110	189
Greenwood No. 13,	....	....	....	....	....	....	....	....	....	....	....	....	....	....	87
Hocker, Mt. Hope,	1	48	8	15	7	....	79	1	2	3	18	15	2	41	126
Schuylkill Valley,	1	26	....	3	7	7	38	1	1	3	10	3	....	18	56
Peach Orchard,	1	14	....	3	4	1	23	1	2	3	57	5	....	68	91
Reserve,	1	16	....	4	3	....	24	1	1	3	7	3	....	15	39

Ellsworth,	1	15	10		4		30	1	1	2	9	6	1	20	50
East Lehigh,															21
Chamberlin,															50
Keckline,															25
Eagle,															20
Red Ash,															25
Totals,	99	2,520	960	2,086	3,757	173	6,205	38	231	356	1,563	1,591	61	3,779	9,984

TABLE No. 4—*List of fatal accidents which occured in the mines of the Eighth Anthracite District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON INJURED.	Age.	Married or single.	No. of orphans.	Name of Colliery.	Location Schuylkill county.	Nature and Cause of Accident in Brief
Jan..	Thomas Thomas	53	M.	5	Otto	Branchdale	Leg broken by a fall of slate; died from the effects.
Feb. 23.	John Kirch	4	S.	...	Pine Forrest	St. Clair	Killed by a fall of coal in a breast.
23.	Ben Lewis	20	S.	...	Otto	Branchdale	Crushed by a mine car and died from the effects.
24.	Patrick Carrol	65	S.	...	Pine Forrest	St. Clair,	Struck by a mine car between gravity road and breaker.
Apr. 4.	Wm. Waggnor	15	S.	...	Brookside	Tower City	Smothered in a buckwheat coal bin in breaker.
20.	Feitta Guiseppe	...	...	...			
20.	Tapero Dominco	...	...	...			
20.	Enrieco Vincente	...	...	...			
20.	Vechette Frinceeso	...	...	...			
20.	Marshetto	...	...	...	Lytle colliery	Minersville	Drowned by the water breaking in from the old McDonalas water level gangway.
20.	Albert Jabeto	...	...	...			
20.	Alevette Petro	...	...	...			
20.	Pernis Ignatzio	...	...	...			
20.	Thos. Buggey	...	...	...			
20.	John Serby	...	...	...			
May 20.	Chas. McNeil	16	S.	...	Brookside	Tower City	Leg caught in monkey rolls; died from the effect.
23.	Jonathan Upligrave	44	M.	5	do.	do.	Fell down East Brookside slope.
23.	Thomas Sharp	55	M.	5	Eagle Hill	New Philadelphia	Smothered by loose coal running on him.
June 30.	David Lewellen	...	...	...	No. 8	Coaldale	Killed by the premature explosion of a shot.
July 5.	Harry Parry	50	M.	3	Pine Forrest	Pottsville	Fatally burned by an explosion of gas.
9.	Michael Mitchell	4	S.	...	York Farm	St. Clair	Killed by a fall of coal.
11.	Michael McDonald	62	M.	...	Eagle Hill	Combulo	Killed by a fall of coal.
20.	Lewis Shoffstale	40	M.	4	East Franklin	Tremont	Killed by falling down a breast manway.
...	Patrick Rogers	17	S.	...	No. 10, T., C. & N. Co.	Coaldale	Car ran over and killed him.
23.	George Kries	22	S.	...			
23.	James Hartyell	24	M.	1			
23.	Wm. Jones	17	S.	...			
23.	Thomas Jones	35	M.	3			
23.	Wm. Weyman	29	M.	3			
23.	Edward Curran	36	M.	3			
23.	John Harrison	32	M.	3			
23.	Christ Homecker	36	M.	3	York Farm	Pottsville	By explosion of fire-damp at York Farm colliery.
23.	Harman Warner	37	M.	3			
23.	Thomas Londers	27	M.	1			
23.	Harry Madara	31	M.	5			
23.	Robert Alcott	42	M.	3			
23.	Anthony Pucavage	33	M.	1			
23.	Anthony Stock	16	S.	...			
23.	Thos. Alcott	17	S.	...			

Aug. 29.	Bart Fleming.				Brookside.	Tower City	Accidently ignited a keg of powder in a croop heading; killing them both.
29.	Wm. McGrath.	40	M.	6	Old Lincoln.	Tremont.	
Sept. 20.	Robert Webb.	18	S.				Died from injuries by being crushed between car bumpers.
Oct. 7.	Joseph Davis.	25	S.		Blackwood.	Blackwood.	Fatally injured by falling down a breast manway.
Nov. 7.	David James.	65	S.		Red Ash.	Wadesville.	Leg crushed in monkey rolls; died from the effect.
12.	John Pope.	50	S.		York Farm.	Pottsville.	Killed by a fall of coal.
17.	Felix Mackanuskey.	30	S.		Morea.	Coaldale.	Struck by a dirt dumper; died from the effects.
21.	Valantine Harman.				L. C. & N. Co.		Killed by a fall of coal.
Dec. 13.	Michael Tearney.	45	S.		Pine Forrest Red Ash slope.		Killed by a fall of roof.
21.	Ben Starr.		M.		Phœnix Park No. 3.		Killed by a fall of roof.
21.	Harry Focht.	21	S.		East Franklin.		Fatally injured by being struck by a dirt dumper that was accidently rushed over the head of the dirt plane.

TABLE NO. 5.—*List of Non-fatal accidents which occurred in the mines of the Eighth Anthracite District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON INJURED.	Name of Colliery	Location County.	Nature and Cause of Accident in Brief.
Jan. 5.	Frank Herb,	Good Spring,	Schuylkill,	Arm broken by falling from a trestle.
12.	William Droy,	New Boston,	do.	Small bone of his leg broken by a fall of clod.
11.	Michael Darley,	Richardson,	do.	Burned by an explosion of gas.
16.	George Harrison,	Pine Forest,	do.	Head injured by being struck by a piece of coal
19.	William Long,	Lincoln,	do.	Leg broken by coal from a premature blast.
28.	Edward Reinhol,	Blackwood,	do.	Leg broken by a fall of coal.
Feb 3.	John Brenan,	Glendower,	do.	Face and hands burned by gas.
24.	John Anly,	York Farm,	do.	Burned by gas.
24.	Elias Anly,			
23.	James Devlin,	Eagle Hill,	do.	Seriously injured by a premature explosion of a shot.
27.	John Moran,	Otto,	do.	Feet injured by falling under a mine car.
March 2.	John Kilnitzke,	Morea,	do.	Injured by a fall of coal.
4.	Clay Burcheal,	Richardson,	do.	Slightly burned by gas.
11.	Mick Laduske,	Glendower,	do.	
23.	James McGuire,	Eagle Hill,	do.	Injured; fell against a drill.
24.	John Hopkins,	Phenix Park No. 3,	do.	Burned by an explosion of gas ignited by a shot.
24.	Charles Hopkins,			
24.	John Brenan,	Thomaston,	do.	Collar bone and ribs fractured by being struck by a pully in the slope.
April 4.	Camillo Lenara,	Blackwood,	do.	Injured by being caught between a car and schute.
7.	John Romanko,	do.	do.	Arm broken; fell from a trestle.
19.	John Neidlenger,	do.	do.	Injured by being kicked by a mule
May 3.	Charles Corse,	York Farm,	do.	Slightly injured by being caught between car and door.
10.	Morgan Rader,	Lincoln,	do.	Body squeezed between cars.
11.	James Turish,	Eagle Hill,		
18.	Isaac Lewis,	Orchard vein	do.	Leg broken by a fall of slate.
18.	Patrick Rogers,	Phenix Park,	do.	Slightly burned by gas.
23.	Otto Dinner,	Oak Hill,	do.	Arm broken by falling in breaker.
June 7.	John Collier,	Eagle Hill,	do.	Foot injured by being struck by a piece of timber.
7.	John Brown,	do.	do.	Leg broken by a fall of slate.
7.	Joe Mutson,	York Farm,	do.	Injured by a fall of slate.
11.	Charles Lehensky,	New Boston,	do.	Arm broken and head cut by a fall of slate.
11.	Jacob Hess,	Thomaston,	do.	Leg hurt by being kicked by a mule.
18.	Fremont Saltzer,	Brookside,	do.	Ribs fractured by falling under a car.
23.	Simon Kerwin,	Thomaston,	do.	Hand hurt by falling under a car.
July 1.	Carter Boldare,	Blackwood,	do.	Foot hurt by fall of slate.
5.	William Rogers,	Mount Hope,	do.	Leg broken by fall of coal.
16.	William Roland,	East Franklin,	do.	Slightly injured by being thrown from a mule.
22.	Nuton Sluflish,	Thomaston,	do.	Head and face hurt by a premature explosion of a blast.

August.	30.	Frank Litzel,	York Farm,	do.	Leg broken; a lever fell on him.
	4.	Daniel Zimmerman,	Blackwood,	do.	Injured across hips by being struck by a car.
	13.	George Bowan,	Oak Hill,	do.	Lost his arm by a fall of slate.
	22.	Patrick Booen,	Eagle Hill,	do.	Leg broken by a fall of coal.
Sept.	20.	Nathaniel Zottezham,	East Franklin,	do.	Back hurt by a premature explosion of a shot.
	29.	Will Potts,	Lincoln,	do.	Back hurt by a fall of slate.
	28.	James Fox,	York Farm,	do.	Injured by the breaking of a hoisting rope.
	31.	Joe Markledge,	do.	do.	Injured by a fall of roof.
Oct.	11.	John Shanaglan,	Thomaston,	do.	Body and legs injured by a fall of coal.
	12.	James Durkin,	Glentower,	do.	Hip injured by a fall of coal.
	27.	George Werwebsele,	East Franklin,	do.	Injured about hips by being caught between railroad cars on the surface.
Nov.	14.	Harry Bremer,	Old Lincoln,	do.	Leg broken and back injured by a fall of rock.
Dec.	21.	Jefferson Keating,	Morea,	do.	Severely burned by igniting a keg of powder.
	21.	Michael Lehauvich,			
	21.	John Johnson,			

BITUMINOUS MINE DISTRICTS

FIRST BITUMINOUS DISTRICT.

(ALLEGHENY, FAYETTE, GREENE, WASHINGTON AND WESTMORELAND COUNTIES.)

Hon. THOMAS J. STEWART, *Secretary of Internal Affairs*:

SIR: I have the honor of presenting herewith my annual report as Inspector of mines for the First bituminous district, for the year ending December 31, 1892.

There were 24 fatal accidents, being an increase of 4 over the previous year.

Each fatal accident is recorded, in brief, in the usual table, but a more extended report of them will be found in the part headed "Fatal Accidents."

The number of non-fatal accidents as reported to the writer is 67, but the operator's annual report shows 87, being an increase of 15 of the former, and 19 of the latter over the year 1891.

The production of coal was 356,172 tons over that of the previous year. A large percentage of the output of coal in this district was cut off by a strike of the Monongahela river miners against a reduction of ½ cent per bushel, but as the railroad mines in the district increased their output somewhat, the difference is not so great as it would have otherwise been.

As some of the mines located on the Monongahela river have railroad shipping facilities, I have, for those interested, marked those who can ship over Monongahela division of the P. R. R. with an asterisk, and those who can ship over the Belle Vernon division of the P. & L. E. railroad, with a dagger.

The above mines were not affected by the river miner's strike, and as a consequence were in operation. A few of the mines on the river were also in operation from time to time during the strike.

I am pleased to state that the condition of the mines (in general) as regards ventilation and drainage is steadily improving. With this end in view, the following ventilators have been placed in position during the year, viz: Seven fans and five furnaces; two shafts have also been sunk.

I find that there is a general disposition on the part of the operator's

to obey the provisions of the law, as regards the safety and welfare of their employes.

By reading the description of the mines it will be readily seen that the means of transporting the coal out of the mines with dispatch and as cheaply as possible, has not been lost sight of, for the endless and tail-rope systems of haulage have been placed in six mines of this district during the year.

It is with feelings of regret that I cannot give, in this report, any encouragement in regard to accidents, as both fatal and non-fatal have increased during the year. Some of these could have been prevented by ordinary care on the part of the unfortunates themselves, while others were, beyond doubt, unavoidable accidents. Hence, it is evident to those who work in or about the mines that they should ever have this in view, that eternal vigilance is the price of safety.

I give the following additional accidents merely as a matter of record, as it is an open question whether such come under the act of June 30, 1885:

John Havack, a "trimmer," employed at the Allen mine, was fatally injured December 7, by being run over by a flat car, while dropping the same from under the tipple to the switch. Havack was standing in front of car when he fell off, with the result as above stated; he died some three hours after being hurt. Havack was aged 18 years, and was single.

On June 4, Charles White had his right arm badly mangled by being caught between two flat cars at Watson mine while trying to couple them. Arm amputated afterwards.

In closing this report I beg leave to return my sincere thanks to all with whom it was my duty to have official intercourse for the uniform courtesy which has been extended to me during my incumbency as Inspector of mines for this district.

All of which is respectfully submitted.

HENRY LOUTTIT,
Inspector.

MONONGAHELA CITY, PA., *January 28, 1893.*

MINING STATISTICS.

Number of mines operated in the district,	73
Number of tons of coal mined,	4,299,437
Number of tons shipped,	4,299,020
Number of days worked as reported,	10,460
Number of persons employed inside,	8,642
Number of persons employed outside,	751
Total number employed,	9,393

Number of horses and mules,	564
Number of mine locomotives,	4
Number of steam boilers,	74
Number of kegs of powder reported as used in the mines,	8,672
Number of fatal accidents,	24
Number of non-fatal accidents,	67
Number of tons produced per each fatal accident,	179,143+
Number of tons produced per each non-fatal accident,	64,170+
Number of widows by these casualties,	12
Number of orphans by these casualties,	53
Number of persons employed per fatal casualty,	391+
Number of persons employed per non-fatal casualty,	140+

CAUSES OF ACCIDENTS.	Fatal.	Non-fatal.
By falls of slate,	13	26
By falls of coal,	2	5
By falls of coal and slate,	2	2
By cars,	3	13
By being caught between car and coal pillar,	2	1
By dilly trip,	2	1
By fall of "horseback,"		3
By fire-damp,		8
By other causes,		8
Total,	24	67

MINES LOCATED ON THE PITTSBURG AND WHEELING DIVISION OF THE BALTIMORE AND OHIO RAILROAD.

Anderson.—When examined, December 29, this mine was in a fair condition as regards ventilation and drainage. Outlet air measurement, as shown by the instrument, 21,400 cubic feet.

Eclipse.—The ventilation and drainage of this mine was not satisfactory in parts of it. Persons employed inside, 137; outside, 4. Examined December 19.

Hackett and Germania.—On my last examination of these mines I found them both in fair condition. Fourteen thousand three hundred and seventy cubic feet of air was entering the former mine and 18,330 the latter.

Snowden.—When examined, December 30, the ventilation was somewhat inadequate in parts of the mine. This condition of affairs was, in part, due to the fan being disabled; and in consequence it could not be run to its full capacity. Inlet air measurement showed 11,600 cubic feet entering the mine.

Nottingham.—Employs 134 miners, 15 boys and 10 other persons inside and 7 outside.

During the year they have built a new ventilating furnace, which should produce sufficient quantities of air for the mine for some time to come.

Gastonville.—During the year a haulage plant has been put in this mine. The company is opening up a new field of coal, which is about one mile from the engine house. The haulage plant will be extended to the new field in the near future, the new opening being near the axis of the "Pin Hook" Anticlinal. The entry, when driven, raised 26 feet in 150 yards, and at this writing is still on the rise. Another is being driven in the basin, which shows a dip of nine feet.

The new field of coal is well known for its excellent qualities. I am informed that in the year 1846 there was located near here a gun, shovel and sickle factory, which was supplied with coal from an opening in this field. In later years a woolen and carding factory and also an axe factory used this coal. Later developments in the use of the coal has showed that the views of the early settlers on its quality were well founded. In connection with this field the company has built for the workmen forty four-roomed houses, each block stands on a lot of 40 feet front and runs back 205 feet, with a 30-foot street in front. The company has also built a church and a school house, the latter is to educate the young in the day time and the workmen at night. General condition of mine fair.

MINES LOCATED ON THE BELLE VERNON DIVISION OF THE PITTSBURG AND LAKE ERIE RAILROAD.

Sheppler.—This mine consists of six butt and two face entries. Ventilation is produced by rarifaction, made by a fire placed on a grate surface of "T" iron. Owing to the dip of the coal measures here, the mine is somewhat troubled with water. Horsebacks and thick slate are also sources of annoyance, but I take it that as the mine is worked away from the axis of the anticlinal these faults will not be so troublesome. On my last examination the ventilation was not satisfactory in some parts.

Large.—Examined December 6 and found the same in fair condition. Improvements made in this mine during the year consist of a Munday haulage engine, 8″×12″, placed on a bed plate. The drums are 30″×3. The wire line is one-half inch in diameter. The tail-rope system is used for the first 500 feet from engine house, and for the next 500 by gravity plane. To bring the coal from the working faces to the gravity plane station, mules are used.

Manown.—When examined, December 15, the general condition of the mine was satisfactory. Two 2-flued steam boilers, 20′×45″, and one 22×24 Norwalk air compressor have been erected with a view to mining coal by machinery.

Cleveland.—Worked on the double entry system and ventilated by furnace power. This mine is opened up in part of the old Speer mine,

and when the former company was driving their main entry they struck the old works of the latter mine, which had fallen in. This was gone through and well timbered. Part of the time that this work was being done the ventilation was very poor. When the solid coal was reached the air was so polluted by black damp (carbonic acid gas) that the work had to cease until it was removed, and the only way to do this was by going through some old workings, part of which were closed by falls, to a shaft. This was done and a furnace built at the bottom of same, which produced sufficient quantities of air to reach the shaft by another route. The company is making arrangements to buid a new furnace. The drainage of the mine is by 3,500 feet of 3-inch syphon pipe. On examining the mine, December 3, I found it in a fair condition.

MINES SHIPPING COAL OVER THE MONONGAHELA DIVISION OF THE PENNSYLVANIA RAILROAD.

Allen and Acme.—Examined December 8th and 15th respectively and each mine was found in a satisfactory condition.

Fidelity.—When examined last, was, as regards ventilation and drainage, in a satisfactory condition.

Charleroi.—A new opening situated 3,600 feet northwest of the station at Charleroi.

The coal lies on the high bluffs back of the Monongahela river the elevation of the coal at the mouth of the main entry being 190 feet higher than the top of the rail of the Pittsburg, Virginia and Charleston railway, where the Charleroi Coal Company's lateral railroad crosses with an overhead 60 foot span bridge to reach their tipple.

The work of driving the main entry was commenced on March 16, 1892, construction in general, April 1st, and active operations on September 6, 1892.

The coal is conveyed from the mine by mules at the present time, but when the entries are advanced far enough to justify a haulage system, it is the company's intention to put a complete system in operation.

The coal is conveyed from the mine to the tipple by means of an incline, operated by a haulage engine placed in position near the mouth of the main entry; the distance along the incline from the latter place to the west right-of-way of the Pittsburg, Virginia and Charleston railway, is 1,676 $\frac{4}{10}$ feet, the alignment being a perfectly straight line, and the profile shows a 16 per cent. grade for 500 feet, and then a long concave grade takes place until within 400 feet of the tipple, where 16 inches per hundred is used.

Six hundred and fifty feet of the incline is constructed on a firmly built trestle, and the other part of the road-bed is built on the natural surface of the ground, having light embankments and excavations.

To mine the coal to the best possible advantage, and to secure the greatest quantity of coal that the company has purchased, the main en-

try had to be driven on a course of south 56°, 05° west, and provided no swamps occur and good drainage can be secured, this entry will be driven in a straight line until it reaches an opening on the head-waters of Maple Creek—a distance of 5,600 feet.

The ventilation is obtained by a furnace, and when this proves inadequate, a fan will take its place.

When examined last the condition of the mine was satisfactory.

Courtney.—When examined last this mine was in fair condition.

MINES ON THE MONONGAHELA RIVER.

Eclipse.—In operation 130 days during the year. Persons employed, 90.

Extensive improvements have been made in and about this mine, consisting of a new coal tipple, with new abutments, two ice breakers which stand 32 feet above low water mark. A ventilating fan 18 feet in diameter driven by a 14″×16″ engine. A pair of two flued boilers 46″ in diameter and 26′ long. The engine house is made of iron, as is also their blacksmith shop. From drums on engines to wheel inside is 5,700 feet, the wire line is $\frac{11}{16}$″ in diameter.

The road over which the dilly-trip is to run is laid with steel rails, 25 pounds to the yard.

This company has spared no expense to make this mine a first-class one.

Knob.—Was not in operation on my last visit. In operation 244 days during the year.

Greenfield.—This mine is worked in two sections, known as the Front and Back Hills respectively. The Front Hill was in fair condition when I examined it on December 5. Examined the Back Hill on the 7th, and found it in fair condition.

Champion.—Not in operation when last visited. Extensive repairs and improvements were being made at this time, consisting of a stationary engine and wire line. Length of line from wheel inside mine to drum on engine is 5,147 feet. Size of line, $\frac{11}{16}$ of an inch. Engines, 12″×12″. Steam boiler 28 feet long and 40 inches in diameter. A new road has been laid and a great deal of timbering done in the mine.

Crescent.—Number of men employed inside, 88; outside, 5; entries being driven, 4. An endless rope haulage has been put in this mine during the year. A ventilating furnace has also been built, with 12 foot arch, $5\frac{1}{2}$ feet in heighth and 8 feet in width, placed at the bottom of a 65 foot shaft.

Clipper.—Not in operation when I made my last visit.

†*Milesville.*—Improvements made during the year consist of a new railroad tipple and a ventilating fan, 16 feet in diameter. Previous to the erection of the fan I found the ventilation in parts of the mine inadequate owing to the furnace not having the capacity to produce the quantities of air needed for the number of persons employed inside.

When the fan was placed in position I found there was not much improvement in the sanitary condition of the mine. This was not the fault of the fan as it was producing sufficient air for the men, but it was not under control, a large quantity being fugitive; but as their stoppings are in good order and the air coursed in its proper channel, there should be no cause of complaint on account of the ventilation.

†*Lovedale.*—In fair condition when examined last.

Old Eagle.—When examined, December 9, I found the general condition fair.

Washington.—Worked 187 days during the year. Total number of persons employed, 117. A stationary engine and wire line has been placed in this mine for haulage. The hauling line is three-fourths of an inch thick and 1,500 yards in length, and tail line five-eighths of an inch in diameter. They have replaced the tracks in the mine with 25 pound and 16 pound iron.

To shorten the hauling route as much as possible they have driven an entry (part of which was through old workings) 1,290 feet.

They have also made a double parting inside that holds 50 cars.

Umpire.—In the early part of the year the ventilation of this mine was not up to the legal requirements in part of it, but since they sunk a shaft and built a furnace the air current has been satisfactory.

**Globe.*—In fair condition when last examined.

Little Redstone.—Not in operation on my last visit. Extensive improvements were being made at this time, consisting of a steam haulage. The engines are 12′×16′, length of line 5,000 feet, size $\frac{5}{8}$′. They intend to use 40 car trips. The steam boiler is 28 feet in length and 42 inches in diameter. The old hill workings have been abandoned. The haulage system is laid in the tunnel and New Hill workings. Condition of mine fair.

Little Alps.—When I made my last examination of this mine, I found the ventilation was not up to the legal requirements.

Rostraver.—This mine was in fair condition when last examined. It has been idle for some years until purchased by Mr. James Jones who built a new incline and river tipple. Improvements in the interior of the mine were also made.

Caledonia.—When examined last was in fair condition as regards venilation and drainage. Cubic feet of air at inlet, 18,800 feet.

Hilldale.—This mine was not in operation when visited last. They were making repairs on incline.

**Vigilant.*—Ventilation produced by a furnace, assisted by the exhaust steam from a pump. Number of persons employed inside, 114, outside, 8; entries being driven 8. General condition of mine, fair.

Stockdale.—This mine is nearly exhaused, only drawing pillars. Inlet air mensurements 5,700 cubic feet. Number of persons employed inside, 23. Condition of mine, satisfactory.

Snow Hill.—Worked 164 days during the year. Condition of mine, fair. The company has put up a ventilating fan 20 feet in diameter. Owing to the mine not being in operation since the fan was erected I have not been able to test its capacity, but I take it that it will produce sufficient quantities of air for a large extent of territory.

Jefferson.—The company is opening up a new tract of coal of 122 acres in area; it is located northwest of the old mine. To get to the new field it was necessary to cross a ravine by a trestle 125 feet in length and 25 feet in heighth. The openings are made by two butt headings. The average butt line is north, 60; west, 30 degrees.

The entries have been driven some 1,400 feet and a uniform rise of one foot to the 100. Two face entries have been started. The coal is comparatively clean so far. When examined last the condition of the mine was fair.

**Buffalo.*—No coal has been mined here with picks since September 30, 1891. During the year an electric mining machine company has been experimenting with its machines in this mine. The general result was not satisfactory.

Amity.—On my last examination of this mine I found it in fair condition as regards ventilation and drainage.

Albany.—Examined December 27th general condition satisfactory. Outlet air measurement showed 28,800 cubic feet.

Black Diamond.—On my last visit to this mine the ventilation was not satisfactory. A ventilating fan 20 feet in diameter has been erected and should produce sufficient quantities of air for the mine for some time to come.

Fayette City.—In my annual report for 1891, I mentioned that it was the company's intention to put up a ventilating fan. One 16 feet in diameter has since been placed in position. When I examined this mine I found that a large quantity of air was escaping into places where it was doing no good. This was due to some old workings which the air current had to pass; to remedy this they were putting in stoppings.

By a proper distribution of the air which the fan is capable of producing, there should be no cause for complaint as regards ventilation in any part of the mine.

†*Ella.*—This mine is worked on the double entry system and ventilated by furnace power.

The coal is hauled from the working places by mules to a double parting; from the latter point, a trip of ten cars is dropped (wire line attached) a distance of 1,800 feet by gravity to tipple. The empties are then returned by a stationary engine. In driving this main entry they came too near the crop, which necessitated the timbering of the same for 175 feet.

A rock fault was also met through which the entry was driven 76 feet. The rooms are worked 21 feet wide, leaving a pillar of coal 12 feet to bring back. The condition of the mine on my last visit was fair.

Cedar Hill.—This mine is nearly exhausted and was not in a very good condition as regards ventilation and drainage when examined last.

Rock Run.—When I visited this mine last it was not in operation. A few men were at work repairing and sinking a shaft for ventilating purposes.

Stony Hill.—The condition of the above mine is such that the ventilation cannot be improved much by the present mode of working. I have suggested to the operator, the putting in of a fan.

Tremont.—During the year, mining machines of the Jeffry pattern, run by compressed air, have been put in at this mine, also, a new ventilating furnace, 6 feet wide, 3½ feet high above bars, with an arch 21 feet long. Previous to the erection of this furnace the ventilation in parts of this mine was not satisfactory.

Vesta No. 2.—(Formerly American.) Very extensive improvements have been made in and about this mine during the year. A ventilating fan has been put up which is 25 feet in diameter, fan engine 18×23 inches, direct acting. A complete haulage system has been put in, engines are 16×42 inches, coupled direct on drums, the latter are 5 feet in diameter and 4 feet wide. The present distance which the coal is hauled by the engines is 5,500 feet. The wire line is $\frac{5}{8}$ of an inch in diameter, the average number of cars in each trip is 35. Steam for operating the plant is supplied by a boiler 42 inches in diameter, and 30 feet long. The electric signal system is also used; by this the trip-rider can communicate with the engineer on any part of the haulage way. They have relaid the road from the tipple to the rear of workings with 30 pound steel rails. A building has been built for their engine and boiler. When the mine was examined last the general condition was satisfactory.

**Ivil.*—In operation 220 days during the year. Total number of persons employed, 181. Condition of mine at my last examination, fair.

Vesta No. 1.—A new opening located north of the village of Allenport. A new iron river tipple has been built, the whole resting on three stone piers. A 25-ton coal crusher has been erected, run by an engine 18×24 inches. A haulage plant will be put in with engines 16×30 inches, with drums 4 feet in diameter, and all necessary appliances for the same. All mining at the present time is done by the Harrison mining machine. General condition of mine, satisfactory.

Horner & Roberts No. 4.—Worked 120 days during the year. To facilitate the drainage they have cut 2,600 feet of drain through the coal and limestone. By this they have dispensed with the use of two hand pumps which were a source of much annoyance and expense to the management.

**Beaumont.*—When examined last was in fair condition as regards ventilation and drainage. During the year the company has built a

trestle to the river with other improvements necessary to ship coal by water.

Camden.—When examined last this mine was not running to its full capacity.

Outlet air measurement showed 58,560 cubic feet. General condition of mine fair.

Among other improvements made at the mine during the year was the putting in of a small pair of 6×8 engines, wire line, etc.

These engines are used to pull the empty cars from the check house to the station, a distance of 600 feet, where the tail-rope system of haulage takes hold of them. Heretofore the cars had been moved by mule power to the aforesaid station.

Stone.—Was not in operation when I made my last visit.

Mongah.—This mine is located on the east side of the river, opposite Monongahela City. It is opened on the three entry system, leaving a pillar of coal between entries of 30 and 43 feet, respectively. In driving the entries they encountered a swamp which carried the coal down some 27 feet below the level of the mine entrance. They have a great deal of trouble with a soot vein in the roof. No cross entries have been started yet. Examined this mine November 12, and found it in fair condition.

†*Bunola.*—Examined this mine November 29. The general condition was satisfactory.

**Blythe.*—On my last examination, November 18, I found it in a satisfactory condition. Among the improvements made at the mine during the year is a trestle 1,240 feet in length, connected with a new river tipple which they have also erected, so that they can either ship coal by rail or river as they may elect.

**Catsburgh.*—Examined, December 20. General condition of same satisfactory. During the year the company has sunk a shaft 8×10 inches, and placed a fan 16 feet in diameter at the top of it. They also put down a shaft for ingress and egress, and made an extension of their hauling road. Their new double parting is 600 feet long and 17 feet in width.

The roof coal on the haulage way has been taken down for some 500 yards, which is a great improvement.

Walton's Upper Mine.—When I visited this mine, on December 1, it was not in operation. I measured the air current and found 38,240 cubic feet passing through the furnace. All of the air was produced by natural forces. This mine is the most extensive in the district, employing on an average, 365 miners, 13 boys and 23 day-hands inside and outside.

The average output of coal last *run* was 25,500 bushels, over a 1½ inch screen. The ventilation is produced by a furnace having an average capacity of 66,000 cubic feet per minute.

Walton's Lower Mine.—This mine was not operated during the entire year.

Fulton.—This mine was only in operation 20 days during the year.

H. D. O'Neil.—Not in operation on my last visit. They are opening up a new field of coal, which the company has lately purchased.

**Banner.*—When examined, November 14, the ventilation in parts of the mine needed improvement. Drainage, fair; persons employed inside, 126; outside, 11. Outlet air measurement, as shown by the instrument, 15,050 cubic feet.

Bellevue.—When examined last the general condition of the mine was fair.

New Eagle.—When examined, November 11, they were employing 20 miners, 3 boys, 1 driver and 2 other persons. This mine has been idle for some years. During the early part of the year the mine was leased by the owner (Hon. James H. Hopkins) to T. F. Cain, who immediately put men to work to get it in order to ship coal. Entries were cleaned up and roads laid inside, but when an attempt was made to span the Monongahela division of the P. R. R., the railroad company objected and tore down the work put up by the coal company. The former company claiming that the timbers crossing their tracks were not of a sufficient heighth for them. The coal company claims they are in the right, basing their claims on the original right-of-way. The matter at this writing is still in dispute.

Abe Hays.—On examination of this mine I found it in a satisfactory condition.

Merchant.—Only employs six persons at the present time.

Cincinnati.—When visited, November 11, there were only a few persons at work, cleaning up and making repairs.

Climax.—Among the improvements made at this mine, during the year, is a new tipple and a ventilating fan. The fan is 7 feet in diameter and calculated to run at a very high velocity. The mine-boss informed me that it produced 28,702 cubic feet of air when running at 320 revolutions per minute. At the time of my last visit the fan was not running and consequently I could not make any tests as to its capacity.

**Cliff.*—Number of persons employed inside, 66; outside, 7. Condition of mine, on last examination, fair.

Coal Bluff.—When I examined this mine last, the ventilation in some parts was not in a satisfactory condition.

Allequippa No. 1.—Located at Camden station, on the Monongahela Division of the Pennsylvania railroad. The main workings of the mine lie nearly two miles from the river and are reached by two inclines. The first is 500 feet long, and stands on an elevation of 160 feet above the tipple. The second is 1,400 feet long, and raises 120 feet in this distance. From check house No. 2 to the "engine plane" engine house, the elevation is about 70 feet. The boiler to supply steam for engines is of steel,

42 inches in diameter and 28 feet long. The water used in the boiler is pumped from the river by a double acting Wilson and Snyder pump. The coal is hauled out of the mine by a pair of engines 14″×24″ coupled 3 to 1, with three drums loose upon the shaft. No. 1 drum is 5 feet in diameter, flange 8 inches and 30-inch face, friction clutch. Drums Nos. 1 and 2, 8-inch flange, 20-inch face and 4½ feet in diameter, with positive clutch-band brake with foot lever convenient to steam throttle, so that the engineer need not leave his position. No. 1 drum is used to check the full trip (generally 63 cars) a distance of 6,700 feet to check house and haul the empties back. The wire line used is steel, ⅞ of an inch in diameter. Drums Nos. 2 and 3 are used to haul the empties from No. 2 parting to No. 3, a distance of 3,000 feet, and also to move the full cars out. The wire line used on the former is ⅝ of an inch and the latter ⅞ of an inch in diameter. The electric signal system is used. The mine at present has 11 butt headings, from which the coal is hauled by mules. The double parting (where the haulage system is laid) being at the lowest point for a greater part of the mine workings, makes the haulage (by mules) in favor of the load.

This mine was originally opened up on the single entry system, but it is now in the greater part, on the double entry method of working. A furnace 9 feet wide and 4½ feet in height, with an arch 30 feet in length, has been placed at the bottom of a 135-foot shaft to produce ventilation. With an ordinary fire 60,000 cubic feet of air was measured. No. 2 mine lies west of No. 1, and has three butt entries, and is ventilated by a furnace 12 feet long, 7 feet wide and 4 feet high; shaft 62 feet deep. The coal is hauled from this mine by mule power to the station of the engine plane of mine No. 1, and with the coal of the latter mine to the river.

† *Watson.*—Number of days worked during the year, 234; number of persons employed, 184. When visited last it was not in operation, only a few persons being at work making repairs.

DUNLAP'S CREEK MINE.

Chalfant.—This is a small opening located near Browsville. Number of persons employed, 18. The production of this mine is sold to local trade. Ventilated by furnace power.

GREENE COUNTY MINES.

A small group of mines located near Waynesburgh employing from two to eight persons. The product of these mines is sold to local trade.

FATAL ACCIDENTS.

Paul O'Dell, aged 53 years, employed in Banner mines, was instantly killed on January 7th by a fall of coal on main entry. The deceased, with a number of other miners, was making a double parting between

entries 25 and 28. At the time of the accident O'Dell was "bearing in" and had a piece of work done about six feet long and three feet deep, when some six bushels of coal fell from the face upon him, with the above result. At the place where the accident occurred the limestone was taken up on the main entry, and when the falling coal struck the deceased the body fell four feet into the middle of the road. He leaves a wife and five children.

John Lundy, a miner, was instantly killed by a fall of slate in room 31, entry 27, in Black Diamond mine on February 1st. From the position of the body when found, and other surroundings, it seems that Lundy was shoveling under the slate when it fell on him. It is not positively known at what time the accident happened, but it is supposed to have been nearly three o'clock in the afternoon. When the day's labor was over and on Lunday's failing to appear, an alarm was sounded and two boys were sent into the mine to see what was wrong. On arriving at the face of the room they found the body of the deceased lying out from the slate, and it is surmised that he was caught between the slate and roof coal post, which was standing close to the edge of the slate. Lundy was 40 years old and single.

John Gaffeny was fatally injured and Carlo Baradun slightly injured by being caught by the "dilly trip" at Ivil mine on February 9. Gaffeny died on March 19. Two versions were given as to the manner in which this accident occurred. The first was by the injured persons themselves and is as follows: Gaffeny and Baradun said that the "dilly trip" was standing in the pit mouth and they were trying to get past, when the engineer started the trip, and as a consequence the cars caught them with the result as above stated. The outside hands' statements are as follows: They say that both men were riding on the "dilly trip" and in the attempt to get off they fell beneath the cars. Riding on the "dilly" is prohibited at this mine but this rule is very often violated. Gaffeny leaves a wife and five children.

R. Constania, a miner, was fatally injured in Banner mine on February 12, by a fall of coal and slate, and died three hours after.

The deceased was working in room 14, entry 29. At the time of the accident he was "bearing in." The room was 28 feet wide, and the tight showed evidence of being shot, leaving a butt of about 16 feet long and some 4 feet deep. Some five or six cars of coal fell together with the slate. One piece of coal measured 2×2 and 5 feet long. This was lying immediately in front of where the deceased had been "bearing in." He had a sprag under the coal, but it broke over it as the space was too long.

Deceased leaves a wife and three children.

Storey F. McFeeley, a miner, aged 50 years, was instantly killed February 27 in Cincinnati mine by a fall of slate. The deceased worked in entry 3, room 1.

On examination of this room after the accident I found it in a terrible condition. Slate had been standing back from face of room for a distance of 20 feet and some 15 feet wide near edge of gob, and from this to the face it was 10 feet high. This quantity of slate fell, part of it on the deceased. The latter and his son worked together, and at the time the slate fell they were filling a car. The slate also struck the latter but fortunately did not injure him much.

McFeeley leaves a wife and five children.

Thomas N. Davis, a miner, aged 58 years, was killed instantly by a fall of slate on March 1, in entry 17, room 3, Knob mine.

The deceased and George Gibson were working together, and had been taking down slate, and had fired a shot in some of it. There was still some of it up, and the deceased suggested to Gibson that they knock some more down by putting a shot into it. This being agreed to, Davis took a pick and was in the act of stamping a hole for the drill when Gibson heard something move and called to Davis to "look out," but it was too late, a piece fell out about 2½ feet long and 2½ feet wide and fell on him with the above result.

Sabbo Burner, aged 24 years, and single, was instantly killed March 1, in entry 1, room 24, Albany mine.

The deceased was knocking down coal, and while doing so a piece of slate 4½ feet long, 1 foot wide and 10 inches thick fell on his head, another piece 3½ feet long, 15 inches wide and some 10 inches thick fell and struck him on the back. Stephen Barrick worked with the deceased. John Kenney was in the room at the time of the accident, and previous to the slate falling called the attention of the deceased to the dangerous condition of the slate, as did two or three other persons, but he paid no attention to them.

Charles Rosenberg, a miner, aged 39 years, was fatally injured March 18 by a fall of slate in room 5, entry 16, Milesville mine. He died on the 19th.

At the time of the accident the deceased was "bearing in." The room was an open end one and a slight squeeze was on the face, which made the place somewhat dangerous, and would necessitate careful work to prevent an accident. The slate that fell on him was 7 feet long, 5 feet wide and 10 inches thick.

Inquest held and a verdict of accidental death rendered. Deceased leaves a wife and three children.

Angley Pertrini was fatally injured on main entry in Banner mine by being caught by dilly trip. He lived some three hours after being hurt.

The deceased was on his way out of the mine, and it is supposed that he stepped on the empty line and that he thought that the trip was going out, but unfortunately for him he was mistaken, and when he stepped to the middle of the road the trip struck him with the result as stated above. Inquest held and a verdict of accidental death rendered. The deceased was 45 years of age and leaves a wife and seven children.

Thomas McCahill, fatally injured April 18 in Black Diamond mine by being caught between cars and rib.

On the evening of the above date McCahill was riding out on the cars, as he was wont to do (although he knew it was against the rules), and when he came to the mouth of the traveling-way he jumped off, and his coat caught on the car and threw him in such a manner that he struck the corner of the rib, and before he could recover himself the cars caught him and dragged him about twenty-two feet. Died two days after. He leaves a wife and 10 children.

John Ashton, a miner, was fatally injured on April 19 in room 26, entry 1, Fidelity mine, by a fall of coal; died May 7.

Deceased and Thomas McDermott worked together. In examining the place where the accident occurred I found a middle shot had been fired, which did not knock the coal but shattered it somewhat. It seems nothing was done with this part of the room to put it in a safe condition; but, on the contrary, Ashton started to "bear in" under it, when about two cars of coal fell on him. It was the unfortunate man's first day's work in the mine.

Ashton was a single man. His age could not be ascertained.

Edward Freycent, aged 44 years, was instantly killed in Catsburgh mine May 19 by a fall of slate in No. 40 air-course, 20 entry.

John Butterhead and deceased worked together in the air-course. Butterhead said that previous to the accident they were loading a car and he told the deceased that it would be better to set a post under the slate. Witness started to get a post, and instead of deceased waiting for the post to be brought and set, he went under the slate to knock some coal, when a piece of slate in the form of a triangle, some 8 feet in legth, 4½ feet wide and 10 inches thick fell on him.

Freycent leaves a wife and one child to mourn his untimely death.

Peter Barsoda, a miner, aged 18 years, was fatally injured May 13, in entry 1, room 26, Allen mine, by a fall of slate; died some 4 hours after being hurt. The slate measured 6×4 feet, and was 10 inches thick. He was single.

John H. Burgan, a driver, employed in Manown mine was fatally injured on June 18 by being run over by cars. Died in two hours after. The deceased was moving his trip of four cars toward the tipple and called out to the "trapper," who attended a door at mouth of entry, to know if all was right; being answered in the affirmative, Burgan kept coming on for awhile; all of a sudden he stopped, as a driver intended to go in his entry for a trip when Burgan came out, he waited a while and being somewhat longer than usual, this driver went to seek him, when he got to Burgan's trip he found him, Burgan, under the third car of the trip. The deceased said that he got off to stop his trip when his heel caught between the board and the floor, throwing him down and under the cars. He leaves a wife and 4 children.

Frank Valentine was fatally injured in room 2, entry 9, Greenfield mine, by a fall of slate on July 21; died in hospital. John Kenwick and deceased worked together, and at the time of the accident the latter was "bearing in" under a piece of slate about 4 feet long, 2 feet wide and 10 inches thick, which fell on him. Kenwick told the writer that they sounded the slate before they commenced to work and thought it safe. Valentine was a single man.

Vannia Vangingio, a miner was instantly killed on July 5 by a fall of slate in room 47, entry 6, Gastonville mine. The deceased was loading a car in his room when a piece of slate $5\frac{1}{2}$ feet long, $2\frac{1}{2}$ feet wide and 6 inches thick fell on him with the result as stated above. Vangingio was a single man, 35 years of age. Inquest held and a verdict of accidental death rendered.

Antony Miller was instantly killed in Albany slope on July 15, by a fall of slate. Miller and other workmen were taking out a skip to widen the slope. The deceased was "bearing in" under a piece of slate 14 feet long, 4 feet wide and 9 inches thick, which fell on him. A sprag was under the slate but the slate broke over it; the slate only fell about 13 inches. Miller was a single man. Inquest held and a verdict of accidental death rendered.

Andrew Brown, aged 13 years, was fatally injured in entry 4, Manown mine, August 27; died in about one hour after. The boy was sent to get a car from the driver and was standing in the mouth of room 18 when the driver was coming up the entry with a trip of four cars and told a miner by the name of Samuel Lax to cut off two of them; this was done and with the two cars the driver started down the entry; when opposite room 18 the mule gave a quick jerk which threw a car off the track, catching the boy between it and the coal rib.

Inquest held and a verdict of accidental death rendered.

Charles Roshopsky, aged 14 years, was instantly killed September 12 in room 2, entry 2, Vigilant mine; this boy was working with his father and an elder brother. They had fired a shot in the evening before in coal, which brought some slate down that became mixed with the coal; the boy was put to work to clean it when a piece of slate 7 feet long, $3\frac{1}{2}$ feet wide and 3 inches thick fell on him with the result as stated above. Another piece 12×14 feet and of the same thickness (3 inches) as the previous piece fell at the same time; this piece in its descent discharged a post which was under it. The father informed the writer that they tried to take the slate down some time before it fell, but could not.

Oliver Dowden, a driver, employed in Watson mine was instantly killed September 13 by being run over by a trip of cars.

The deceased was moving his trip of four cars toward the double parting, and as usual was on the front end and it is supposed that he was holding a lump of coal which broke, precipitating him in front of the cars.

Dowden leaves a wife and four children. An inquest was held and a verdict of accidental death rendered.

Morrisso Paturini, a miner, was fatally injured November 12 in entry 32, room 12, Banner mine. The deceased and Parkeroli Baptisto worked together, and on the day of the accident the former was shoveling coal out of the tight side of room, when some 3 cars of coal accompanied by slate, fell on him, inflicting injuries of such a nature that he died some 9 hours after.

Paturini was a single man aged 19 years.

John Holles, a miner, was instantly killed by a fall of slate in entry 1, room 2, Bowdler mine, on December 12. The deceased had fired a shot and commenced to fill a car, when a piece of slate $7\frac{1}{2}$ feet long, $2\frac{1}{2}$ feet wide and 12 inches thick, fell on him.

Holles leaves a wife and four children.

Michael Terrick was instantly killed December 22 by a fall of slate in room 1, entry 12, Climax mine. John Usco and deceased worked together; the latter sounded the slate a few minutes before it fell and he thought it safe, and went under it and commenced to knock coal; this no doubt loosened it. The piece that fell was 10 feet long, $3\frac{1}{2}$ feet wide and 10 inches thick. Terrick had only been in this country some 6 weeks. Inquest held and a verdict of accidental death rendered.

William Henshell, a miner, was fatally injured December 22, by a car running over him, drawn by a runaway mule, in entry 11, Greenfield mine and died on the 24th. The deceased was drawing entry stumps, and to make a place to set a post, he went for a canal shovel. While passing a mule which was hitched to an empty car on the entry, he says that he either scraped the mule's side or touched the coal with his shovel thereby frightening it so that it ran away; he ran with the mule and ahead of the car for quite a distance, he then fell and car ran over him. The mine-boss and a driver by the name of Hartley were there at the time; the latter being at the rear end of car.

Hartley put down the side brakes on car and at the same time called to Henshell to jump to one side, but the deceased either did not hear or thought he could save himself without jumping.

Inquest held and a verdict of accidental death rendered.

TABLE NO. 1—*Showing Location of Collieries in the First Bituminous Mine District.*

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Allen	Allen Coal Company	Washington	C. W. Braznell	Monarch.
Acme	Acme Coal Company	do.	do.	do.
Anderson	D. M. Anderson	do.	D. M. Anderson	Venetia.
Abe Hays	Abe Hays Coal Works	do.	T. S. Hutchinson	Monongahela City.
Amity	S. S. Crump & Co.	Allegheny	S. S. Crump	Camden.
Allequippa	Bailey, Wilson & Co.	do.	W. W. Wilson	do.
Albany	Snowdon & Hogg	Fayette	Frank T. Hogg, E. M.	Brownsville.
Blyth	Blyth Coal Company	Washington	D. S. Malory	Speers.
Black Diamond	W. H. Brown Sons	do.	James Louttit	Monongahela City.
Beaumont	Beaumont Coal Company	do.	A. G. Leonard	West Brownsville.
Buffalo	Corey Gas Coal Company	do.	Henry Boyer	Courtney.
Banner	John M. Risher	do.	Jos. Griffith	Shire Oaks.
Bunola	O'Neil & Peterson	Allegheny	G. W. Peterson	Bunola.
Bellevue		do.	Robert Gumbert	Bell Bridge.
Cincinnati	Chas. Jutte & Co.	Washington	J. O. Phillis	Courtney.
Cliff	John M. Risher	do.	Joseph Griffith	Shire Oaks.
Catsburgh	Catsburgh Coal Company	do.	John H. Jones	Monongahela City.
Clipper	Clipper Coal Company	do.	Robert Jack	Allenport.
Chalfant	Fred. S. Chalfont	Fayette	Fred. S. Chalfont	Brownsville.
Courtney	Mingo Gas Coal Company	Washington	A. A. Corey	Braddock.
Coal Bluff	John M. Risher	do.	J. M. Risher	Shire Oaks.
Caledonia	T. J. Wood	do.	Ezra Conaway	Elco.
Champion	do.	do.	do.	do.
Charleroi	Charleroi Coal Company	do.	Thomas Wathim	Monongahela City.
Camden	George Lysle & Sons	Allegheny	B. M. Thomas	Camden.
Climax	Pittsburg and Bellevernon Coal Company	Fayette	Wm. M. Neel	California.
Cedar Hill	David Bowdler & Son	do.	David Bowdler	Coal Centre.
Cleveland	J. H. Somers Fuel Company	do.	D. A. Robinson	Belle-Vernon.
Crescent	California Coal Company	Washington	Robert J. Gregg	California.
Eclipse (river)	Eclipse Coal Company	do.	William Minford	Elco.
Eclipse (railroad)	Osborne, Seager & Co.	do.	George W. Cotton	Venetia.
Ella	Ella Coal Company	Westmoreland	John A. O'Neil	McKeesport.
Fidelity	Fidelity Coal Company	Washington	Henry E. Kludack	Rosco.
Fayette City	Samuel O'Neil	Fayette	James O'Neil	Fayette City.
Fulton	Jones Coal Company	Allegheny	T. M. Jones	Jones Station.
Faucetts		Westmoreland.		
Garfield		Washington.		
Greenfield	P. J. Forsyth & Co.	do.	P. J. Forsyth	Coal Centre.
Gastonville	Pittsburg and Chicago Gas Coal Company	do.	John Bonner	Gastonville.
Germania	Germania Gas Coal Company	do.	C. Fritchman	Finleyville.
Horner & Roberts No. 3	Horner & Roberts	Allegheny	James W. Reed	Elizabeth.
Horner & Roberts No. 4	do. do.	do.	do.	do.
H. D. O'Neil	H. D. O'Neil	do.	H. D. O'Neil	do.
Hilldale	Hilldale Coal Company	Washington	L. D. Beedle	Jones Station.
Hachett	Hachett Coal and Coke Company	do.	J. E. Boyle	Finleyville.
Ivil	James Jones	do.	James Jones	Monongahela City.
Jefferson	Thomas Foster & Sons	Allegheny	Thomas Foster	Coal Valley.
Knob	Knob Coal Company	Washington	S. H. Pearsall	Brownsville.
Lovedale	John A. Wood & Son	Allegheny	George R. Gray	Elizabeth.

Little Redstone	Little Redstone Coal Company	Fayette	J. T. Jones	Fayette City.
Little Alps	Alps Coal Company	do.	Jos. Underwood	Roscoe.
Large	R. B. Large	Westmoreland	Matthew Creevey	Webster.
Millesville	Robert Jenkin	Allegheny	Robert Jenkin	Sunny Side.
Manown	Yonghiogheny Gas Coal Company	do.	John Simpson	Monongahela City.
Mongah	W. H. Brown	do.	James Louttit	do.
Nottingham	Henry Florsheim	Washington	M. G. Gibson	Finleyville.
Old Eagle	Brown Bros.	Allegheny	James Louttit	Monongahela City.
Rock Run	Sarah C. Snodgrass	do.	J. B. Sheridan	Camden.
Rostraver	James Jones	Westmoreland	D. G. Jones	Monongahela City.
Sheppler	Stone & Nimmo	do.	James Laird	McKeesport, Box 611.
Snowden	Pittsburg and Chicago Gas Coal Company	Allegheny	John Bonner	Gastonville.
Stone	Stone Coal Company	do.	George W. Stone	McKeesport.
Stony Hill	John N. Dixon	Fayette	John N. Dixon	California.
Snow Hill	Alps Coal Company	do.	Joseph Underwood	Roscoe.
Stockdale	John Crombie	Washington	John Crombie	Webster.
Tremont	John A. Wood & Son	Fayette	S. B. Graham	Belle-Vernon.
Umpire	C. L. Snowden & Co.	do.	John Simpson	Brownsville.
Vigilant	California Coal Company	Washington	John A. Powell	California.
Vesta No. 1	The Vesta Coal Company	do.	R. B. Drum	do.
Vesta No. 2	do. do.	do.	do.	do.
Vesta No. 3	do. do.	do.	do.	do.
Watson	Watson Coal Company	Allegheny	Joseph Cartwright	Sunny Side.
Walton Upper	Joseph Walton & Co.	do.	John W. Rike	West Elizabeth.
Walton Lower	do. do.	do.	do.	do.
Washington	Briggs & Flint	Fayette	Thomas S. Briggs	Monarch.

TABLE NO. 2.—*Giving the total number of tons of coal mined in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the First Bituminous Mining District for the year ending December 31, 1892.*

NAMES OF COLLIERIES.	Location—County.	Total production in tons of coal.	Total shipment in tons of coal.	No. days worked.	No. persons employed.	No. fatal accidents.	No. non-fatal accidents.	No. kegs powder used.	No. steam boilers.	No. horses and mules.	No. mine locomotives.
Allen	Washington county	78,030	78,030	170	78	1		300		3	
Acme	do. do.	93,652	93,652	160	92			500		7	
Anderson	do. do.	37,000	37,000		105				3	7	
Abe Hays	do. do.	6,306	6,306		62					7	
Amity	Allegheny county	91,458	91,458	149	225		2			18	
Allequippa	do. do.	118,610	118,610	139	234		8			15	
Albany	Fayette county	130,097	130,097	244	180	2	1	350	3	10	
Blyth	Washington county	66,164	66,164	156	143		4	342		5	
Black Diamond	do. do.	46,360	43,360	105	198	2	3	220	1	12	
Beamont	do. do.	51,000	51,000	225	146				3	7	
Buffalo	do. do.	5,000	5,000		6				1	6	
Banner	do. do.	77,000	77,000	152	121	1			1	7	
Bunola	Allegheny county	55,284	55,284	148	183		4	400	1	9	
Bellevue,†	do. do.	20,000	20,000		112				2	9	
Cincinnati	Washington county	32,549	32,549	127	156	1	2	200	1	10	
Cliff	do. do.	12,500	12,500	100	73				1	4	
Catsburgh	do. do.	116,304	116,304	200	178	1		300	3	10	
Clipper	do. do.	61,677	61,677	138	94				1	9	
Chalfant	Fayette county	13,500	13,500	250	18			75	1	2	
Courtney	Washington county	24,100	24,100	264	100				1	8	
Coal Bluff,*	do. do.	54,000	54,000	137	135					9	
Caledonia	do. do.	95,610	95,610	170	121			600		10	
Champion	do. do.	82,507	82,507	150	111			500		7	
Charlerol	do. do.	11,710	11,710	72	64			15		3	
Camden	Allegheny county	76,000	76,000	200	241				4	12	
Climax	Fayette county	47,826	47,826		108	1				5	
Cedar Hill,‡	do.	37,036	37,036		86		1			4	
Cleveland	do.	55,374	55,374	170	213		3			8	
Crescent	Washington county	4,400	4,400	180	95			200	1	2	
Eclipse (railroad)	do. do.	80,680	80,680	230	136		3		1	10	
Eclipse (river)	do. do.	30,000	30,000	130	90		1		2	8	
Ella	Westmoreland county	58,578	58,578	262	104				1	6	

Fidelity	Washington county	60,769	60,769	220	85	1	1			5		
Fayette City	Fayette county	172,607	172,607	178	282		3		2	12		
Fulton	Allegheny county	6,962	6,962	20	86					5		
Greenfield	Washington county	79,413	79,413	175	143	2	3	755		13		
Gastonville	do. do.	96,500	96,500	217	125	1	6	108	1	7		
Germania	do. do.	59,006	59,006		123			200	1	4		
Horner & Roberts, No. 4	Allegheny county	58,064	58,064	120	176		5			9		1
H. D. O'Neil	do. do.	64,469	64,469	148	132				1	6		
Hilldale	Washington county	45,133	45,133		154				1	6		
Hacketts	do. do.	45,087	45,087	200	104		1			5		
Ivil	do. do.	105,840	105,840	220	181	1	5	290	5	10		
Jefferson	Allegheny county	38,908	38,908	70	136				2	6		
Knob	Washington county	132,759	132,759	244	201	1		500	2	13		
Lovedale	Allegheny county	13,040	13,040	80	81		1	20	2	7		
Little Redstone	Fayette county	66,874	66,874	182	123		2		1	14		
Little Alps	do.	29,093	29,093	150	60			125		3		
Large	Westmoreland county	13,453	13,453	137	72			10	1	5		
Milesville	Allegheny county	53,417	53,006	211	146	1	1	200	2	10		
Manown	do. do.	139,303	139,303	246	178	2	5		4	7		
Mongah	do. do.	5,670	5,670	290	18					2		
Merchant	Fayette county	850	850	72	7	1						
Nottingham	Washington county	91,636	91,636		166			250		9		
Old Eagle	Allegheny county	82,157	82,157	160	277		2	700		8		
Rock Run	do. do.	17,897	17,897	114	62					4		
Rostraver	Westmoreland county	27,175	27,175	100	98		2	100	1	4		
Sheppler	do. do.	24,041	24,041	172	95					4		
Snowden	Allegheny county	124,500	124,500	300	133		8	42	2	7		
Stone,†	do. do.	25,000	25,000		132					10		1
Stony Hill	Fayette county	68,500	68,500	141	122		1		1	7		
Snow Hill	do. do.	66,696	66,696	164	137		2	250	2	7		
Stockdale	Washington county	11,862	11,862	156	42			30		3		
Tremont	Fayette county	29,000	29,000	125	183		3		1	8		
Umpire	do.	79,590	79,590	256	161				2	10		
Vigilant	Washington county	36,794	36,794	200	120	1		300	1	3		
Vesta, No. 1	do. do.	38,000	38,000		38					3		
Vesta, No. 2	do. do.	96,675	96,675	225	142		1			13		
Vesta, No. 3,§	do. do.	44,656	44,656	135	150		2	400	2	8		
Watson	Allegheny county	92,652	92,652	234	184	1			1	9		
Walton, Upper	do. do.	240,807	240,807	183	412				2	38		1
Washington	Fayette county	44,270	44,270	187	117		1	390	2	11		1
Total		4,299,437	4,299,020	10,460	9,393	24	87	8,672	74	564		4

* From April 1st to December 31, 1892. † Estimated. ‡ Former operator, 36,236 tons. § Former operator, 44,175 tons.

TABLE NO. 3.—*Showing the number of each class of employes at each colliery in the First Bituminous Mine District during the year 1892.*

NAMES OF COLLIERIES.	Location—County.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.						Grand totals inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Blacksmiths and carpenters.	Engineers and firemen.	All other company men.	Superintendents, bookkeepers and clerks.	Total outside.	
Allen,	Washington,	1	65	. . .	1	3	. . .	70	1	. . .	5	8	8	78
Acme,	do.	1	75	12	1	4	. . .	83	1	. . .	6	9	9	92
Anderson,	do.	1	80	10	. . .	4	2	97	1	2	4	1	8	105
Abe Hays,	do.	1	50	. . .	. . .	6	1	58	. . .	. . .	3	1	4	62
Amity,	Allegheny,	1	170	15	5	15	2	208	1	1	13	2	17	225
Allequippa,	do.	1	165	30	4	11	3	214	1	2	16	1	20	234
Albany,	Fayette,	1	135	15	3	12	3	168	2	3	6	1	12	180
Blyth,	Washington,	1	125	12	1	5	1	135	1	. . .	5	2	8	143
Black Diamond,	do.	1	125	7	29	14	2	178	1	1	16	2	20	198
Beaumont,	do.	1	125	. . .	1	7	1	135	1	3	5	2	11	146
Buffalo,	do.	1	. . .	. . .	2	. . .	. . .	3	. . .	. . .	3	. . .	3	6
Banner,	do.	1	85	5	4	6	. . .	103	1	. . .	12	3	16	121
Bunola,	Allegheny,	1	150	7	1	9	3	171	2	. . .	8	2	12	183
Bellevue	do.	1	85	6	1	8	. . .	101	. . .	2	7	2	11	112
Cincinnati,	Washington,	1	125	8	. . .	8	. . .	142	1	. . .	10	1	14	156
Cliff,	do.	1	58	. . .	3	4	. . .	66	1	. . .	5	1	7	73
Catsburgh,	do.	1	150	6	2	6	1	166	2	1	6	3	12	178
Clipper,	do.	1	68	8	1	8	1	87	1	1	3	2	7	94
Chalfant,	Fayette,	1	10	1	. . .	2	. . .	14	. . .	1	2	1	4	18
Courtney,	Washington,	1	80	3	. . .	6	1	91	1	1	4	3	9	100
Coal Bluff,	do.	1	101	11	2	7	2	124	2	. . .	8	1	11	135
Caledonia,	do.	1	90	10	2	7	2	112	1	. . .	6	2	9	121
Champion,	do.	1	80	10	2	7	2	102	1	. . .	6	2	9	111
Charlerol,	do.	1	50	3	. . .	3	. . .	57	1	1	3	2	7	64
Camden,	Allegheny,	1	200	. . .	3	12	6	222	1	1	15	2	19	241
Climax,	Fayette,	1	95	. . .	1	5	. . .	102	1	1	4	. . .	6	108
Cedar Hill,	do.	1	60	. . .	5	4	2	72	1	. . .	10	3	14	86
Cleveland,	do.	1	182	. . .	4	8	. . .	201	1	. . .	9	2	12	213
Crescent,	Washington,	1	80	6	. . .	2	. . .	89	. . .	1	3	1	6	95

Eclipse (river),	do.	1	70	. . .	1	6	3	81	1	1	6	1	9	90
Eclipse (railroad),	do.	1	110	6	2	6	1	129	1	. . .	5	1	7	136
Ella,	Westmoreland,	1	90	. . .	1	5	1	99	1	1	2	1	5	104
Fidelity,	Washington,	1	70	4	. . .	4	. . .	79	1	. . .	4	1	6	85
Fayette City,	Fayette,	1	225	25	3	12	1	267	2	2	10	1	15	282
Fulton,	Allegheny,	1	65	5	. . .	5	. . .	76	1	. . .	9	. . .	10	86
Garfield,	Washington,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Greenfield,	do.	1	110	6	1	9	3	130	2	1	7	3	13	143
Gastonville,	do.	1	92	9	2	7	3	114	2	1	6	2	11	125
Germania,	do.	1	100	6	1	4	2	114	1	. . .	6	2	9	123
Horner & Roberts No. 4,	Allegheny,	1	143	4	1	8	2	159	2	1	13	1	17	176
H. D. O'Neil,	do.	1	116	. . .	. . .	5	1	123	1	1	7	. . .	9	132
Hilldale,	Washington,	1	125	10	. . .	6	1	143	1	1	8	1	11	154
Hackett's,	do.	1	90	. . .	. . .	3	2	96	1	. . .	5	2	8	104
Ivil,	do.	1	150	6	2	6	2	167	2	2	7	3	14	181
Jefferson,	Allegheny,	1	109	6	. . .	7	2	125	1	1	8	1	11	136
Knob,	Washington,	1	150	3	11	13	3	181	2	3	12	3	20	201
Lovedale,	Allegheny,	1	60	. . .	3	3	. . .	67	1	2	9	2	14	81
Little Redstone,	Fayette,	1	95	7	1	10	. . .	114	2	. . .	5	2	9	123
Little Alps,	do.	1	50	5	. . .	3	. . .	59	1	. . .	. . .	. . .	1	60
Large,	Westmoreland,	1	60	. . .	. . .	5	. . .	66	1	1	3	1	6	72
Milesville,	Allegheny,	1	115	10	2	5	1	134	1	1	7	3	12	146
Manown,	do.	1	150	6	1	6	3	167	1	2	7	1	11	178
Mongah,	do.	1	12	. . .	. . .	2	. . .	15	. . .	. . .	3	. . .	3	18
Merchant,	Fayette,	. . .	5	. . .	. . .	. . .	. . .	6	. . .	. . .	1	. . .	1	7
Nottingham,	Washington,	1	134	15	1	8	. . .	159	1	. . .	4	2	7	166
Old Eagle,	Allegheny,	1	225	10	4	10	3	253	3	5	15	1	24	277
Rock Run,	do.	1	50	2	1	3	. . .	57	1	. . .	3	1	5	62
Rostraver,	Westmoreland,	1	80	3	1	4	1	90	1	. . .	5	2	8	98
Sheppler,	do.	1	76	8	. . .	4	. . .	89	1	. . .	4	1	6	95
Snowden,	Allegheny,	1	103	5	2	7	2	120	2	2	7	2	13	133
Stone,	do.	1	100	10	3	6	. . .	120	1	1	9	1	12	132
Stockdale,	Washington,	1	32	3	. . .	2	. . .	38	. . .	. . .	3	1	4	42
Stony Hill,	Fayette,	1	100	5	1	6	2	115	1	1	4	1	7	122
Snow Hill,	do.	1	110	10	1	7	1	130	1	1	4	1	7	137
Tremont,	do.	1	150	10	2	8	2	173	1	1	7	1	10	183
Umpire,	do.	1	128	6	5	9	2	151	2	2	5	1	10	161
Vigilant,	Washington,	1	100	6	. . .	3	1	111	1	1	5	2	9	120
Vesta No. 1,	do.	1	. . .	. . .	27	2	. . .	30	1	2	5	. . .	8	38
Vesta No. 2,	do.	1	100	16	2	8	2	130	2	2	6	2	12	142
Vesta No. 3,	do.	1	123	5	2	8	2	141	1	1	6	1	9	150
Watson,	Allegheny,	1	150	8	1	8	4	172	1	1	7	3	12	184
Walton's upper mine,	do.	1	340	. . . .	6	25	. . . .	372	10	3	25	2	40	412
Walton's lower mine,	do.	1	. . .	. . .	. . .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	1
Washington,	Fayette,	1	95	3	1	8	. . .	108	2	1	4	2	9	117
Totals,		73	7,422	414	170	471	92	8,642	91	72	480	108	751	9,393

TABLE NO. 4.—*List of fatal accidents which occurred in and about the mines of the First Bituminous Mine District, for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 7.	Paul O'Dell.	Miner.	53	M.	5	Banner.	Washington.	Instantly killed by a fall of coal.
Feb. 1.	John Lundy.	do.	40	S.	..	Black Diamond.	do.	Instantly killed by a fall of slate.
9.	John Gatleney.	do.	..	M.	5	Ivil.	do.	Fatally injured by dilly trip; died March 19.
12.	R. Constania.	do.	44	M.	3	Banner.	do.	Fatally injured by a fall of coal and slate; lived about three hours and a half after being hurt.
27.	Storey F. McFeeley.	do.	50	M.	5	Cincinnati.	do.	Instantly killed by a fall of slate.
Mar. 1.	Thomas N. Davis.	do.	58	W.	..	Knob.	do.	Instantly killed by a fall of slate.
1.	Sabbo Burner.	do.	24	S.	..	Albany.	Fayette.	Instantly killed by a fall of slate.
18.	Charles Rosenbergh.	do.	39	M.	3	Milesville.	Allegheny.	Fatally injured by falling slate; lived till the next day.
29.	Augley Partinia.	do.	45	M.	7	Banner.	Washington.	Fatally injured by dilly trip; lived some three hours after being hurt.
Apr. 18.	Thomas McCahill.	do.	54	M.	10	Black Diamond.	do.	Fatally injured by being caught between a trip of cars and entry pillar.
19.	John Ashton.	do.	..	S.	..	Fidelity.	do.	Injured by a fall of coal; died May 7.
May 19.	Edward Freycent.	do.	44	M.	1	Catsburgh.	do.	Killed instantly by a fall of slate.
31.	Peter Barsodi.	do.	..	..	..	Allen.	do.	Fatally injured by a fall of slate; lived four hours and a half after being hurt.
June 18.	John H. Burgan.	Driver.	..	M.	4	Manown.	Allegheny.	Fatally injured by being run over by a trip of coal cars; lived two hours after being hurt.
21.	Frank Valentine.	Miner.	..	S.	..	Greenfield.	Washington.	Injured by falling slate; died July —.
July 5.	Vannia Vaginigia.	do.	35	S.	..	Gastonville.	do.	Instantly killed by falling slate.
15.	Antony Miller.	do.	..	S.	..	Albany.	Fayette.	Instantly killed by a fall of slate.
Aug. 27.	Andrew Brown.	do.	13	..	..	Manown.	Allegheny.	Fatally injured by being caught by the cars (see a more extended account of this accident in another part of this report).
Sept. 12.	Charles Roshopsky.	do.	14	..	..	Vigilant.	Washington.	Killed instantly by a fall of slate.
13.	Oliver S. Dowden.	Driver.	27	M.	4	Watson.	Allegheny.	Instantly killed by being run over by a trip of cars.
Nov. 12.	Mawrissia Patrinia.	Miner.	19	S.	..	Banner.	Washington.	Fatally injured by a fall of coal and slate; lived nine hours after being hurt.
Dec. 12.	John Hollen.	do.	40	M.	4	Merchant.	Fayette.	Instantly killed by falling slate.
22.	Michael Terich.	do.	..	..	..	Climax.	do.	Killed instantly by a fall of slate.
22.	William Henshell.	do.	..	..	..	Greenfield.	Washington.	Fatally injured by being run over by an empty car, to which was hitched a runaway mule.

TABLE NO. 5.—*List of non-fatal accidents which occurred in and about the mines of the First Bituminous Mine District, for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON.	Occupation.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 19.	Anell Soney.	Miner.	Fayette City.	Fayette.	Seriously burned by an explosion of fire-damp.
"	Frank Blile.	do.	do.	do.	Seriously burned by an explosion of fire-damp
22.	George Blaney.	do.	Cedar Hill.	do.	Hip bone broken by falling slate.
22.	Luther Smith.	do.	Germania.	Washington.	Injured by a fall of slate.
26.	Peter Dodds.	Driver.	Abe Hoyer.	do.	Injured by being run over by mine car.
26.	Walter Bradshaw.	do.	Stony Hill.	Fayette.	Foot slightly bruised by mine car.
26.	Hugh Kennedy.	Miner.	do.	do.	Severely injured by a fall of coal.
30.	D. W. Phillips.	Mine-boss.	Walton's Upper.	Allegheny.	Injured by an explosion of fire-damp.
30.	W. Reese.	Pumper.	do.	do.	Injured by an explosion of fire-damp.
Feb. 4.	N. Honwell.	Day hand.	Vigilant.	Washington.	Injured by falling from tressle.
9.	Carlo Barado.	Miner.	Ivil.	do.	Injured by dilly trip.
10.	Martin Orbin.	do.	Greenfield.	do.	Leg broken by a fall of slate.
20.	Charles Hill.	do.	Fayette City.	Fayette.	Leg broken by a fall of coal.
Mch. 3.	Porter Stoher.	Driver.	Jefferson.	Allegheny.	Slightly injured by falling "horseback."
4.	Blash Ferdino.	Miner.	Cincinnati.	Washington.	Arm broken by falling coal.
7.	Berto Perpolhio.	do.	Manown.	Allegheny.	Leg broken by a fall of coal.
19.	James Rue.	do.	Watson.	do.	Injured by mine car.
22.	David Lewis.	do.	Amity.	do.	Leg broken by a fall of slate and coal.
28.	John Tresner.	do.	Allegrippa.	do.	Leg broken by falling slate.
29.	Frank Felish.	do.	Albany.	Fayette.	Thigh broken by a fall of slate.
April 2.	Joseph Hillinsour.	do.	Snow Hill.	do.	Burned by an explosion of fire-damp.
4.	Anthony Hampeet.	do.	Rock Run.	Allegheny.	Arm broken by a fall of slate.
12.	George Gumbershir.	do.	Catsburgh.	Washington.	Injured by falling coal and slate.
"	Henry Webb.	do.	Climax.	Fayette.	Head cut by a fall of slate.
16.	John Young.	do.	Old Eagle.	Allegheny.	Foot hurt by falling slate.
16.	Linanion Pieto.	do.	Banner.	Washington.	Arm broken by a fall of roof coal.
20.	Frank Linn.	Day hand.	Ivil.	do.	Foot injured by "bull wheel."
22.	John Culshan.	Miner.	Camden.	Allegheny.	Severely injured by a fall of "horseback."
22.	Thomas Forsythe.	Driver.	Manown.	do.	Slightly injured by being caught between trap door and car trip.
22.	John Orkvany.	Miner.	Snowden.	do.	Injured by a fall of slate.
May 5.	Howard McLean.	...	Vesta No. 2.	Washington.	Both legs broken by cars running over them.
5.	Micheal Means.	Miner.	Stony Hill.	Fayette.	Foot bruised by a fall of slate.
24.	John Caligihlon.	do.	Hackett.	Washington.	Leg broken by slate while he was taking it down.
25.	David Morgan.	do.	Ivil.	do.	Leg badly injured by a fall of slate, necessitating amputation.
June 9.	John Hunt.	do.	Stony Hill.	Fayette.	Arm and wrist injured by a fall of slate.
20.	Jacob Baser.	do.	Amity.	Allegheny.	Leg broken by a fall of roof.
21.	William Elliott.	Driver.	Cincinnati.	Washington.	Severely injured by being run over by cars.

19-12-92.

TABLE NO. 5.—*Continued.*

Date of accident.	NAME OF PERSON.	Occupation.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
July 5.	—— Vanns.	Miner.	Catsburgh.	Washington.	Injured on leg by falling slate, necessitating amputation.
5.	Thomas Forsythe.	Driver.	Manown.	Allegheny.	Arm broken by a mule that trod on it while Forsythe was lying prostrate, he having fallen.
6.	Thomas Beedle.	do.	Cliff.	Washington.	Collar bone broken by falling in front of car while driving mule.
18.	August Schilder.	Miner.	Eclipse (railroad).	do.	Injured by a fall of slate.
27.	Jules Gontheirr.	do.	Manown.	Allegheny.	Foot bruised by a fall of slate.
28.	James Rigby.	do.	Rostraver.	Westmoreland.	Injured by falling slate.
Aug. 1.	Kanech Sapolia.	do.	Blyth.	Washington.	Injured by a fall of coal.
12.	George Brown.	do.	Germania.	do.	Leg broken by a fall of slate.
22.	Zello Dephill.	do.	Rostraver.	Westmoreland.	Injured by a fall of slate.
Sept. 2.	John Bruskin.	do.	Nottingham.	Washington.	Leg slightly hurt by falling slate.
5.	Michael Tomea.	Trapper.	Germania.	do.	Leg badly smashed by being run over by car.
19.	Micheal Warga.	Miner.	Allen.	do.	Burned by blasting powder which he had in his pocket igniting from a spark from blacksmith's fire.
24.	Lemuel Grey.	Trapper.	Germania.	do.	Leg injured by being caught between car and rib.
Oct. 14.	John R. Jones.	Miner.	Little Redstone.	do.	Ankle smashed by a fall of slate.
28.	Burton Spondy.	do.	Ivil.	do.	Burned by a premature blast.
Nov. 7.	John Edwards.	do.	Germania.	do.	Leg broken by a fall of slate.
15.	William Powell.	Driver.	Washington.	Fayette.	Severely burned by an explosion of fire-damp.
15.	William Jones.	Day hand.	Eclipse (railroad).	Washington.	Seriously hurt by a fall of "horseback."
16.	John Harper.	Miner.	Old Eagle.	Allegheny.	Thigh broken by a fall of slate.
17.	August Berry.	do.	Bunola.	do.	Foot smashed by falling slate.
17.	Jacob Klumer.	do.	Gastonville.	Washington.	Injured by a fall of slate.
22.	G. W. Campbell.	do.	Acme.	do.	Injured in back and hip by a fall of slate.
Dec. 6.	James Thomas.	do.	Milesville	Allegheny.	Leg broken by a fall of slate.
22.	Isaac Detrich.	Driver.	Manown.	do.	Foot sprained by cars.

SECOND BITUMINOUS DISTRICT.

(ALLEGHENY AND WESTMORELAND COUNTIES.)

Hon. THOMAS J. STEWART,

Secretary of Internal Affairs:

SIR: In compliance with the tenth section of the act of assembly approved June 30, A. D. 1885, I have the honor of submitting my eighth annual report as Inspector of Mines for the Second Bituminous District for the year ending December 31, 1892.

There are now 85 mines in the district which when in operation come within the provisions of the law, and it affords me great pleasure to state that all of them, with the exception of four, are in very fair condition. Many of them are in excellent condition, far beyond the requirements of the law. Two of the four mines referred to above have plenty of air at the inlet and outlet, but owing to the carelessness of the mine-bosses, the air is not conducted to the face of the workings. I intend very soon to make it unpleasant for them unless they comply with the law. I am pleased to note that the fatal accidents have decreased 109, and the non-fatal 3 from 1891. Fully one-half of those killed and injured was by carelessness on their own part. Four of the killed were boys under 12 years of age. It seems a pity for these youths to lose their lives so early, and more so when caused by carelessness on the part of their own fathers. Twelve persons were killed by slate. In many instances there were no posts set under the slate. In one case the person knocked a post out that had been set by other parties, so that he would have more room to work. Four were killed by jumping on moving trips, and as long as men continue to act so carelessly and in spite of all caution, violate every rule of the mines, I don't look for much decrease in the number of accidents, with all the care on the part of the mine officials to protect human life, unless the warnings given by them are heeded by the miners and others. Four fans and three furnaces have been erected for the purpose of ventilation.

In Re—APPEAL OF JOHN P. BRENNAN, SUPERINTENDENT, FROM THE DECISION OF WILLIAM JENKINS, MINE INSPECTOR, ETC.

Nos. 90, 91 and 92, May Term for 1890.

And now, February 1, 1892, counsel for appellant, John P. Brennan, superintendent, etc., move the court for a reargument upon the ground that the act of assembly of June 30, 1885 (P. L. of 1885, pages 205 and 218), is unconstitutional and void in this.

1. That said act of assembly can only be sustained, if sustained at all, as a police regulation, and in all cases where the question is one of police regulation, it is for the court to determine whether such regulation is reasonable; if unreasonable, and if it would impose large unnecessary expense upon the operators without any corresponding benefit in the protection of the lives of employes, then such police regulation would be and is unconstitutional and void, and to that extent the provisions of said act are inoperative and void.

2. The court having found that on a proper construction of the act, it requires a larger number of mining-bosses than are reasonably necessary to discharge the duties imposed upon said mining bosses by said act, it follows that the provisions of the act are unreasonable and in violation of the provisions of the Constitutions of the United States and of Pennsylvania.

3. Said act of assembly, upon which these proceedings are based, is not "only special," but also "local" legislation, for the reasons:

(*a*) That its provisions are limited to coal mines in which only a certain number of persons are employed.

(*b*) That it is limited to the bituminous coal region, whereas all the provisions for the safety of employes, etc., are as necessary for one coal region as another and should be embraced in a general law.

4. This act is further unconstitutional in that it attempts to shift the responsibility of the master or employer for negligence, upon employes, to wit: inspectors and mining-bosses, contrary to the provisions of the common law and without notice of such intention in the title to said act.

5. The constitution provides that all laws with regard to the courts, evidence, etc., shall be uniform; this act, in violation of that provision, attempts to clothe the courts in the bituminous coal region with a special jurisdiction, which is not general over the Commonwealth, and gives no appeal or writ of error: nor does the act furnish any method by which its unconstitutionality can be brought before the Supreme Court; and no notice of this jurisdiction or its limitation is given in the title of said act.

LAIRD & KEENAN,
Attorneys for Brennan, February 1, 1892.

By the Court: We see no occasion for a re-hearing. The case was carefully considered, and we are satisfied with the conclusion arrived at. The constitutionality of the act of 30th June, 1885, P. L. 205, was not argued, nor specially considered; but we are not now persuaded that the act is unconstitutional. Laws somewhat similar have been in existence for a score of years and these have been frequently sustained by the courts.

It would be a serious misfortune, not only to the persons employed in the bituminous coal mines, but also to the owners and operators of such mines, if the act of 30th of June, 1885, were declared invalid. The magnitude of bituminous coal operations in this county alone, and the thousand of persons employed therein, demand the protection of some statute such as this. The danger is so great, and the destruction of life so fear ful in the mining of coal in these regions, that we have no doubt of the power of the legislature to regulate the business. Sad experience in this country and elsewhere has shown that such regulation is necessary.

Even with the best safeguards fearful and destructive accidents sometimes occur.

Pertinent to this matter, we desire to quote Rice, J., in Com. *v.* Kingston Coal Company, 6 Kulp 241. "It has been well said that the police power of the State is a proper subject for description, rather than definition, and I shall not undertake what abler men have confessed their inability to do. But after a careful and thorough examination of the question, we have no doubt that the regulation under consideration is one which is fairly within the power of the legislature to make. It is as unobjectionable on constitutional grounds as a law permitting municipal corporations to establish fire limits, and to prohibit the erection of frame buildings within the same; or as the law requiring the owners of hotels, manufactories, etc., to provide fire escapes; or as those provisions of the first mine ventilation law, which were sustained as within the constitutional powers of the legislature."

Speaking of the act of 1870, Judge Harding said, "Of its constitutionality we have not the slightest doubt. It stands upon the statute book, known of all men as the offspring of 'Avondale.' Of its propriety and necessity, the law-making power was taught not a moment to early."

Com. *v.* Bonnell, 8 Philadelphia, 534, Judge said, "It is entitled 'An act providing for the health and safety of persons employed in coal mines.' Its provisions, prohibitions and penalties are directed to this end. The melancholy record of mining casualties in this and other coal fields called for legislative protection. The application and enforcement of the law, in a case where, from the circumstances beyond the operator's control, compliance with its provisions is rendered impossible, may work hardship. But when the question is brought to the practical issue, is capital or human life to be sacrificed, can the answer be doubtful?"

Com *v.* Tompkins, 1 Luz. leg. Reg. 341, speaking of the same act, Mr. Justice Clark says, "This act of assembly was passed after the sad and memorial disaster, which occured at the Avondale mine on the sixth day of September, 1869; that mine had but a single shaft, the hoisting shaft; the brattice enclosing the air passage caught fire from some cause unknown, and very soon the only entrance to or means of exit from the mine was filled with burning timbers, fire and smoke. The breaker and buildings covering the shaft were entirely consumed, and one hundred and eight unfortunate miners instantly perished. This great public calamity and the investigation which followed revealed the fact that the business of mining was negligently conducted, and that the lives of miners were constantly imperilled. Public sentiment demanded that this should be the subject of legislative provision, and this statute embodies the action of the legislature thereon." Haddock *v.* Com., 103 Penna. 243.

Between the years 1870 and 1890, the annual production of anthracite coal was more than doubled. As the business has grown, the dangers have increased, but so, also, have the knowledge and ability to cope with them grown. Nevertheless, the official reports of the Mine Inspectors show that in the year 1890, there were one thousand and sixty-six persons injured in the anthracite coal mines of the state, and two hundred and seventy-five killed. It cannot be said, nor is it contended here, that a business in which so large a portion of the public is employed, and fraught with so much danger, is beyond the power of the legislature to regulate.

Generally it is for the legislature to determine what laws and regulations are needed to protect the public health, and secure the public comfort and safety, and when its measures are calculated, intended, convenient and appropriate to accomplish these ends, the exercise of its discretion is not subject to review by the courts; but they must have some relation to these ends.

For the foregoing reasons, which we approve, and others that could be suggested, we deny a re-hearing. It might be proper to add that we think there is no doubt about the constitutionality of the section, under which the present proceeding was begun.

To which order and opinion counsel for appellant excepts and at their request bill sealed.

[SEAL] LUCIEN W. DOTY,

Judge of the Several Courts of Westmoreland County.

CAUSES OF ACCIDENTS FOR 1892.

	Fatal.	Non-fatal.
By falling slate,	12	14
By falling coal,	2	12
By falling roof coal,	2	. . . . .
By ice falling down the shaft,	1	. . . . .
By mine wagons,	4	8
By cage,	1	. . . . .
By being smothered by smoke from mine locomotive,	2	. . . . .
By a car at the tipple,	1	. . . . .
Kicked by a mule,	. . . . .	1
By powder,	. . . . .	3
By rock,	. . . . .	1
By a post,	. . . . .	1
By an explosion of fire-damp,	. . . . .	1
Total,	25	41
Widows by fatalities,	. . . . .	12
Orphans by fatalities,	. . . . .	23

The following statistics are a summary of accurate reports from all the mines in the district, as set forth in the tables:

Mines in the district,	85
Mines in the district operated,	74
Mines in the district abandoned,	3
Mines in the district opened during the year,	5
Number of persons employed in the mines,	9,090
Number of persons employed outside,	2,914
Total number of persons employed,	12,004
Total number of days worked by all the mines,	14,561½
Average number of days worked by sixty-four mines,	221
Tons of coal mined,	8,033,246.50
Tons of coal shipped,	3,068,476$\frac{735}{2000}$
Tons of coke manufactured,	2,296,788$\frac{600}{2000}$
Tons of coal mined for each fatal accident,	320,760.64
Tons of coal mined for each non-fatal accident,	195,589.29
Number of employes for each fatal accident,	480.36
Number of employes for each non-fatal accident,	292.9
Number of mules and horses in use,	960
Number of coke ovens built during the year,	133
Number of coke ovens operated,	7,332
Number of mine locomotives in use,	3
Number of kegs of powder reported as used in the mines,	2,715
Number of stationary engines used for hoisting and hauling coal,	77
Number of pumps in use,	111
Number of steam boilers in use,	212

From the foregoing statistics the reader will discover that the production of coal and coke has increased considerably. The increase in coal production is 1,281,631 tons, and in coke production 536,524 tons, and an increase of 587 persons inside of the mines, and a decrease of 161 persons employed outside. This shows a total increase of persons employed of 426. This has been a remarkable year in the coal production of the district. I am glad to state that the district has been free from strikes and other troubles. There has been a scarcity of cars to move the product of the mines during the year; this greatly curtailed the production. Two thousand seven hundred and fifteen kegs of powder have been reported as having been used, but there was far more than this used. The miners buy their powder in small quantities and no account is kept of it. Fully half of the mines in the district generate fire-damp in quantities that can be easily detected by the safety lamp. Several mines generate fire-damp in large quantities. Three mines reported a sudden outflow of fire-damp, but with all this I am glad to report that no fatalities have occurred from this cause, and I must say that the fire-bosses, mine-bosses, superintendents and all the officials deserve great credit for the skillful and wise management of the mines. During my forty years of varied experience in the mines, I never saw a more efficient set of officials, and I believe the operators ought to congratulate themselves in the wise selections they have made. The usual tables accompany the report, and a brief description of each mine, together with the decision of Judge Lucien W. Doty in the re-appeal of John P. Brennan, general manager of the McClure Coke Company.

All of which is respectfully submitted.

WILLIAM JENKINS,
Inspector.

IRWIN, WESTMORELAND COUNTY, PA., *February 9, 1893.*

RETROSPECT.

YEAR.	Coal production.	Number of men.
1885	3,929,728	7,498
1886	5,072,431	9,258
1887	5,435,923½	9,744
1888	6,228,117	10,232
1889	6,915,171	10,803
1890	6,995,879 1100/2000	11,764
1891	6,751,615 1500/2000	11,583
1892	8,033,246	12,009
	49,362,111 1300/2000	82,891

Increase of coal production in tons, 1892 over 1885, 4,103,518. Increase in the number of persons employed, 4,511. In 1885, there was 245,608 tons of coal mined for each fatal accident; in 1892, there was 320,760.64 tons, an increase of 75,152 tons. In 1885, there was 889,522 cubic feet of air going out at the outlets per minute, 889,522÷5,928=150 cubic feet of air per minute for each person employed in the mines. In 1892 we have 2,157,382 cubic feet of air per minute, 2,157,382÷9,090=237 cubic feet of air per minute for each person employed in the mines. We have made wonderful progress in the science of mining and mine ventilation in the last eight years. Still there are some croakers complaining that we are not advancing. I have no patience with such fellows. With all those achievements we must not relax our duty as mine officials, because eternal vigilance is the price of safety. With every official in charge of our mines doing his whole duty, I am confident that the number of accidents can still be diminished.

DESCRIPTION OF MINES AND MINING IMPROVEMENTS IN THE SECOND BITUMINOUS DISTRICT.

Alexandria Mine.—This mine has been kept in fair condition during the year, with an average of 24,730 cubic feet of air passing out at the outlet per minute. This volume is fairly distributed through the mine. The drainage has also been fair. Mining-boss, Daniel Campbell.

Amyville Mine.—This mine is in fair condition. On my last visit I measured 11,880 cubic feet of air passing out at the outlet per minute. This quantity is fairly distributed through the mine. The drainage is fair. A new ventilating furnace has been built in the mine. This furnace is capable of producing 30,000 cubic feet of air per minute if fired up briskly. The fire-bed is 36 square feet. Mining-boss, Samuel Jones.

Big Chief Mine.—There was an average of 16,078 cubic feet of air passing out at the outlet per minute. This quantity is sufficient to keep the mine in a healthy condition, if it is circulated around the mine, but unfortunately the doors and stoppings are not properly built and made air-tight, and on this account the air leaks, and very little of it gets to the face of the working places in some parts of the mine. The mine-boss is to be blamed for such conditions. The drainage is all right. Mining-boss, H. D. Thompson.

Claridge Mine.—This mine is situated at the terminus of the Manor Branch Pennsylvania railroad, in Penn township, Westmoreland county, and is operated by the Claridge Gas Coal Company. A good furnace has been built here this year. The fire-bed is 42 square feet in area On my last visit I measured 21,150 cubic feet of air passing out at the outlet per minute. This volume was well distributed, and the general condition of the mine was good. Mining-boss, William Johnson.

Calumet Shaft.—This mine is in good condition, with an average of 42,540 cubic feet of air passing in at the inlet per minute. This volume

is divided into several splits and well conducted to the face of the workings. Three overcasts have been built of iron, brick and stone and well plastered with mortar and cement. Ten brick and stone stoppings have been built between the main hauling roads. These stoppings are well plastered with mortar and cement. There is now very little leakage of air. Several doors have been displaced, thus doing away with trappers, which is a saving to the company, and also of untold annoyance to the mine officials on account of the doors being left open by careless persons. Mining-boss, John Nicholson.

Carbon Mine.—This mine has been in good condition during the year, with an average of 41,493 cubic feet of air going in at the inlet per minute. The distribution of this volume is well attended to. The drainage is also kept in fair condition. Mining-boss, Joseph Weightman.

Dilworth Mine.—This mine is in fair condition, with an average of 12,720 cubic feet of air passing out at the outlet per minute. The distribution of this volume is fairly attended to and the drainage is all right. Mining-boss, Thomas Whiteman.

Duquesne Mine.—The quantity of air has not been sufficient at all seasons of the year to keep this mine in a healthy condition. The average amount of air passing out at the outlet per minute was 11,200 cubic feet, and it requires double that quantity to keep the mine in a healthy condition. The drainage is in fair condition. Mining-boss, Mark James.

Denmark Mine.—On my last visit I measured 65,960 cubic feet of air passing out at the outlet per minute There are 311 persons employed in the mine, which is $65,960 \div 311 = 212.7$ cubic feet of air per minute for each person. Notwithstanding this I could not take any air measurements in several of the headings, thus showing that the air was very poorly distributed. If one-half of the volume was conducted to the face of the headings the mine would be in a healthy condition. The average quantity of air during the year was 53,560 cubic feet per minute passing out at the outlet. The rope haulage has been changed to a direct course into the coal field. A considerable distance had to be tunneled throug the "goaf" in order to accomplish this, but it will soon pay for the trouble as the distance to haul the coal has been shortened considerably. Mining-boss, Edmond Whiteman; assistant mining-boss, William Bainbridge.

Eureka Mines.—No. 1 mine is in very fair condition, with an average of 16,063 cubic feet of air passing in at the inlet per minute. This volume was distributed properly.

No. 2 Mine.—This is a new opening, and is ventilated by a fan 12 feet in diameter, built by Hocken, Smith & Wagner, of Irwin, which gives great satisfaction, and on my last visit I measured 30,800 cubic feet of air per minute passing out at the outlet. This volume was well distributed through the mine. The drainage in both mines is all right. A new tipple and the Mitchel patent dump has been erected at the mine, which are a great improvement. Mining-boss, James Bayley.

Emma Mine.—This mine is in a healthy condition, with an average of 7,560 cubic feet of air in circulation per minute. The drainage is all right. Mining-boss, Adam Whitehead.

Greensburg No. 1 Mine.—This mine is in fair condition, with an average of 16,807 cubic feet of air per minute going out at the outlet. This volume is fairly distributed through the mine. The drainage is fair. The tail-rope system of haulage has been introduced into the mine during the year. Length of haulage road 3,600 feet, size of main rope $\frac{7}{8}$-inch, tail rope $\frac{5}{8}$-inch. They haul 30 to 40 wagons at a trip easily. The outside improvements are a brick engine house and a pair of engines 16″×30″. Mining-boss, David Clark.

Greensburg No 2 Mine.—This mine is ventilated by exhaust steam. The average quantity of air in circulation per minute is 7,857 cubic feet. There are only 26 persons employed in the mine, so that this quantity of air is sufficient to keep the mine in a healthful condition. An engine house has been built and a pair of engines erected for the purpose of hauling the coal out of the mine in the near future. Mining-boss, John McIntire.

Hempfield Mine.—This mine has been kept in very good condition, with an average of 41,810 cubic feet of air going in at the inlet per minute. This volume is divided into several currents and is circulated all through the mine. Mining-boss, Levi Ludwick.

Hampton Mine.—This mine is in fair condition, with an average of 22,000 cubic feet of air going out at the outlet per minute. The distribution of this volume is very fair, except on my second visit when the air was defective in Nos. 29 and 35 entries. The other entries were well ventilated. The drainage was fair. Mining-boss, Edgar Thompson.

Hecla Nos. 1 and 2 Shafts.

No. 1 Shaft.—This mine has an average of 40,535 cubic feet of air going in at the inlet per minute. This volume is divided and well distributed, and the mine is kept in a healthy condition. The drainage of the mine is all right. All persons in the mine are using the "bonneted Claney" lamps for lighting purposes. Mining-boss, William Dean.

No. 2 Shaft.—A fan of the Guibal pattern 30 feet in diameter and 10 feet face, and driven by an engine 26″×36″ has been erected at this mine. This fan, making 22 revolutions per minute, produces an average of 40,071 cubic feet of air per minute. The fan can be speeded to produce 300,000 cubic feet if it ever should become necessary. Two substantial overcasts have been constructed over the main hauling roads near the bottom of the shafts. The volume of air is divided at the downcast into two currents; each of these currents is well conducted to the face of all the workings. A new pumphouse has been built 12′×30′ timbered with 10″×12″ legs and 12″×12″ collars. The mine is drained by a Yough pump 26″×48″ steam cylinder, water cylinder 16″×48″, tail-pipe 14″ and column pipe 14″. The mine is well drained and well

managed in every respect. The bonneted Clany safety-lamp is used in the mine for lighting purposes. There has not been any fire-damp discovered in the mine yet to my knowledge, but as they have commenced drawing pillars, the management thought it best and safest to use safety-lamps exclusively in the mine for lighting purposes. Mining-boss, William Snedden.

Jamison Mine.—This is a new opening and is located on the Alexandria Branch P. R. R., in Hempfield township, Westmoreland county, and operated by the Jamison Coal and Coke Company. The mine will be a drift opening, but at present is used as a slope on account of local conditions. The coal dipped at an angle of 22° for 180 feet into a large local swamp, here it took a raise at the same angle when the coal comes to its level. The roof in the swamp will be blasted down so as to make the hauling roads level. The cleaves or slips run north 64° west, the coal averages 7′ in thickness. The mine is ventilated at present by exhaust steam. The outside improvement is a tipple. The coal is brought out of the mine and dumped on a reversible screen. The fine coal is carried from this point by elevators to a revolving screen; here it is separated. The slack is used for coking purposes and the nut is shipped for steam purposes. There are a pair of rolls in connection with the elevator which are used if necessary to crush all the coal for coking purposes. A friction engine 16″×30″ is used to hoist the coal out of the mine, and for running the elevator and rolls. A tubular boiler 5′×16′ is used for furnishing steam. An engine and boiler-house, 30 coke ovens, 12 blocks of houses and a store room have been built at the plant. Mining-boss, John Hart.

Mutual Nos. 1, 2 and 3 Mines.

No. 1 Mine has stood idle all the year.

No. 2 Mine.—The condition of this mine has been very good during the year, with an average of 30,133 cubic feet of air going out at the outlet per minute; the distribution of this volume is well attended too, and the drainage is all right.

No. 3 Mine.—On my first visit to this mine I discovered that the ventilation was defective at the face of the headings, although there was 22,960 cubic feet of air passing out at the outlet per minute. This was soon remedied by having an air shaft sunk near the face of the workings and a fresh current of air was propelled to the face of every working place. Mining-boss, William M. Hart.

The Southwest Connellsville Coal and Coke Company Mines.

No. 1 "A" Shaft.—Important improvements have been made in this mine during the year. The pump house has been enlarged to 12′×75′ and the pump made larger, and two additional pumps have been added, size 12″×48″ and 10″×36″, and a column pipe 16″ in diameter. Four

brick and five wooden overcasts have been built. This displaces several doors on the main hauling roads, which were a continual annoyance to the mine officials besides being expensive to the company. The air has also been increased in the workings by doing away with the doors. The rope haulage has been extended 2,460 feet. The "bonneted Claney" safety lamp is used for lighting purposes. Preparation has been made to light up the shaft bottom with electricity. The mine is now in first-class condition with an average of 84,993 cubic feet of air passing in at the inlet per minute. This volume is judiciously divided and circulated to the face of all the workings. Mining-boss, John Duncan.

No. 1 "B" Shaft.—The rope haulage has been extended 1,200 feet, two wooden overcasts have been built for the purpose of dividing the air-current and doing away with some doors on the main hauling roads. The bonnetted Claney safety lamp is used in this mine for lighting purposes. The mine is in first-class condition with an average of 61,453 cubic feet of air going in at the inlet per minute. This volume is well divided and circulated to the face of all the working places. Mining-boss, John Whitfield.

Alice No. 2 Mine.—This mine has been kept in a healthful condition, with an average of 59,467 cubic feet of air passing in at the inlet per minute. This volume is well divided and circulated to the face of all the working places. Water broke into the mine from the Union mine; but there was not much damage done except washing out the road-beds and flooding the dip workings for a few days. The mine is kept well drained. Mining-boss, George Santimyer.

No. 3 Shaft.—This mine is in very good condition with an average of 47,815 cubic feet of air passing in at the inlet per minute. This volume is well divided and circulated to the face of the working places. The mine drainage is also kept in good condition. Mining-boss, Robert Hair.

No. 4 Mine.—This mine is in a healthful condition, with an average of 36,835 cubic feet of air passing in at the inlet per minute. This volume is divided into three splits and well circulated to the face of the workings. The drainage is also kept in good condition. Mining-boss, Robert Morris.

Arona Mine.—This is a new mine, a drift opening, located on the Hempfield Branch Pennsylvania railroad in Sewickley township, Westmoreland county, and is operated by the Arona Gas Company. Thomas Donohoe is general superintendent. Two parallel main headings are being driven. Four butt headings have been turned off these main headings at right angles and four rooms have been turned off one of the butts, and three off of the other. Forty men are employed in the mine and nine on the outside. The mine at present is ventilated by natural means, assisted by an 18-foot stack on the mouth of one of the headings. The outside improvements are three side tracks. A tipple is

built and so arranged that the screens can be moved on wheels and any sizes of coal can be got, 1½-inch, ¾-inch, run of the mine and slack coal. A revolving screen is placed under the 1½-inch screen for the purpose of separating the nut from the slack coal. Mining-boss, William Nesbit.

Penn Gas Coal Company Mines.

Coal Run Mine.—This mine is kept in a healthful condition with an average of 24,090 cubic feet of air passing out at outlet per minute. This volume is well distributed through the mine. The drainage is good. Mining-boss William Rodgers.

Penn Gas No. 1 Shaft.—The average quantity of air passing out at the outlet per minute is 32,715 cubic feet. This quantity is fairly distributed through the mine, and the drainage is also kept in good condition. Two cylinder boilers forty-two inches in diameter and thirty feet long have been erected for the purpose of generating steam. Mining-boss, John Bolam.

Penn Gas No. 2 Shaft.—This mine is in very fair condition with an average of 43,693 cubic feet of air passing the outlet per minute. The distribution of this volume is well attended to, and the mine drainage is very good. Two cylinder boilers forty-two inches in diameter and thirty feet long have been erected for the purpose of supplying steam for the plant. Mining-boss, William Jamison.

Penn Gas No. 4.—The average quantity of air passing out at the outlet per minute is 34,287 cubic feet. There are several inlets of air into the mine. The distribution and drainage are very fair. Mining-boss, John Giles.

Port Royal No. 1 Shaft.—This mine has been kept in a healthful condition with an average of 17,160 cubic feet of air passing out at the outlet per minute, and the distribution of this volume was well attended to. The drainage was always fair. The No. 1 shaft has been abandoned for the present. Mining-boss, Robert C. McElroy.

Pleasant Valley Mine.—This mine is a new drift opening and is situated at the head of the south branch of the Lyons Run, in Penn township, Westmoreland county, and a distance of 7.3 miles from Stewart station on the Murrysville Valley railroad. The mine is operated by the Elkins' Gas Coal Company. There are four openings and the main headings are driven 1,200 feet with two butt headings at right angles, driven 300 feet. There has been no coal shipped from the mine yet. They are at present supplying the county trade. An improved tipple with the Mitchell patent dump has been erected, and as as soon as it is completed they will be ready to ship coal. A branch road nearly four miles in length has been built to connect with the Murrysville Valley railroad. Twelve miners are now employed in the mine. Mining-boss, Joseph H. Powell.

Robbin's Mine.—This mine is in good condition with an average of 41,537 cubic feet of air passing at the outlet per minute. This volume is well distributed through the mine, and the drainage is all right. The drift mouth has been retimbered with 10″×12″ timber; it is a neat piece of work and adds to the security of the mine. Mining-boss, William McKee.

Smithton No. 1 Mine.—The quantity of air is not sufficient in this mine at all seasons of the year. The average amount going out at the outlet per minute is 13,420 cubic feet; this volume was very poorly distributed. The drainage was in fair condition.

No. 2.—This is a new mine, a shaft opening eighty-two feet in depth and 9′×22′ in area divided into three compartments, two for cage-ways, the other to be used for pumps and upcasts. The shaft is timbered from top to bottom with 10″×12″ timber and lined with two-inch plank. The ventilation is produced by a twelve-foot fan. I measured 16,000 cubic feet of air passing out at the outlet per minute. This volume was well conducted to the face of the headings. The outside improvements are an engine and boiler houses, a pair of first motion engines 15″×30″, steel wire rope one-and-one-fourth inch, two tubular boilers 5′×14′. A second opening is being sunk, which will be used as an air shaft and a way of escape. Mining-boss, J. N. King; assistant, Thomas Parkin.

Spring Hill No. 2 Mine.—The condition of this mine has been very good during the year, with an average of 30,607 cubic feet of air passing out at the outlet per minute. This volume is divided and is distributed through the mine. The drainage of the mine is all right. Mining-boss, William S. Gibson.

Shaner No. 2 Mine.—This mine has been kept in fair condition with an average of 22,793 cubic feet of air passing at the outlet per minute. This volume was fairly distributed throughout the mine, and the drainage is in fair condition. Mining-boss, Reuben Street.

Standard No. 2 Shaft.—This mine has been kept in a healthy condition during the year with an average of 129,353 cubic feet of air passing in at the inlet per minute. The volume of air has been considerably increased over last year. This was brought about by driving additional air courses, dividing the air into seven separate splits: each group of miners are now getting a fresh current of air from the downcast. Each person employed in the mine is supplied with 317 cubic feet of air per minute. The mine is also kept well drained. Some changes are being made in the mode of working the coal, the butt headings are driven 1,000 feet before turning any rooms, then they commence turning rooms at the head of the entries, these rooms are turned forty feet apart on the entry and driven to their destination. The pillars are then taken out. When those room pillars are drawn to the headings, the heading pillar is taken out. There is no coal lost in this way, and I believe it is the only proper and safe way of working the coal in the deep mines of the

Connellsville coke regions. An engine house has been excavated and been well arched with brick, and a tail-rope system of haulage has been introduced. John A. Hart is mining-boss, with Alex. Erstine as an assistant.

United No. 1 Shaft.—This mine has been kept in good condition during the year with an average of 63,013 cubic feet of air passing at the inlet per minute. This volume is well distributed throughout the mine, with the water gauge showing only .42 of an inch. The drainage is kept in good condition also. Mining-boss, William West.

United No. 2.—This mine has been in fair condition during the year with an average of 48,570 cubic feet of air passing at the inlet per minute. This volume is well distributed through the mine, and the drainage is in fair condition. The bottom of the swamp has been finally reached, and the coal has commenced to raise. This necessitated the blasting of a good deal of roof down in order to make the hauling roads of uniform grade. Twelve hundred feet of new trestle has been built between the bin and the ovens for the larries to pass over. Mining-boss, James Wardley.

Stricker Mine.—This is a slope opening and was opened during the year, and is located on the Sewickley branch of the South West Pennsylvania railroad in Mt. Pleasant township, Westmoreland county, and is operated by the J. A. Strickler Coal and Coke Company, limited. The slope is well timbered with 10″×12″ double timber. A second opening has been made, and the mine at present is ventilated by steam exhaust from the pump. The outside improvements are an engine and boiler house, supplied with an engine and boiler, a tipple and two blocks of houses for operatives. J. A. Strickler is superintendent and Hugh Ross is mining-boss.

Yough Slope.—One morning in the beginning of May as the fire-boss was examining the mine he discovered a raging fire in Nos. 1 and 2 headings in the dip. He tried to extinguish it but soon found that it was beyond his control, and it was soon discovered that these dip headings had to be flooded in order to put the fire out. This entailed a loss of time and a good deal of expense in the busy season of the year. A hole 229 feet in depth and eight inches in diameter had been drilled in these dippings for the purpose of pumping the water out, a feeder of gas had been struck at the bottom of this hole, and on Sunday afternoon some person threw a light down the hole and lighted the gas during the temporary stoppage of the fan. This caused a slight explosion and the coal and wood was set on fire, but there was no notice taken of it until the fire-boss made his examination in the morning. An engine house has been constructed at the bottom of the slope, and an engine has been erected for the purpose of hauling the coal out of the dip, a pair of engines 10″×18″ and 4 feet drum, wire rope five-eighths. The empty cars run down by gravity. A Yough pump 16″×24″ is used for pumping the water out of the dip workings through the drill hole. The mine is kept in a healthful condition with an average of 32,750 cubic

feet of air in circulation per minute, and the mine drainage is kept in fair condition. Mining-boss, James Latimore.

Youghiogheny Shaft.—This mine is in a healthful condition with an average of 34,840 cubic feet of air passing out at the outlet per minute. This quantity is well distributed through the mine, and the drainage is in fair condition. Mining-boss, James Collins.

New York and Cleveland Gas Coal Company Mines.

Oak Hill No. 4 Mine.—This mine has been kept in a reasonably healthful condition during the year with an average of 40,747 cubic feet of air passing out at the outlet per minute. Nearly every heading in the mine has an inlet of air, so that the distribution is very fair all through the mine. The drainage is also in fair condition. Mining-boss, William P. Owens.

Plum Creek.—A new furnace has been built in this mine during the year. The quantity of air in circulation per minute is 35,745 cubic feet. This volume is well distributed through the mine, and the drainage is in fair condition. A locomotive has been introduced into the mine to haul the coal, in place of mules. This necessitated building a new check house and part of the incline plane and other improvements. Mining-boss, William W. Carter.

Sandy Creek.—There is an average of 27,813 cubic feet of air passing at the outlet per minute; the distribution is fair, except on the north side of the mine; the ventilation was defective there by reason of the furnace being too far away from that part of the mine. The drainage is in fair condition. Mining-boss, Joseph Corbett.

Ocean No. 1.—This mine has been in a reasonably healthful condition during the year, with an average of 23,147 cubic feet of air passing at the outlet per minute; this quantity is fairly distributed through the mine. The drainage is all right. Mining-boss, Josiah Suffolk.

Ocean Mine.—This mine has been kept in fair condition except that on one of my visits I discovered that the miners were working ahead of the air current. On my other visits I measured 5,400 cubic feet per minute passing out at the outlet, and the distribution was fair. The drainage has also been improved considerably. Mining-boss, Gottleib Vogell.

Osceola Mine.—This mine is in good condition, with an average of 30,420 cubic feet of air passing out at the outlet per minute. This volume is well distributed, and the drainage is all right. Mining-boss, Frank Ridley.

West Overton Mine.—The ventilation has not been satisfactory at all seasons of the year, owing to the mine being ventilated by natural means. On two of my visits I measured 2,970 and 7,200 cubic feet per minute. On the other two visits I could not take the air measurements. The drainage is all right. Mining-boss, John Boyle.

20-12-92.

Weinman Mine.—On my first visit to this mine I found the ventilation all right. There were 5,200 cubic feet of air in circulation per minute; on my next visit there was no air in circulation. I notified the operator to build a small furnace, which he did, and on subsequent visits I found the mine well ventilated. Mining-boss, Jacob Weinman.

West Newton No. 1 Shaft.—This mine is kept in a healthful condition, with an average of 48,960 cubic feet of air passing at the outlet per minute. This volume is well distributed through the mine, and the drainage is all right. Mining-boss, Robert Hall.

Penn Manor Shaft.—This mine has been in a very fair condition with an average of 23,220 cubic feet of air passing at the outlet per minute. This volume is divided into two splits and circulated to the face of the headings. The drainage is also all right. Mining-boss, Samuel Ferguson.

Lippencott Mine.—This mine has been kept in a healthful condition during the year, with an average of 52,500 cubic feet of air passing at the inlet per minute. This volume is well distributed and circulated to the face of the headings. It is also kept well drained. Mining-boss, George Eustis.

Whitney Mine.—This mine has been in a healthful condition during the year with an average of 49,517 cubic feet of air passing at the inlet per minute. This quantity is well divided and circulated through the working places of the mine. It is also kept well drained. Mining-boss, J. C. Knapper.

Madison Mine.—On my first visit I measured 35,360 cubic feet of air passing at the outlet per minute and this volume was well distributed through the mine. On my next visits I measured only 11,040 and 16,830 cubic feet passing out. This quantity was not sufficient to keep the mine in a healthful condition, so on my last visit I instructed the mine-boss to take measures to put more air into circulation which will no doubt be done before spring. Mining-boss, Martin Doyle.

Mammoth Nos. 1 and 2 Mines.—These mines have been kept in a very good and healthful condition during the year, with an average of 77,620 cubic feet of air passing at the inlet per minute. This quantity gives each person employed in the mine 313 cubic feet per minute. This volume is judiciousiy divided and circulated to the face of the working places.

An overcast has been built over No. 1 flat, for the purpose of taking the main body of air off of the traveling way. The shaft bottom, pump house and hauling roads to the main slope are lighted by electricity and also the outside buildings. Each light is of sixteen candle power. The shaft bottom and hauling roads to the main slope have been whitewashed. This gives it a bright appearance. The mine is kept well drained. On April 18th, the mine-boss reported a sudden out-flow of fire-damp in No. 4 flat. This gas came from the bottom. This is the only gas that has been reported in the mine this year. A

new brick building 29′×47′ for an air compresser has been built, and an air compresser fitted up with a duplex crank and fly wheel, size 16×20×32; it is used for pumping water from the dip workings. All of the shaft coke ovens were also rebuilt. James Eaton is mining-boss, with John Muar as assistant.

McClure Coke Company Mines.

Buckeye Mine.—This mine is in good condition with an average of 25,180 cubic feet of air passing at the outlet per minute. This volume is fairly distributed through the mine. The drainage is also kept in fair condition. Mining-boss, George J. Burns.

Bessemer Mine is standing idle.

Enterprise Mine.—This mine is in good condition with an average of 11,340 cubic feet of air per minute passing at the outlet, and this volume is well circulated through the mine. The drainage is all right. Mining-boss, John Narry.

Hazlett Shaft.—This mine is in fair condition with an average of 15,800 cubic feet of air passing at the outlet per minute. This volume is fairly distributed. The drainage is also in fair condition. Mining-boss, Alexander Davenport.

Hazlett Slope has been idle all the year.

Mayfield Mine.—This mine is in good condition with an average of 17,995 cubic feet of air passing out at the outlet per minute. This quantity is fairly circulated through the mine. The drainage is also kept in fair condition. Mining-boss, Peter P. Glenn.

Mullin Mine.—A Guibal fan 12 feet in diameter, driven by an engine 8″×14″ attached direct to the fan has been erected at the mine during the year. On my last visit I measured 21,000 cubic feet of air passing at the inlet per minute. This volume was well circulated through the mine, and it is in a healthful condition. Mining-boss, Jacob Hauser.

Rising Sun Mine.—This mine has been kept in good condition during the year with an average of 20,865 cubic feet of air passing at the inlet per minute. This volume is well circulated through the mine, and the drainage is in fair condition. Mining-boss, Thomas Evans.

Union Mine.—This mine has been in very fair condition with 18,162 cubic feet of air passing at the outlet per minute, and this volume was fairly distributed through the mine. The drainage is well kept up also. Mining-boss, R. S. Raygor.

Donnelly No. 1 Mine.—This mine is in very good condition with an average of 19,900 cubic feet of air passing at the outlet per minute. This volume is well distributed through the mine. The drainage is all right.

Donnelly No. 2 is in fair condition with an average of 12,915 cubic feet of air passing at the oulet per minute. This volume is fairly distributed through the mine. These mines have been connected under-

ground, and a slope has been driven on an angle of 7′ to the 100′. The slope is timbered with 10″×12″ double timber: a very neat piece of work. At the foot of the slope 4 main entries have been started in the center of the dip. The coal and water will have a natural fall into the main entries. The coal from these main headings will be hauled to the surface by a tail-rope system of haulage. The fan at No. 1 will be moved to a suitable place to ventilate both. When this is done, both mines will be practically one. The outside improvements are an engine and boiler-house, first motion engine 16″×32″, two drums 5′ in diameter, main rope $\frac{5}{8}$, tail rope $\frac{9}{16}$, 2 two-flue boilers 40″ in diameter, by 32 feet long. A coal bin of 14,000 bushels capacity has been erected. The coal from this bin will be hauled by a locomotive to charge the ovens. This is a decided improvement over the old method of handling the coal at the mine. Fifty-two twelve-foot coke ovens have also been built. Mine-boss, William Alexander.

Westmoreland Gas Coal Company Mines.

Westmoreland Shaft—This mine is well managed and has an average of 82,152 cubic feet of air passing at the outlet per minute. The distribution of this volume is well attended to, and the mine drainage is kept in good condition. On December the 12th there was a slight explosion of fire-damp mixed with small quantities of coal dust. One man was slightly burned on the arm. At the time of the accident they were drawing back some room pillars and there happened a very heavy fall of rock which drove the gas down and raised the coal dust at the same time, and a miner going in at the time with a naked light, after having been warned not to do so, set fire to the gas and dust. The results from such carelessness might have been more serious. Mining-boss, James Thompson.

South Side.—This mine was in operation only thirty-three and one-half days during the year, in the months of January and February. The mine is well ventilated and kept in good condition when in operation. Mining-boss, John Williams.

Larimer No. 3.—The condition of this mine is very fair, with an average of 14,693 cubic feet of air in circulation per minute. The distribution is fairly attended to, and the drainage is kept in good condition. Mining-boss, Arthur Fowler.

Larimer No. 4.—An endless system of rope haulage has been in operation at this mine for some time. Three face headings have been driven. The middle one is used as an intake air course, and the two outside ones are used for hauling purposes. Butt headings are turned off of these face headings east and west at intervals of about five hundred feet, the coal is gathered by mules to the mouth of these butt headings, from whence it is taken out by steam power in fifteen wagon trips, and there are seventy-five loaded wagons going out at one trip

and seventy-five empty ones coming in. The trips are about five hundren feet apart on the rope. The full wagons are taken down the incline plane by means of a clutch attached to the rope. Sometimes there are two trips of fifteen full wagons on the incline plane at one time, and as many empty ones going up. The hauling engine is placed under the tipple. When all is in good working order it is the intention to haul 2,000 tons of coal out of this mine every day. The mine is ventilated by a split system, each pair of headings getting its own supply of air from the inside. There is an average of 53,333 cubic feet of air passing at the inlet per minute. This is divided into nine splits, having 5,926 cubic feet in each split. A large drain has been blasted in the rock to drain the mine, and the drainage is very good. Mining-boss, George Carroll.

Export Mine.—This is a new drift opening located on the Turtle Creek Valley railroad, in Franklin township, Westmoreland county, operated by the Westmoreland Gas Coal Company. The mine is opened on the double heading system, and is ventilated by a small fan. At the time of my visit I measured 11,880 cubic feet of air going out at the outlet per minute, and this volume was well distributed through the mine. The mine was well drained, an air shaft has been sunk and a larger fan will be placed on this shaft at an early day. A large and substantial tipple has been built at the mine, and it is so arranged that $1\frac{1}{2}$ inch, $\frac{3}{4}$ inch nut, and run of the mine coal can be run over the screens by very little changing of screens. When the mine is in full operation, it is the intention to handle 2,000 tons of screened coal per day. Mining-boss, John Williams.

TABLE NO. 1—*Showing Location of Collieries in the Second Bituminous Mine District.*

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Amyville	Youghiogheny Gas Coal Company	Westmoreland county	John W. Peters	Suterville, Westmoreland county.
Arnold	Arnold Coal Company	do. do.		Bussell, Westmoreland county.
Alexandria	Alexandria Coal Company	do. do.	Thomas Donohoe	Greensburg, Westmoreland county.
Avona	Avona Gas Coal Company	do. do.	Lund Washington	Darrah, Westmoreland county.
Big Chief	John Blythe & Co.	do. do.	John Blythe	West Newton, Westmoreland county.
Buckeye	McClure Coke Company	do. do.	James Dumphy	Stauffers, Westmoreland county.
Bessemer	do. do.	do. do.	James Devlin	Mt. Pleasant, Westmoreland county.
Claridge	Claridge Gas Coal Company	do. do.	J. H. Patton	Greensburg, Westmoreland county.
Carbon	Carbon Coal Company	do. do.	F. I. Kimball	do. do.
Calumet	Calumet Coke Company	do. do.	S. M. Hankins	Calumet, Westmoreland county.
Donnelly Nos. 1 and 2	McClure Coke Company	do. do.	Peter P. Glenn	Stoners, Westmoreland county.
Dilworth	Wm P. Dilworth & Co.	do. do.	Thomas Whiteman	Franks, Allegheny county.
Duquesne	Corey Coal Company	Allegheny county	William L. Dixon	Swissvale, Allegheny county.
Denmark	Manor Gas Coal Company	Westmoreland county	A. P. Cameron	Manor, Westmoreland county.
Export	Westmoreland Gas Coal Company	do. do.	A. N. Humphreys	Irwin, Westmoreland county.
Eureka	Eureka Coal Company	do. do.	William McCune	West Newton, Westmoreland county.
Emma	Miss Maria F. Overholt	do. do.	J. W. Overholt	Scottdale, Westmoreland county.
Enterprise	McClure Coke Company	do. do.	Felix Boyle	do. do.
Frankstown	Jacob Weinman	Allegheny county	Jacob Weinman	Wilkinsburg, Allegheny county.
Greensburg No. 1	Greensburg Coal Company	Westmoreland county	A. W. Jones	Greensburg, Westmoreland county.
Greensburg No. 2	do. do.	do. do.	do.	do. do.
Jamison	Jamison Coal Company	do. do.	Thomas S. Jamison	do. do.
Hecla, No. 1 shaft	The Hecla Coke Company	do. do.	Thomas Laird	Southwest, Westmoreland county.
Hecla, No. 2 shaft	do. do.	do. do.	do.	do. do.
Hempfield	Hempfield Coal Company	do. do.	A. W. Jones	Greensburg, Westmoreland county.
Hazlett Nos. 1 and 2	McClure Coke Company	do. do.	William Murry	Mt. Pleasant, Westmoreland county.
Hampton	Hampton Coal Company	Allegheny county	John S. Stewart	Edgewood Park, Allegheny county.
Lucesco	Leechburg Coal and Coke Company	Westmoreland county	W. H. Wray	Leechburg, Armstrong county.
Lippencott	Hostetter Coke Company	do. do.	F. J. Friend	Hostetter, Westmoreland county.
Larimer Nos. 3 and 4	Westmoreland Gas Coal Company	do. do.	A. N. Humphreys	Irwin, Westmoreland county.
Mutual Nos. 1, 2 and 3	The Mutual Coke Company	do. do.	H. C. Burkett	United, Westmoreland county.
Mammoth Nos. 1 and 2	H. C. Frick Coke Company	do. do.	Charles B. Franks	Mammoth, Westmoreland county.
Muilin	McClure Coke Company	do. do.	William Murry	Mt. Pleasant, Westmoreland county.
Mayfield	do. do.	do. do.	J. P. Brennen	Scottdale, Westmoreland county.
Madison	Madison Gas Coal Company	do. do.	Thomas Donohoe, Jr.	Greensburg, Westmoreland county.
No. 1 "A" and "B" shafts	The Southwest Connellsville Coke Co.	do. do.	William Ramsay	Mt. Pleasant, Westmoreland county.
No. 2	do. do.	do. do.	do.	do. do.
No. 3	do. do.	do. do.	do.	do. do.
No. 4	do. do.	do. do.	do.	do. do.
Ocean No. 1	Yonghiogheny River Coal Company	do. do.	John F. Hosack	Scott Haven, Westmoreland county.
Osceola	Osceola Coal Company	Allegheny county	James W. Shields	Emblem, Allegheny county.
Oak Hill No. 4	New York and Cleveland Gas Coal Co.	do. do.	T. B. DeArmit	Turtle Creek, Allegheny county.
Ocean	Gottlieb Vogele	do. do.	Gottlieb Vogele	Wilkinsburg, Allegheny county.
Plum Creek	New York and Cleveland Gas Coal Co.	do. do.	T. B. DeArmit	Turtle Creek, Allegheny county.
Port Royal No. 1 shaft	Port Royal Coal and Coke Company	Westmoreland county	J. A. Brown	Fitz Henry, Westmoreland county.
Penn Gas No. 1 shaft	Penn Gas Coal Company	do. do.	John F. Wolf	Irwin, Westmoreland county.
Penn Gas No. 2 shaft	do. do.	do. do.	do.	do. do.
Penn Gas No. 3 shaft	do. do.	do. do.	do.	do. do.
Penn Gas No. 4	do. do.	do. do.	do.	do. do.

Penn Gas Coal Run	do.	do.	do.	do.	do.	do.
Penn Gas Slope	do.	do.	do.	do.	do.	do.
Penn Gas drift	do.	do.	do.	do.	do.	do.
Pleasant Valley	The Elkins Gas Coal Company	do.	do.	F. Z. Shellenberg	Harrison City	Westmoreland county.
Robbins	Robbins Coal Company	do.	do.	Jas. S. Hosack	Scott Haven	Westmoreland county.
Penn Manor shaft	F. L. Stephenson	do.	do.	Samuel Ferguson	Harrison City	Westmoreland county.
Rising Sun	McClure Coke Company	do.	do.	James Devlin	Mt. Pleasant	Westmoreland county.
Smithton Nos. 1 and 2	Waverly Coal and Coke Company	do.	do.	David Orr	Smithton	Westmoreland county.
Spring Hill Nos. 1 and 2	Spring Hill Gas Coal Company	Allegheny county	Allegheny county	E. W. Boyd	Turtle Creek	Allegheny county.
Sandy Creek	New York and Cleveland Gas Coal Co.	do.	do.	William Fisher	White Ash	Allegheny county.
Strickler	J. A. Strickler Coke Company, Limited	Westmoreland county	Westmoreland county	J. A. Strickler	Wilkinsburg	Allegheny county.
Shaner No. 1	Shaner Gas Coal Company	do	do	George W. Schniederberg	Penn Building	Pittsburg, Pa.
Shaner No. 2	do.	do.	do.	do.	do.	do.
Standard No. 1	H. C. Frick Coke Company	do.	do.	Robert Ramsay	Mt. Pleasant	Westmoreland county.
Standard No. 2	do.	do.	do.	do.	do.	do.
Standard slope	do.	do.	do.	do.	do.	do.
South Side	Westmoreland Gas Coal Company	do.	do.	A. N. Humphreys	Irwin	Westmoreland county.
United No. 1 shaft	United Coal and Coke Company	do.	do.	H. C. Burkett	United	Westmoreland county.
United No. 2	do.	do.	do.	F. A. Plotner	Perce	Westmoreland county.
Union	McClure Coke Company	do.	do.	J. P. Brennen	Scottdale	Westmoreland county.
West Newton No. 1 shaft	West Newton Coal Company	do.	do.	W. F. Allison	West Newton	Westmoreland county.
Whitney	Hostetter Coke Company	do.	do.	John T. Rush	Whitney	Westmoreland county.
West Overton	A. C. Overholt & Co.	do.	do.	B. F. Overholt	West Overton	Westmoreland county.
Westmoreland shaft	Westmoreland Gas Coal Company	do.	do.	A. N. Humphreys	Irwin	Westmoreland county.
Wellman	Jacob Wienman & Co.	Allegheny county	Allegheny county	Jacob Wienman	Wilkinsburg	Allegheny county.
Yough slope	Yough Slope Gas Coal Company	Westmoreland county	Westmoreland county	Robert H. Latimore	West Newton	Westmoreland county.
Youghiogheny shaft	Ohio and Pennsylvania Coal & Coke Co.	do.	do.	James A. Watkins	Fitz Henry	Westmoreland county.

TABLE NO. 2.—*Giving the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the Second Bituminous Mine District, for the year ending December 31, 1892.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Alexandria	Goff, Westmoreland county,	185,783.40	67,555.27	84,451.40	236	334	2			4	28		293
Amyville	Suterville, Westmoreland county,	11,926		11,926	106	65				1	10		
Arona	Madison, Westmoreland county,	2,950.75		2,950.75	42	12				1	1		
Big Chief	Robbins, Westmoreland county,	113,894		113,894	219	166				1	4		
Bessemer and Rising Sun	Mt. Pleasant, Westmoreland co.,	62,092	41,395		258	73				3	9		103
Buckeye	Stauffers, Westmoreland county,	92,845	61,897		283	130					14		160
Bessemer	Mt. Pleasant, Westmoreland co.,												170
Claridge	Claridge, Westmoreland county,	88,723		88,723	257	106	1	1			12		
Carbon	Greensburg, Westmoreland county,	132,802	6,430	116,861	164	187		2		4	20		48
Calumet	Calumet, Westmoreland county,	117,000	84,700		252	206	1			6	19		225
Dilworth	Scott Haven, Westmoreland co.,	51,000		51,000	250	101					7		
Denmark	Claridge, Westmoreland county,	249,852.60		249,852.60	253	344		2			17		
Donnelly Nos. 1 and 2	Stoners, Westmoreland county,	106,156	70,771		287	118		1	1		12		52
Duquesne	Wilkinsburg, Allegheny county,	95,792		95,792	265	183		1		8	11	1	
Eureka	Jacob's Creek, Westmoreland co.,	108,000		108,000	250	144	2			1	3		
Emma	Hoggs, Westmoreland county,	18,253	13,339		224	23					3		36
Enterprise	Haweye, Westmoreland county,	6,630	4,420		55	34				1	4		52
Export	do. do.	48,227		32,543	35	185	1			2	11		
Greensburg No. 1	Greensburg, Westmoreland county,	146,446.45	2,335.35	146,446.45	163	89			100	2	8		10
Greensburg No. 2	do. do.	26,409.20		26,409.20	172	30				1	4		
Hempfield	do. do.	114,330		111,657	216	119			12	4	14		
Hecla No. 1 shaft	Southwest, Westmoreland county,	139,021.90	92,235.60		274	199				8	37		272
Hecla No. 2 shaft	Tranger, Westmoreland county,	135,144	88,572.45		245	201	1	1	2	6	32		500
Hazlett Nos. 1 and 2	Mt. Pleasant, Westmoreland co.,	56,916	37,944		296	105				5	10		261
Hampton	Wilkinsburg, Allegheny county,	56,254		40,942	200	116		1			18		
Lippencott	Hostetter, Westmoreland county,	60,758.01	44,336.50		145	99	1		100	2	5		305
Larimer Nos. 3 and 4	Larimer, Westmoreland county,	399,599		262,729	291.12	528	2	2	140	4	32		
Larimer Coke Works	do. do.												300

Mutual Nos. 1, 2 and 3,	Mutual, Westmoreland county,	59,736	28,900	...	220	103	...	1	...	2	10	...	174
Mammoth Nos. 1 and 2,	Mammoth, Westmoreland county,	285,150	190,100	...	256	457	2	...	...	12	30	...	510
Mayfield,	Stoners, Westmoreland county,	33,634	22,423	...	182	45	...	...	...	1	7	...	104
Mullin,	Mt. Pleasant, Westmoreland co.,	29,055	19,210	...	168	84	...	...	...	1	7	...	82
Madison,	Madison, Westmoreland county,	209,634.10	...	209,634.10	293.18	269	...	...	...	1	26	...	...
No. 1, "A" and "B" shaft,	Mt. Pleasant, Westmoreland co.,	626,385	400,070	...	312	728	1	...	...	18	50	...	620
No. 2,	do. do.	256,670	165,960	...	311	266	...	...	10	2	30	...	251
No. 3,	Tarrs, Westmoreland county,	177,145	112,152	...	310	213	1	...	...	5	22	...	180
No. 4,	Stoners, Westmoreland county,	135,965	87,376	...	310	150	1	...	...	3	13	...	150
Osceola,	Osceola, Allegheny county,	99,367.15	...	99,367.15	180	161	...	1	110	2	8	...	...
Ocean,	Wilkinsburg, Allegheny county,	8,942	...	8,942	306	19	...	...	...	...	2	...	...
Oak Hill No. 4,	Turtle Creek, Allegheny county,	347,751	...	347,751	265	414	2	1	...	2	23	...	...
Ocean No. 1,	Scott Haven, Westmoreland co.,	116,852	...	116,852	201	186	...	...	240	...	17	...	29
Port Royal No. 1 shaft,	Fitz Henry, Westmoreland county,	52,634	19,360	38,549	288	105	...	2	458	8	9	...	60
Penn Gas No. 1 shaft,	Irwin, Westmoreland county,	228,111.50	...	223,701	231.75	319	...	...	...	6	19	...	...
Penn Gas No. 2 shaft,	do. do.	232,907.50	...	226,172	233.25	356	2	2	...	6	39	...	...
Penn Gas Coal Run,	do. do.	64,441.50	...	63,266	230	103	...	...	...	...	7	...	...
Penn Gas No. 4,	Sewickley, Westmoreland county,	131,664.50	...	130,811	203	221	...	2	...	2	16	...	...
Penn Manor shaft,	Manor, Westmoreland county,	24,348.37	...	16,390.38	104	73	...	...	...	4	3	...	43
Pleasant Valley shaft,	Harrison City, Westmoreland co.,	3,500	...	900	60	19	...	...	...	...	2	...	...
Plum Creek,	Negley, Allegheny county,	202,648	...	202,648	269.50	251	...	...	...	1	30	1	...
Robbins,	Guffey, Westmoreland county,	108,095.01	...	108,095	195	158	2	3	160	...	13	...	...
Strickler,	Southwest, Westmoreland county,	14,348	...	14,348	100	40	...	...	...	1	2	...	...
Smithton Nos. 1 and 2,	Smithton, Westmoreland county,	47,913	16,092	23,775	236	234	...	1	400	2	25	...	117
Southside,	Irwin, Westmoreland county,	24,971	...	18,316	33.50	259	...	...	...	2	12	...	...
Shaner No. 2,	Guffey, Westmoreland county,	92,686	...	92,686	182.50	148	...	...	...	2	10	...	...
Standard No. 2 shaft,	Mt. Pleasant, Westmoreland co.,	449,400	299,600	...	258	680	...	...	...	20	58	...	905
Standard slope,	do. do.	...	...	...	...	...	...	...	...	...	...	...	...
Sandy Creek,	Sandy Creek, Allegheny county,	216,877	...	216,877	279.75	291	2	...	...	1	17	1	...
Spring Hill Nos. 1 and 2,	Walls, Allegheny county,	92,214	...	92,194	306	124	...	...	5	1	7	...	...
Jamison,	Donohoe, Westmoreland county,	5,000	1,000	4,000	90	30	...	...	...	1	2	...	30
United No. 1 shaft,	United, Westmoreland county,	103,300	68,900	...	184	205	...	1	...	7	15	...	300
United No. 2,	Tarrs, Westmoreland county,	123,000	82,000	...	194	216	...	...	...	5	22	...	301
Union,	Stoners, Westmoreland county,	29,503	19,669	...	283	42	...	...	8	1	8	...	70
Whitney,	Whitney, Westmoreland county,	155,796	100,000	...	242	215	...	...	...	2	15	...	302
West Newton No. 1 shaft,	West Newton, Westmoreland co.,	81,900	...	81,900	...	116	1	...	...	4	4	...	...
West Overton,	West Overton, Westmoreland co.,	65,098	51,298	...	280	87	...	...	...	...	7	...	110
Westmoreland shaft,	Biddle, Westmoreland county,	362,779	...	243,730	295	399	...	12	670	12	22	...	...
Westmoreland car shops,	Irwin, Westmoreland county,	...	...	...	295	39	...	...	...	1	...	...	...
Welnman,	Wilkinsburg, Allegheny county,	10,603	...	used at home	305	19	...	...	...	...	1	...	...
Youghiogheny shaft,	Fitz Henry, Westmoreland county,	40,000	6,748	40,000	200	102	1	2	300	3	7	...	25
Yough slope,	West Newton, Westmoreland co.,	56,416	...	56,416	229	131	...	1	...	2	7	...	...
Total,		8,033,246.50	2,306,788.87	4,221,476.84	14,561.50	12,004	25	41	2,715	212	960	3	7,352

TABLE No. 3—*Showing the number of each class of employes at each colliery in the Second Bituminous Mine District, during the year 1892.*

NAMES OF COLLIERIES.	Location.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand totals—inside and outside.
		Inside foreman or mine-boss.	Miners.	Miners' boys.	All company men.	Drivers and runners.	Doorboys.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Number of cokers and yard-men employed.	All company men.	Superintendent, book-keepers and clerks.	Total outside.	
Alexandria	Goff, Westmoreland county	1	187	12	6	18	7	231	1	4	4	84	6	4	103	334
Amyville	Suterville, Westmoreland county	1	45	5	2	4	1	58		1			4		7	65
Avona	Madison, Westmoreland county	1	25	2		2	1	31		2			7		11	42
Big Chief	Robbins, Westmoreland county	1	140	10	3	4	2	160	1		1		2		6	166
Bessemer and Rising Sun	Mt. Pleasant, Westmoreland county	1	32	4	1	4	2	44		1	2		3		29	73
Buckeye	Stauffer, Westmoreland county	1	53		6	7	3	70		1	2	52	4		60	130
Claridge	Claridge, Westmoreland county	1	80	4	2	8	2	97			2		6		9	106
Carbon	Greensburg, Westmoreland county	1	114	5	15	10		145	2	3	5	10	20	2	42	187
Calumet	Calumet, Westmoreland county	1	90		11	10	3	115	4	3	4	68	10	2	91	206
Dilworth	Scott Haven, Westmoreland county	1	83	5	1	5	1	96		1			3	1	5	101
Denmark	Claridge, Westmoreland county	2	263	6	12	19	8	310		4	5		22		34	344
Donnelly Nos. 1 and 2	Stoners, Westmoreland county	1	39	5	13	6	5	69	1	5	2	30	9		49	118
Duquesne	Wilkinsburg, Allegheny county	1	130	20	6	6	2	165		1	3		13		18	183
Eureka	Jacobs Creek, Westmoreland county	1	110	8	3	8	2	132		1	1		9		12	144
Emma	Hoggs, Westmoreland county	1	10		1	2		14						2	2	33
Enterprise	Haweye, Westmoreland county	1	14		2	4		21		1		10	1		13	34
Export	Export, Westmoreland county	1	150	4	7	9	2	173	1	1	2		7	1	12	185
Greensburg No. 1	Greensburg, Westmoreland county	1	64		3	7	2	77	1	2		2	4	1	12	89
Greensburg No. 2	do. do.	1	23		1	2		27			1		2		3	30
Hempfield	do. do.	1	83	3	3	12	2	104	1	2	3		8		15	119
Heela No. 1 shaft	Southwest, Westmoreland county	1	76	2	15	16	10	120	2	5	6	54	9		79	199
Heela No. 2 shaft	Tranger, Westmoreland county	1	93	2	7	8	7	118	2	4	6	55	15		83	201
Hazlett Nos. 1 and 2	Mt. Pleasant, Westmoreland county	1	34		7	3		45		1	3	52	3	1	60	105
Hampton	Wilkinsburg, Allegheny county	1	80	7	3	7	4	102	3	3	2		3	2	14	116
Lippencott	Hostetter, Westmoreland county	1	48	1	4	5	3	61	1	3	4	27	2		38	99
Larimer Nos. 3 and 4	Larimer, Westmoreland county	2	400	16	51	20	3	492	1	3	1		26		36	528
Larimer Coke Works	do. do.															
Mutual Nos. 1, 2 and 3	Mutual, Westmoreland county	1	48		3	5	2	59	1	1	1	34	4		41	103
Mammoth Nos. 1 and 2	Mammoth, Westmoreland county	2	177	2	27	27	13	248	6	10	10	141	39	3	209	457

Mayfield,	Stoners, Westmoreland county,	1	19	1	2	3	1	27	1	...	1	11	2	...	18	45
Mullin,	Mt. Pleasant, Westmoreland county,	1	32	...	5	3	...	41	...	1	1	38	2	1	43	84
Madison,	Madison, Westmoreland county,	1	225	5	3	20	4	258	1	4	...	...	3	3	11	269
Nos. 1 "A" and "B" shafts,	Mt. Pleasant, Westmoreland county,	2	311	5	34	30	12	394	2	11	15	283	17	6	334	728
No. 2,	do. do.	1	116	2	10	15	4	148	1	4	3	99	8	3	118	266
No. 3,	Tarrs, Westmoreland county,	1	85	1	16	13	3	119	1	2	6	67	15	3	94	213
No. 4,	Stoners, Westmoreland county,	1	57	...	10	8	1	77	1	2	4	55	8	3	73	150
Osceola,	Osceola, Allegheny county,	1	119	15	3	9	...	147	...	1	2	...	7	4	14	161
Ocean,	Wilkinsburg, Allegheny county,	1	16	...	...	1	...	18	...	...	...	...	...	1	1	19
Oak Hill No. 4,	Turtle Creek, Allegheny county,	1	300	44	6	25	5	381	...	2	4	...	24	3	33	414
Ocean No. 1,	Scott Haven, Westmoreland county,	1	145	12	3	10	2	173	1	3	...	...	7	2	13	186
Port Royal No. 1 shaft,	Fitz Henry, Westmoreland county,	1	34	...	11	4	3	53	1	4	5	15	25	2	52	105
Penn Gas No. 1 shaft,	Irwin, Westmoreland county,	1	238	7	19	20	4	289	1	3	4	...	20	2	30	319
Penn Gas No. 2 shaft,	do. do.	1	252	21	12	28	7	321	1	5	4	...	23	2	35	356
Penn Gas Coal Run,	do. do.	1	71	8	5	6	1	92	1	3	...	...	6	1	11	103
Penn Gas No. 4,	Sewickley, Allegheny county,	1	162	12	9	13	4	201	1	3	2	...	13	1	20	221
Penn Manor shaft,	Manor, Westmoreland county,	1	50	...	4	3	2	60	...	1	3	...	8	1	13	73
Pleasant Valley,	Harrison City, Westmoreland county,	1	8	...	1	1	...	11	...	1	...	...	6	1	8	19
Plum Creek,	Negley, Allegheny county,	1	174	16	12	16	2	221	...	4	2	...	22	2	30	251
Robbins,	Guffey, Westmoreland county,	1	125	7	3	9	3	148	1	2	...	...	6	1	10	158
Jamison,	Donohoe, Westmorelaed county,	1	12	...	1	2	...	16	...	1	2	4	6	1	14	30
Strickler,	Southwest, Westmoreland county,	1	31	...	1	2	...	35	1	1	1	...	1	1	5	40
Smithton Nos. 1 and 2,	Smithton, Westmoreland county,	2	150	1	25	13	4	195	...	3	3	15	15	3	39	234
South Side,	Irwin, Westmoreland county,	1	184	6	17	14	4	224	1	2	2	...	29	1	35	259
Shaner No. 2,	Guffey, Westmoreland county,	1	123	4	1	10	3	142	...	1	1	...	2	2	6	148
Standard No. 2 shaft,	Mt. Pleasant, Westmoreland county,	1	290	...	67	30	20	408	4	9	10	200	45	4	272	680
Standard slope,	do. do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sandy Creek,	Sandy Creek, Allegheny county,	1	190	30	15	15	1	252	...	3	4	...	30	2	39	291
Spring Hill Nos. 1 and 2,	Walls, Allegheny county,	1	87	6	12	6	...	112	...	1	2	...	8	1	12	124
United No. 1 shaft,	United, Westmoreland county,	1	94	...	6	10	6	117	2	2	6	72	3	3	88	205
United No. 2,	Tarrs, Westmoreland county,	1	92	2	7	14	4	120	1	4	5	74	10	2	96	216
Union,	Stoners, Westmoreland county,	1	16	...	1	3	...	21	...	...	...	17	3	1	21	42
Whitney,	Whitney, Westmoreland county,	1	125	...	9	8	2	145	2	4	4	48	10	2	70	215
West Newton No. 1 shaft,	West Newton, Westmoreland county,	1	95	4	2	4	2	108	...	1	3	...	3	1	8	116
West Overton,	West Overton, Westmoreland county,	1	35	5	2	5	...	48	1	2	...	29	2	5	39	87
Westmoreland shaft,	Biddle, Westmoreland county,	1	282	13	25	25	8	354	1	4	5	...	33	2	45	399
Westmoreland Car Shops,	Irwin, Westmoreland county,	...	...	...	...	...	...	...	1	15	1	...	21	1	39	39
Weinman,	Wilkinsburg, Allegheny county,	1	16	...	...	1	...	18	...	...	...	...	...	1	1	19
Youghiogheny shaft,	Fitz Henry, Westmoreland county,	1	75	2	2	5	2	87	1	1	3	7	1	2	15	102
Yough slope,	West Newton, Westmoreland county,	1	100	7	4	7	2	121	1	1	2	...	4	2	10	131
Total,		71	7,227	359	582	649	202	9,090	56	178	180	1,682	693	130	2,919	12,009

TABLE NO. 4.—*List of fatal accidents which occurred in and about the mines of the Second Bituminous Mine District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 6.	David Stevenson, ...	Miner boy, . . .	13	. .	. .	Alexandria mine, ...	Westmoreland county, .	Killed by a fall of horseback; at the time of the accident he was working with his uncle. The uncle stated that the place seemed to be all right a short time before it fell.
Feb. 15.	Joseph Jones, ...	Miner boy, . . .	13	. .	. .	Oak Hill No. 4 mine, . . .	Allegheny county, . . .	Fatally injured by a fall of horseback while he was standing at the end of a wagon on the heading loading it with coal; his father was with him at the time; the father testified before the coroner's jury that he had examined the place a short time before and he thought it was all right.
Mar. 16.	Peter Burrows, ...	Miner, ...	30	1	1	Larimer No. 4 mine. . . .	Westmoreland county, .	Fatally injured by a fall of slate while he was knocking coal; he had two posts set under the slate but they were too far apart, and the slate fell between them. If he had exercised proper care the accident could have been averted.
18,	Lester Newcomer, ...	Laborer, ...	40	1	3	Claridge mine, ...	do. do. .	Instantly killed by falling from a car as he was dropping it to the tipple. At the time of the accident he was tightening the brake on the car; the brake chain broke and he fell and the car wheel passed over his head.
25,	Edward Price, ...	Track layer, . .	35	1	4	Hecla No. 2 shaft, ...	do. do. .	Fatally injured by being struck on the head by a piece of ice or rock as he was digging a drain at the bottom of the air-shaft. There was another man with him at the time; this man was watching while Price was digging the drain for fear that something would fall.
May 2.	James Chum, ...	Laborer, ...	41	1	. .	Mammoth mine, ...	do. do. .	Instantly killed by the cage; he was putting wagons off the cage, and in trying to cross the cage to the full side he was caught under the chin and carried between the cage and the side of the shaft to the top; when he reached there he was choked to death. He had been warned not to cross the cage, as there was a traveling way on the side of the shaft.

Apr. 12,	Michael Stassrak, ...	Miner, ...	28	1	2	West Newton shaft, . .	do.	do. .	Instantly killed by a fall of slate; he did not have the slate posted, and neglecting to do so was the cause of his death. He was a green Hungarian, and was not acquainted with the dangers pertaining to mining.
May 9,	Victor Cittia, ...	Miner, ...	31	1	. .	Eureka mine, ...	do.	do. .	Fatally injured by a fall of coal. He in company with another man were lying down bearing in under the coal without providing sprags to sprag the coal up, and nearly a ton of coal fell on him.
13,	Arthur Morris, ...	Rope rider, . . .	24	1	1	South West No. 4 mine, .	do.	do. .	Instantly killed by falling in front of the full trip as he was riding out on the front wagon. There was no one with him at the time, so we were unable to ascertain how it happened.
21,	George Workman, ...	Miner, ...	18	. .	. .	Mammoth mine, ...	do.	do. .	Instantly killed by a fall of slate; he with two others were drawing entry stumps. The place commenced to work, and they told him to come back, and as he was reaching for his safety-lamp he was caught under the slate and crushed to death.
June 22,	James S. Limbaugh, . . .	Trapper boy, . .	13	. .	. .	Eureka mine, ...	do.	do. .	Instantly killed as he was trying to open the door for the trip to pass through. The boy it seems had forgotten to open the door, and told the driver so; the driver was coming down a steep grade and told the boy to get out of the way, but in place of doing so he jumped to open the door in front of the trip and was caught.
25,	Robert Adamson, ...	Miner boy, . . .	12	. .	. .	Alexandria mine, ...	do.	do .	Fatally injured by a fall of coal; he was working with his father, and the father stated that he had told the boy to go back from the face, but he did not get very far before a ton of coal fell on him. There were no sprags under the coal.
July 2,	Granville Bean, ...	Miner, ...	21	. .	. .	South West No. 3 mine, .	do.	do, .	Instantly killed by a fall of roof coal as he was drawing posts in a rib; there were two other men with him at the time, one of whom told him not to go back for the post, but he did not heed him, but rushed with his axe and knocked the post out. The place fell in and completely covered him in the gob, and it took an hour's work to get him out; he was killed by his own willful carelessness.
7,	Robert McAlister, ...	Miner, ...	20	. .	. .	Oak Hill No. 4 mine, . . .	Allegheny county, . . .		Fatally injured by a fall of slate as he was knocking coal; he had two posts set under the slate, but they were too far apart for safety, and the slate was very tender and full of water slips, and it fell between the posts. He should have taken the slate down, and the neglect caused his death.
10,	Carlist Picco, ...	Miner, ...	30	. .	. .	Youghiogheny mine, . . .	Westmoreland county, . .		Fatally injured by a fall of slate; at the time of the accident he was about setting a post under the slate, but had neglected it too long, and the slate had got loose before he undertook to post it, and he met his death through neglect on his own part.

TABLE 4.—*Continued.*

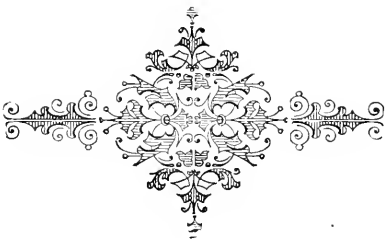
Date of accident	NAME OF PERSON.	Occupation.	Age.	Widow	No. of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Aug. 10.	Jesse Plant.	Driver.	25	. .	. .	Lippencott mine, ...	Westmoreland county, .	Fatally injured by being run over by a full wagon while he was bringing two wagons out of No. 4 flat. The mine-boss was with him at the time, and he stated that Plant slipped and fell under the wagon; his leg was crushed so badly that amputation was necessary; he died in twenty-two hours after.
31.	John Inbeck.	Miner.	32	1	1	Larimer No. 4 mine, . . .	do. do.	Fatally injured by a fall of slate; he was sitting down bearing in at the time of the accident and had no post set under the slate. There was another man working with him at the time, they were both ignorant Hungarians and knew nothing of the nature of the slate.
Sept. 7.	Nicholas Darr.	Miner.	35	. .	. .	Robbins mine.	do. do.	Instantly killed by a fall of slate; it appeared that he had been knocking coal when the accident occurred and had not set a post under the slate. The driver went into his room for the wagon and found him dead under about a ton of slate.
16.	Frank Labor.	Miner.	58	1	1	Penn Gas No. 2 shaft. . .	do. do.	Fatally injured by being caught between the wagon and the rib as he was going out from his work. It seems that he had lost his light and had got on the wrong side of the road, where there was barely room enough to stand. The driver testified that he did not see him until he was struck by the first wagon.
27.	Olph Leaf.	Miner.	40	1	3	Export mine.	do. do.	Instantly killed by a fall of slate; he and his brother-in-law were driving entry, and they did not have the slate properly posted, and there were about two tons of slate fell on him; the slate had to be broken up before his body could be taken out.

Oct. 6.	John G. Shaffer.	Engineer. . . .	58	1	. .	Sandy Creek mine. . . .	Allegheny county. . . .	Those men were smothered in the tunnel as they were hauling a trip of coal out with the locomotive. This was their last trip for the evening, and Mr. Fisher, the superintendent, stated that it was their custom to leave the fire go down low about the last trip so as to make it easy for them to take it out; they had only got into the tunnel about one-eighth of a mile when they stuck on a small grade; here it was supposed that they commenced to throw fresh coal on the fire, and the smoke and carbonic oxide from the fire smothered them. Why they did not cut loose from the trip and go out no one was able to answer; they had been on the locomotive for years and should have known better than to have remained in the smoke.
6.	Richard B. Johnston. . .	Fireman.	42	1	4			
27.	Thomas Landers.	Miner.	46	1	4	Penn Gas No. 2 shaft. . .	Westmoreland county. .	Fatally injured by a fall of roof coal as he was taking post out in a rib; his son, twenty-one years old, was working with him at the time of the accident. They had been setting a break row and did not leave sufficient room between the posts to get out after knocking the post out in the gob.
Nov. 26.	William Whaling.	Track-layer. . .	36	1	2	Moosewood No. 1 "B" shaft.	do. do. .	Fatally injured by a fall of slate; he and another man were blasting down slate; after they had put a shot off they sounded the slate and thought it was safe, and they commenced to work, one pulling the slate down and the other working under it, when it fell crushing him so badly that he died in seven hours afterwards.
Dec. 20.	Peter Enercco.	Miner.	35	1	4	Robbins mine.	do. do. .	Instantly killed by a fall of slate; at the time of the accident he was drilling a hole to fire a blast, there being a considerable quantity of slate up and no post set under it. He was killed by his own neglect.

TABLE No. 5—*List of non-fatal accidents which occurred in and about the mines of the Second Bituminous Mine District for the year ending December 31, 1892.*

Date of accident	NAME OF PERSON.	Occupation.	Age.	Married.	Name of Colliery.	Location County.	Nature and Cause of Accident.
Jan. 2.	Fredrick Georing.	Miner.	15	M.	Osceola mine.	Allegheny.	Leg broken by a fall of slate.
5.	William Gaffney.	Trapper.	13	S.	United No. 1 mine.	Westmoreland.	Two fingers taken off by a wagon wheel.
13.	Harry Fullmer.	Driver.	25	M.	Oak Hill No. 4 mine.	Allegheny.	Arm crushed between wagon and rib.
23.	Hein Boice.	Miner.	35	S.	Westmoreland shaft.	Westmoreland.	Foot crushed by a fall of slate.
28.	Michael Vliation.	do.	21	S.	Hampton mine.	Allegheny.	Foot crushed between wagons as he was riding out between them.
29.	Stephen Orris.	do.	43	M.	Mutual No. 2 mine.	Westmoreland.	Foot crushed by a loaded wagon.
Feb. 20.	James Cannon.	Driver.	32	M.	Penn Gas No. 4 mine.	do.	Skull fractured and an eye knocked out by being kicked by a mule.
Mar. 1.	John John.	Miner.	30	M.	Larimer No. 4 mine.	do.	Foot crushed by a fall of slate.
3.	Raimonda Giacomo.	do.	30	M.	do. do.	do.	Leg broken by a fall of slate.
10.	Peter Washinskey.	do.	35	M.	Port Royal No. 1 shaft.	do.	Collar bone broken by a fall of coal.
14.	Porcronow Atrach.	do.	38	S.	Westmoreland shaft.	do.	Severely injured by being caught between wagons as he was riding out.
14.	Joseph Hill.	do.	33	S.	do.	do.	Face and hands burned by powder.
14.	Joseph Smith.	do.	16	S.	do.	do.	Leg fractured by a fall of coal.
16.	Joseph Crock.	do.	40	M.	do.	do.	Arm fractured and shoulder dislocated by being struck by a slate post.
17.	Clark Gellin.	Cager.	40	M.	Port Royal No. 1 shaft.	do.	Two ribs broken by being struck by a piece of coal which fell down the shaft.
29.	John Kermoskie.	Miner.	55	M.	Westmoreland shaft.	do.	Burned by a cartridge exploding in his hands.
May 6.	Thomas Taylor.	Driver.	23	S.	Carbon mine.	do.	Arm broken by being caught between the wagon and the rib.
17.	Magnes Yepsum.	Miner.	22	S.	Penn Gas No. 2 shaft.	do.	Both his legs broken and a rib fractured by a fall of slate.
25.	Patrick Graham.	do.	20	S.	Robbins mine.	do.	Three ribs broken by a fall of slate.
June 1.	Gustave Pouseil.	do.	36	M.	Penn Gas No. 4 mine.	do.	Two ribs broken by a fall of slate.
25.	Solomon Charlesworth.	do.	62	M.	Robbins mines.	do.	Back severely injured by a fall of slate.
25.	Robert Currie.	Roadman.	52	M.	Hecla No. 2 shaft.	do.	The sight of one of his eyes was destroyed by being struck by a piece of rock.
July 20.	John Nelson.	Miner.			Donnelly No. 1 mine.	do.	Severely injured by a fall of roof coal.
25.	John Monar.	do.	41	M.	Penn Gas No. 2 shaft.	do.	Leg broken in two places by a fall of slate.
Aug. 1.	Steve Mikula.	do.	31	M.	Smithton No. 1 mine.	do.	Leg crushed by a fall of coal.
13.	Peter Shifts.	do.	27	S.	Denmark mine.	do.	Hip dislocated by a fall of coal.
23.	Marshall Story.	Driver.	18	S.	Yough slope.	do.	Leg broken by a fall of coal as he was sounding it with a pick.
26.	Mathew Edmonson.	Miner.	40	M.	Youghiogheny mine.	do.	Four fingers cut off by a fall of slate.
27.	Thomas McCarty.	do.	33	M.	Robbins mine.	do.	Leg broken by a fall of slate.

Sept. 2.	August Halbourg,	do.	28	M.	Carbon mine,	do.	...	Back injured by a fall of slate.
7.	John Mosshoff,	do.	19	S.	Westmoreland shaft,	do.	...	Leg fractured by a fall of slate
23.	William Campbell	Trapper-boy,	14	S.	Duquesne mine,	Allegheny,	...	Severely injured on the head by being caught between two wagons.
Oct. 10.	George Green,	Miner,	44	M.	Claridge mine,	Westmoreland,	...	Leg broken and otherwise injured by a fall of coal.
15.	John McGronsly,	do.	39	M.	Calumet mine,	do	...	Hand severely injured.
27.	James Yerer,	do.	23	S.	Denmark mine,	do.	...	Leg broken by a fall of coal.
Nov. 7.	John Madden,	do.	38	S.	Westmoreland shaft,	do.	...	Leg fractured by a fall of coal from a clay vein.
21.	John Cuska,	do.	35	M.	Youghiogheny shaft,	do.	...	Collar-bone broken by a fall of coal.
Dec. 7.	John Hunt,	do.	18	S.	Westmoreland shaft,	do.	...	He was severely injured on the back by a fall of coal.
7.	Edward Crosline,	do.	19	S.	do.	do.	...	Foot crushed between wagon and rib by a fall of coal.
10.	William Hunt,	do.	50	M.	do.	do.	...	Burned by fire-damp and coal dust in a rib by going back too soon after a fall.
15.	Antonia Sevoy,	do.	28	M.	do.	do.	...	Burned by an overcharge of powder as he was blasting.



THIRD BITUMINOUS DISTRICT.

(ARMSTRONG, BUTLER, CLARION, INDIANA, JEFFERSON, LAWRENCE, MERCER, WESTMORELAND AND BEAVER COUNTIES.)

Honorable THOMAS J. STEWART,

Secretary of Internal Affairs:

SIR: In compliance with the requirements of the tenth section of the bituminous mining act approved June 30, 1885, I herewith present my annual report of the inspection of the mines in this district for the year ending December 31, 1892.

In 1891 there were eight lives lost from injuries in the mines of this district while during this year (1892), there were only two deaths resulting from injuries. In 1891 there were thirty-four non-fatal accidents, while there were only twenty-six of such during the year just closed. This is certainly one of the best records attained in any important mining district in this or any other state in this country, or in fact in any other country, when we take into consideration the quantity of coal produced and the number of employes at the mines of the district. There were 3,207,814.25 tons of coal produced during 1892, averaging 1,603,907 tons to the life lost, and the number of employes per fatal accident was 3,148.5.

The number and causes of accidents and the number of widows and orphans left therefrom for the year 1892 are as follows:

CAUSES OF ACCIDENTS FOR 1892.	Fatal.	Non-fatal.	Widows.	Orphans.
By falls of roofs,		6		
By falls of coal,	2	8	1	3
By mine wagons,		8		
By miscellaneous causes,		4		
Totals,	2	26	1	3

Below is a summary of the statistics for 1892 as shown by the official returns to this office:

Number of new mines opened during 1892,	3
Number of mines exhausted,	1
Number of mines now in the district,	73
Number of miners (men) employed,	4,491
Number of miners (boys under 16 years of age) employed,	231
Number of "day men" employed inside of mines including mine-bosses,	862
Number of "day men" employed outside of mines including mine superintendents and clerks,	713
Total number of employes,	6,297
Number of tons (2,000 pounds each) of coal produced in 1891,	3,361,550
Number of tons (2,000 pounds each) of coal produced in 1892,	3,207,814
Decrease in tons in 1892,	153,736
Number of tons (2,000 pounds each) of coke manufactured in 1892,	66,458
Number of tons of coal produced per fatal accident,	1,603,907
Number of tons of coal produced per non-fatal accident,	123,377+
Total number of days the mines were in operation for the year 1892,	14,300
The average number of days for sixty-six mines in the district, each of which were in operation over 100 days during the year,	212+

There were fifteen mines which did not work over one-half time, forty-one did not exceed three-fourth time, while only seven mines were in operation 300 days or over, during the year.

Many of the mines have been examined three and four times each, during the year, while of others (which had not been in operation over half time), two examinations have been made. As will appear from the description of the different mines which is given in another part of this report, the sanitary and safe condition of the mines of the district as a whole, is very satisfactory. All of which is respectfully submitted.

THOMAS K. ADAMS,
Inspector

MERCER, MERCER COUNTY, PA., *February, 1893.*

RECAPITULATION OF THE IMPROVEMENTS AT THE MINES OF THE DISTRICT DURING THE YEAR.

At Big Soldier Run mine a new tipple has been built completely constructed of iron. It is 56 feet wide and 120 feet long, having six pockets or dumps at which coal can be loaded into the railroad cars. A new system of endless rope haulage has also been introduced into this mine which at present hauls the coal for a distance of 3,400 feet. Thirty cars are hauled at a single "trip." The "grip" attachment, which is constructed on a flat car, is used for hitching the train of cars to the rope. There are two engines 14 inches diameter with 2 foot stroke each. Four tubular boilers 5½ feet in diameter by 16 feet long are suppling the steam for these engines, and for a powerful air compressor which has also been erected as part of this substantial plant. They have also built a brick smoke stack 103 feet in height.

The tail rope system of mine haulage has been introduced at the Riverview mine, Armstrong county. At present coal is hauled a distence of 1,800 feet, 20 cars at a single trip. The pair of hauling engines are 14″×18″, geared 4 to 7, and two flue boilers 36″ in diameter by 24 feet long, which generate the steam. Also a new ventilating fan 16 feet in diameter with horizontal engine 12″×24″ attached. Width of fan 6′ 2″, depth of blades 4′ 4″, making the inlet to fan, on one side only, 7′ 4″.

A 10-foot diameter fan was erected at Chestnut Ridge mine, Mercer county, during the year.

A small furnace was built at Hallville mine, Mercer county.

At Avondale mine, Clarion county, the inclined plane has been rebuilt, a completely new tipple erected, and a new ventilating furnace built in the mine, and an air shaft 40 feet deep has been sunk.

The tail-rope system for hauling the coal has been introduced at the Brier Ridge mine, Clarion county. The machinery is supposed to haul 12 cars at a trip, which are hauled a distance of 1,800 feet. The system is weak in power, as the engines are entirely too small. A new drift opening has also been opened at this mine.

A friction drum has been erected inside of Graceton mine No. 2, Indiana county, during the year. The coal (eight cars on a trip) is lowered by this means from the workings (coal seam rises 8 feet in 100 feet) to near the tipple, the distance being about 800 feet.

At Beaver mine, Lawrence county, a mine locomotive has been put into the mine for haulage purposes which hauls the coal a distance of 4,000 feet.

At Excelsior and Rock Point mines, Lawrence county, a new ventilating furnace has been built in each during the year. A furnace was built and an air shaft sunk at Beale mine, Armstrong county.

DESCRIPTION OF MINES.

Mines in Armstrong and Clarion Counties, Situated on the Allegheny Valley Railroad.

There are ten mines situated along this railroad, only seven of which have been in active operation during the year. Hardscrabble, Gosford, Rimerton and Kittanning mines have done little or nothing during the year.

Pine Creek mine is a new drift opening from which the first shipments of coal took place last March. The mine was in a reasonably good condition both as regards drainage and ventilation when last examined.

Church Hill and Mineral Ridge mines were both well ventilated and the drainage excellent and they were in a very safe condition otherwise.

Catfish Run, owing to its being dependent on natural means, the ventilation was not as good as it should have been, but improvements were ordered to be made at once. The drainage at one point in the mines was somewhat defective.

Monarch mine was not in operation during the early months of the year and when I called recently for the purpose of examining it I failed to find it in operation. Since writing the above I made another visit, when it was in operation, and upon examination found it in good condition.

At Riverview mine there have been extensive improvements made during the year. A new tail-rope haulage plant has been erected, and to produce ventilation for the mine, a 16-foot (in diameter) fan has been erected. It was producing 39,800 cubic feet of air per minute which was well distributed to face of workings. I found the mine in very good condition in other respects.

Glen mine was well ventilated and drained at date of last visit.

Mines Located on the Low Grade Division and Sligo Branch of the Allegheny Valley Railroad.

There are ten mines situated along these branch railroads.

Cherry Run mine when last examined was well ventilated and drainage was excellent.

At Brier Ridge mine, I measured 15,600 cubic feet of air in circulation which was fairly distributed to the face of the different parts of the mine. The drainage in one part of the mine was not good but very few of the miners were working in that part.

Acme mine is in splendid condition. I measured 19,000 cubic feet of air in circulation, which was fairly distributed to face of works. The drainage was excellent and the mine in very safe condition.

The general condition of Diamond, Keystone and Avondale mines, both as to ventilation and drainage, was very good. I measured in Diamond mine 6,840 cubic feet of air in circulation, which was being

well distributed to face of the workings. At the Keystone, there was 9,880 cubic feet of air being produced, and at Avondale mine there was 9,600 cubic feet of air in circulation at face of headings and 14,625 cubic feet at outlet and inlets. A new furnace 6 ft. wide, 4 ft. from grate bars to comb of arch, and 9 ft. long, was built at Avondale mine; also a ventilating air shaft 40 ft. deep, 6 feet in diameter, with a stack attached 40 feet high, was sunk and built. A new tipple and inclined plane were also built at this mine during the year.

At Oak Ridge mines there are being operated two different seams of coal ventilated by the same fan, which is 6 ft. in diameter. These mines are connected by a shaft sunk from one seam to the other, and the workings of the upper mine are being driven directly over the workings of the lower. 19,200 cubic feet of air was being produced for both places and well distributed to the face of the entries.

At Fairmount mine No. 2 two coal seams are being mined in a similar manner to that at Oak Ridge mine. I found the two fans that are being used to produce the ventilation were moving 45,300 cubic feet of air per minute which was being well distributed to the face of the workings. The workings of both seams are well drained and both mines are generally in a very healthful condition. The drainage of the workings of the upper seam is accomplished by drilling bore holes from the "dip" workings of the upper bed, down through the workings of the lower seam.

At Fairmount mine No. 4 there was in circulation 25,519 cubic feet of air at inlet, but there were only 2,000 cubic feet of it at face of works. The great decrease in the air supply at face of works was caused by the main air course becoming almost closed owing to a heavy fall of roof having taken place a short time prior to my visit, but the officials had workmen cutting a new air passage around the fall to remedy the defect.

At Star mine No. 3, owing to the faulted condition of the coal seam it is very hard to maintain any regular system of working it; however, I found the mine in very reasonable condition as far as having a very healthful supply of air was concerned. I measured 25,200 cubic feet of air in circulation which was being well distributed to face of the working places.

The Mines Situated at Reynoldsville, Jefferson County.

There are only four mines in operation in this region, viz: "Big Soldier Run," "New Hamilton," "Sprague" and "Standard." The quantity of air forced into the workings of Big Soldier Run mine, at which there are employed 579 workmen, was 50,000 cubic feet, which was being well distributed to the face of the workings. The drainage of the mine was very good.

At Sprague mine I measured at the "old" and "new" openings a total volume of air of 66,000 cubic feet per minute, which was

being well distributed to the different parts of the mine. The drainage was excellent.

The New Hamilton was in splendid condition when last examined. At last visit I measured 17,775 cubic feet of air in circulation, which was being well conveyed throughout the interior workings of the mine, and the drainage was good.

At the Standard mine I measured 12,760 cubic feet of air which was being well conducted to the heads of the different entries. The drainage of this mine was defective in some parts.

The ventilating fans used in this region for ventilating purposes are all 6 feet in diameter, and of the "open running" type, known as the Clark fan.

The Mines in Mercer and Butler Counties, situated on the Pittsburgh-Shenango and Lake Erie.

There are eleven mines in operation along this railroad, viz: "Enterprise," "Keister," "Gomersal," "Allegheny," "Turner," "Spears," "Barnes" (not in operation), "Black Diamond, Nos. 1 and 2," "Sharon" (exhausted at the close of the year), Chestnut Ridge and Pardoe.

At Enterprise mine I measured near the face of the works 5,600 cubic feet of air. This mine was in excellent condition, both in regard to drainage and ventilation.

I measured 6,400 cubic feet of air in Keister mine, which was fairly distributed to face of works. The drainage was reasonably good for such a mine.

In Gomersal mine I measured at the outlet 11,200 cubic feet of air, but through leakage there was only about 3,000 feet of it at face of workings. Drainage was reasonably good.

The Allegheny and Turner mines were in very fair condition, both in regard to ventilation and drainage, at last visit. I measured 5,775 cubic feet of air at the former, and 9,900 cubic feet at the latter, which was an ample supply for such small mines.

Black Diamond No. 2 has not been in operation for the last few months, but Black Diamond No. 1 had about 24,000 cubic feet of air in circulation at last visit to that mine, which was well distributed to face works. The drainage of the mine was also good.

At Spear's mine I measured 9,750 cubic feet of air in circulation, which was fairly conducted to the working places of the mine.

At Chestnut Ridge mine there has been a 10 foot diameter fan erected, which is producing a very good supply of air. I measured at last visit 10,100 cubic feet of air in circulation in the North side of the mine and a fair current on the South side. The mine is now fairly well ventilated.

I measured a good current of air (13,500 cubic feet) at the Pardoe mine; 7040 cubic feet was measured near face of works, and I found the mine as a whole in very fair condition.

Other Mines Located in Mercer County.

The Shenango and Ormsby Slope mines have not been in operation for the past six or seven months, having been temporarily shut down, but may resume operations soon.

Stoneboro mines are idle at present owing to the miners being on strike, resisting a five cent reduction on the price of digging. I measured in No. 2 mine 17,200 cubic feet of air, which was being fairly conducted to face of works. The drainage was a little better than usual. At No. 3 mine the air current, 12,600 cubic feet, was well distributed to face of works, but the drainage was very defective.

Hallville mine at last visit was in excellent condition, both in regard to ventilation and drainage. I measured 12,700 cubic feet of air per minute at outlet and 7,400 cubic feet near face of workings. A small furnace was built at this mine during the year.

At the Carver mine there was in motion 21,000 cubic feet of air, and had one-half of this amount been conducted to the extreme workings, the mine would have been considered well ventilated. The leakage was excessive at some points; however, there was a small current at head of all the entries averaging about 2,800 cubic feet This mine is idle at present, owing to the miners resisting a five cent reduction on the price of digging.

Lackawannock mine has not been in operation regularly during the year, but it was in splendid condition when I last examined the workings.

Mines Situated in Lawrence and Beaver Counties.

The Penn mine was not in operation at date of last visit, but found it at a prior examination to be very well ventilated.

There was in circulation at Beaver Falls mine 4,000 cubic feet of air, and as this is a small operation, the ventilation was ample.

There was being moved throughout the workings of the Cannelton mine 4,480 cubic feet of air. This is also a small operation.

At Rock Point mine a new furnace has been built and an air shaft sunk during the year. I measured about 10,800 cubic feet of air, which was being well distributed throughout the mine. The hauling roads were being well taken care of, and drainage was very good.

At the Excelsior mine a new ventilating furnace has been built during the year. The size of the furnace is 5′ 6″ wide, 4 feet above grate bars, and 12 feet long. The quantity of air measured was 7,600 cubic feet. The mine was in very fair condition.

There has been a mine locomotive put into the Beaver mine for haulage purposes. It hauls the coal from an inside station to tipple, a distance of from three-fourths to one mile. I measured near the inside workings, where the fan inlet is located, 21,000 cubic feet of air, which was fairly well distributed to face the of entire entries. The velocity of

air on the locomotive tunnel was 300 feet per minute. The hauling roads, particularly in the cross entries, were in poor condition.

At the Clinton mine I measured about 6,100 cubic feet of air, which was very well distributed to face of works. The mine was in very fair condition in other respects.

The Sterling mine was only in fair condition. There was 16,000 cubic feet of air in circulation, but there was only about2, 700 cubic feet of it at face of main workings.

The Baker mine was in good condition generally. There was 11,250 cubic feet of air in circulation, and drainage fairly good.

Mines in Indiana and Westmoreland Counties Situated on the West Penn Railroad.

Graceton mines Nos. 1 and 2 are both in excellent condition. At No. 1 there was in circulation over 10,000 cubic feet of air; which was being properly conducted throughout the workings. The drainage was excellent. At No. 2 I measured 20,700 cubic feet of air in circulation. This mine is well ventilated and the drainage was excellent. The seam of coal at this mine pitches at about 8 feet to the 100, and in view of the grade being so heavy, a friction drum with rope attachments has been erected in the interior of the mine in line with the mouth of the main drift, opening at a distance of 800 feet from mouth of drift. Eight loaded mine wagons at a single trip are lowered, and 8 empty wagons brought up at the same time on this plane by this arrangement. There are three rails, and four near the half distance point on the plane. In front of the friction drum there is a pulley of the same diameter as the drum, around which the rope is wound once, as it is also wound once around the drum. Both are set in position horizontally.

At last visit Mitchell mine was idle, but at my previous visit I measured 14,500 cubic feet of air in circulation, which is being produced naturally. The difference in elevation of inlet and outlet to this mine is 60 feet. The mine was in very good condition.

The "Maher," "Turner" and "Smith" mines are small operations and dependent on the natural forces to produce ventilation. At my last visit to those mines they were all well ventilated and the drainage in all of them was good. I measured from 10,000 to 18,000 cubic feet of air circulatingin each of those mines.

I found the Fairbank mine as usual in excellent condition. Quantity of air measured was 15,480 cubic feet. Mine is well drained.

I measured at furnace in "Avonmore" mine 22,500 cubic feet and near the face of the works about 7,200 cubic feet. The general condition of the mine was very good.

The Foster mine was in splendid condition when last examined, having about 14,280 cubic feet of air in circulation for about 25 miners. Drainage was very good.

"Pine Run" mine was idle at my last visit and "Bagdad" No. 3 had not enough men employed to bring it under the provisions of the mining law.

"Apollo," "Beale" and "Leechburg No. 4" mines were all in excellent condition, both in regards to ventilation, drainage and general safety. These are small operations. At Beale there was a new furnace built this year which was producing 18,000 cubic feet of air. There was in circulation at Leechburg No. 4, 10,730 cubic feet of air.

Leechburg No. 3 was found in very good condition. The ventilation was in good volume (10,125 cubic feet), which was being well distributed to the face of the works. The drainage was excellent.

At Blackstone mine, although the volume of air was ample, it was nearly all lost through leakage before it reached the face of the works. The quantity of air in circulation was 8,000 cubic feet. The drainage was good.

At Bagdad No. 2 mine I measured 14,600 cubic feet of air in circulation, which was an ample volume for such a mine. The mine in other respects was in good condition.

CERTIFICATES OF "COMPETENCY AND OF SERVICE" GRANTED TO MINE-BOSSES.

The examining board of the Third Bituminous district has granted certificates of competency and of service to the following named persons, by which they are entitled to act as mining-bosses. These have been issued in compliance with the provisions of the fifth and fifteenth sections of the Bituminous mining act of June 30, 1885.

Names of persons having "certificates of service," and also the names of the companies with whom they were employed when issued.

Names of Persons.	Names of Companies.
Wm. S. Lewis,*	Bagdad Coal and Coke Company.
John B. Johnston,	Saltsburg Coal Company.
James Curren,	Kittanning Iron Company.
J. L. Rankin,	Pittsburg Coal and Mining Company.
James Beveridge,	L. M. Ormsby & Co., Limited.
John Southren,	State Line Coal Company.
Rolly Henry,	Fairmount Coal and Iron Company.
William Gents,	Stephenson & Mitchell.
John Freil,	Northwestern Coal and Iron Company.
Andrew Fleming,	Brady's Bend Mining Company.
Henry Williams,*	Oak Ridge Mining Company.
Conrad Brown,	J. F. Mansfield.
Henry Filer,	Filer, Sutliff & Co.
Archy McIntyre,	Pierce Coal Company, Limited.
James Watson,	W. C. Mobley & Co.

* Persons who have passed the examination and been granted "certificates of competency."

Names of Persons.	Names of Companies.
Phillip Nicholas,*	Keystone Coal and Coke Company.
John Milsom,	Hazzard, Wood & Co.
Moses W. Jenkins,*	Perkins Iron Company.
Herbert Edwards,*	Mercer Coal and Iron Company.
Benjamin F. Esgar,*	Mercer Coal and Iron Company.
Thomas Bailey,	Bethel Coal Company.
John McNamarrow,	S. P. McCalmont.
James Spears,	Union Coal and Coke Company.
Charles Whitlatch,	Carver Coal Company.
George Jenkins,	Mercer Mining and Manufacturing Company.
David Jenkins,	Mercer Mining and Manufacturing Company.
John Michaels,*	Mercer Mining and Manufacturing Company.
W. F. Clayton,	W. F. Clayton.
James Clayton,	James Clayton
Richard Mumford,	Richard Mumford.
John Kirkham,	John Kirkham.
Enoch Filer, Jr.,	Filer, Westerman & Co.
John Sheddon,	John Sheddon & Co.
Christopher Haswell,	Scott & Co.
John L. Murray,	Riverview Coal and Mining Company.
Samuel Graham,	Beaver Coal and Coke Co., or Lee & Patterson.
James A Spears,	Pine Grove Coal Company.
W. W. Bosworth,*	Gosford Coal and Mining Company.
A. L. Anderson,	Leechburg Coal and Coke Company.
Jacob Rosenhoffer,	Mineral Ridge Coal Company.
Augustus Winkelvoohs,	Jackson Coal Company.
John N. Muntz,	John N. Muntz.
Edwin Cook,	Penn Coal Company.
John Bell,	John Bell & Co.
Morgan B. Hofius,	Sharon Coal Company.
Samuel A. Dickey,	J. R. Smith.

* Persons who have passed the examination and been granted "certificates of competency."

NAMES OF PERSONS TO WHOM CERTIFICATES OF COMPETENCY HAVE BEEN GRANTED.

DATE.	NAMES OF PERSONS.	DATE.	NAMES OF PERSONS.
Oct. 30, 1885,	Moses W. Jenkins,	Sept. 13, 1887,	Herbert Edwards.
Do. do.	Robert B. Snedden,	do. do.	M. L. Metheng.
Do. do.	Wm. Ferguson,	do. do.	Edward Dougherty.
Do. do.	Eugene Bailey,	do. do.	William Neilson.
Dec. 22, 1885,	Gilford Wooten,	do. do.	George Young.
Do. do.	Nathan Ball,	Jan. 19, 1888,	George Crawford.
Do. do:	Andrew McWilliams,	do. do.	Peter Robertson.
Do. do.	Phillip Nicholas,	do. do.	William Harbertson.
Do. do.	William Gilson,	June 19, 1889,	J. B. Williams.
Do. do.	Wm. W. Bosworth,	do. do.	Samuel Edge,
Do. do.	John H. Lane,	do. do.	John Marshall.
Do. do.	Robert Crawford,	do. do.	Richard Lewis.
May 3, 1886,	Moses W. Jenkins,	do. do.	Richard Snedden.
Do. do.	A. A. Lessig,	do. do.	Roger Hampson.
Do. do.	Edward Buckham,	Jan. 17, 1890,	Samuel W. Phillips.
Do. do.	John I. Humphreys,	do. do.	Wm. Teare,
Do. do.	J. C. Kyte,	do. do.	Thomas Windle.
Jan. 5, 1887,	Moses W. Jenkins,	Dec. 5, 1890,	Andrew Snedden.
Do. do.	George Gould,	do. do.	Robert S. Snedden.
Do. do.	James Mitchell,	do. do.	Robert D. Crawford.
Do. do.	Joseph Brown,	do. do.	John Crawford.
Do. do.	Robert Snedden,	do. do.	Frank Spencer.
Do. do.	Benjamin F. Esgar,	do. do.	William Jenkins.
Do. do.	Jabez Hanford,	do. do.	Thomas Simpson.
Do. do.	Wm. Maxwell, Sr.,	do. do.	Robert Bycroft.
Do. do.	Robert Anderson,	do. do.	Andrew J. Watson.
Do. do.	J. C. Allen,	do. do.	David G. Lowther.
Do. do.	Reese Williams,	do. do.	James Welsh.
Do. do.	Thomas W. Foster,	do. do.	Daniel C. Lowers.
Do. do.	Wm. W. Price,	do. do.	George Findley.
Do. do.	Wm. A. Beveridge,	do. do.	John Miller.
Do. do.	Henry Williams,	Jan. 29, 1892,	John C. Hirst.
Do. do.	Ed. Lace,	do. do.	Robert Roys.
Do. do.	Wm. S. Lewis,	do. do.	Thomas Hodge.
Do. do.	John Michaels,		

TABLE NO. 1.—*Showing location of collieries in the Third Bituminous Mine District.*

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Apollo.	Maher Coal and Coke Company.	Westmoreland.	T. G. Cornell.	Freeport, Armstrong county.
Avonmore.	Avonmore Coal Company.	Armstrong.	L. W. Hicks.	Avonmore, Indiana county.
Avondale.	Avondale M. and Manufacturing Company.	Clarion.	James Mitchell.	Lawsonham, Clarion county.
Acme.	Acme Mining Company.	do.	J. W. Hill.	East Brady, Clarion county.
Allegheny.	Allegheny Coal Company.	Butler.	Frank Morrison.	Argentine P. O. Butler county.
Black Diamond No. 1.	Filer, Sutliff & Co.	Mercer.	Frank P. Filer.	Mercer, Mercer county.
Black Diamond No. 2.	do. do.	do.	do.	do. do.
Bagdad No. 2.	Bagdad Coal Company.	Westmoreland.	Alfred Hicks.	Leechburg, Armstrong county.
Bagdad No. 3.	do. do.	do.	do.	do. do.
Big Soldier Run.	Bell, Lewis and Yates Coal Mining Company.	Jefferson.	George Mellinger.	Reynoldsville, Jefferson county.
Barnes.	Mercer Coal Company.	Butler.	W. H. Richardson.	Greenville, Mercer county.
Baker.	L. S. Hoyt.	Beaver.	L. S. Hoyt.	Hoytdale, Beaver county.
Beale.	Beale & Co.	Armstrong.	George Knepshell.	Leechburg, Armstrong county.
Beaver Falls.	James Clayton.	Beaver.	James Clayton.	Beaver Falls, Beaver county.
Brier Ridge.	C. N. Shipman & Co.	Clarion.	J. D. Thomas.	Rimersburg, Clarion county.
Blackstone.	Lewis & Co.	Westmoreland.	Alfred Hicks.	Leechburg, Armstrong county.
Beaver.	Beaver Coal and Coke Company.	Lawrence.	H. K. Hartstuff.	Hoytdale, Beaver county.
Cannelton.	Morgan Coal Company.	Beaver.	H. V. Sanor.	Cannelton, Beaver county.
Carver.	Carver Coal Company.	Mercer.	Frank P. Filer.	Mercer, Mercer county.
Chestnut Ridge.	Filer, Westerman & Co.	do.	E. L. Filer.	Grove City, Mercer county.
Catfish Run.	Catfish Run Coal Company.	Clarion.	Michael Lehner.	Catfish, Clarion county.
Clinton.	Clinton Coal Company.	Beaver.	Alfred Harbison.	Hoytdale, Beaver county.
Cherry Run.	Cherry Run Coal Company.	Clarion.	John G. Hagerty.	Brady's Bend, Armstrong county.
Church Hill.	Church Hill Coal Company.	do.		
Diamond.	Thomas Mitchell & Sons.	do.	George Mitchell.	Lawsonham, Clarion county.
Excelsior.	Wampum Run Coal Company.	Lawrence.	R. H. Mehard.	Wampum, Lawrence county.
Enterprise.	P. D. Sherwin.	Butler.	P. D. Sherwin.	Karns City, Butler county.
Fairmount No. 2.	Fairmount Coal and Iron Company.	Armstrong.	S. Taylor Sheaffer.	New Bethlehem, Clarion county.
Fairmount No. 4.	do. do.	Clarion.	do.	do. do.
Fairbank.	Saltsburg Coal Company.	Westmoreland.	David Galbrath.	Saltsburg, Indiana county.
Foster.	do. do.	Indiana.	do.	do. do.
Glen.	J. R. Smith.	Armstrong.	J. R. Smith.	Manorville, Armstrong county.
Graceton Nos. 1 and 2.	McCreary Coal and Coke Company.	Indiana.	Harry McCreary.	Graceton, Indiana county.
Gosford.	J. L. Turner.	Armstrong.	J. L. Turner.	Gosford, Armstrong county.
Gomersal.	Gomersal Coal Company, Limited.	Butler.	William Ferguson.	Gomersal, Butler county.
Hallville.	Morris Coal Company.	Mercer.	John P. Morris.	Grove City, Mercer county.
Hill.				
Hardscrabble.	Brady's Bend Coal Mining Company.	Clarion.	C. F. Hartwell.	Oil City, Venango county.
Jackson.	James Dye.	Mercer.	James Dye.	Jackson Centre, Mercer county.
Keister.	George Stage.	Butler.	George Stage.	Greenville, Mercer county.
Keystone.	Keystone Coal and Mining Company.	Clarion.	George E. Henry.	East Brady, Clarion county.
Kittanning.	Kittanning Iron Company, Limited.	Armstrong.	Henry Colwell.	Kittanning, Armstrong county.
Lackawannock.	Pierce Coal Company, Limited.	Mercer.	Archy McIntyre.	Neshannock, Mercer County.
Leechburg Nos. 3 and 4.	Leechburgh Coal and Coke Company.	Westmoreland.	A. W. Ashbaugh.	Leechburg, Armstrong county.
Mineral Ridge.	Mineral Ridge Coal Company.	Clarion.	C. W. H. Eiche.	West Monterey, Clarion county.
Mahoning.	Valley Coal and Mining Company.	Armstrong.	H. A. Reynolds.	Mahoning, Armstrong county.
Monarch.	Monarch Coal Company.	Clarion.	C. P. McCafferty.	East Brady, Clarion county.

Mitchell	Indiana Coal Company	Indiana	Jacob Graff	Blairsville, Indiana county.
Mather	Mather Coal Company	do.	Thomas Mather	do.
New Hamilton	Bell, Lewis and Yates Coal Mining Company	Jefferson	George Mellinger	Reynoldsville, Jefferson county.
Oak Ridge	Oak Ridge Coal and Mining Company	Armstrong	J. C. Baker	Oak Ridge Station, Armstrong county.
Ormsby Slope	Shenango Coal and Mining Company	Mercer	J. H. Lane	Jackson Centre, Mercer county.
Pine Run	Pine Run Coal Company	Westmoreland	Alfred Hicks	Leechburg, Armstrong county.
Pine Creek	James W. Ganoe and John L. Murray	Armstrong	John L. Murray	Mosgrove, Armstrong county.
Penn	Penn Coal Company, Limited	Lawrence	W. H. Marquis	Newcastle, Lawrence county.
Pardue	Mercer Coal Company	Mercer	W. H. Richardson	Greenville, Mercer county.
Riverview	Riverview Coal and Mining Company	Armstrong	James L. Moore	No. 22 West Swan street, Buffalo, N. Y.
Rock Point	Rock Point Coal Company	Lawrence	William Brown	Chewtown, Lawrence county.
Rimerton	Rimerton Coal and Mining Company	Armstrong	C. E. Butler	Cosmos, Armstrong county.
Shenango	Shenango Coal and Mining Company	Mercer	J. H. Lane	Jackson Centre, Mercer county.
Sprague	Bell, Lewis and Yates Coal Mining Company	Jefferson	George Mellinger	Reynoldsville, Jefferson county.
Stoneboro Nos. 2 and 3	Mercer Coal and Iron Company	Mercer	Robert P. Cann	Stoneboro, Mercer county.
Spears	Pine Grove Coal Company, Limited	do.	James Spears	Grove City, Mercer county.
Star No. 3	Northwestern Coal and Iron Company	Clarion	S. Taylor Sheaffer	New Bethlehem, Clarion county.
Smith	Robert Smith	Indiana	Robert Smith	Blairsville, Indiana county.
Sterling	Sterling Mining Company	Beaver	George Gould	Cannelton, Beaver county.
Standard	Cant Brothers	Jefferson	G. F. Cant	Reynoldsville, Jefferson county.
Turner	J. M. Turner	Indiana	J. M. Turner	Blairsville, Indiana county.
Turner	Hilliard Coal and Coke Company	Butler	C. A. Jewell	Hilliards, Butler county.
Thompson Run	Thompson Run Coal Company	Lawrence	William Douthett	Newcastle, Lawrence county.

TABLE NO. 2.—*Giving the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the Third Bituminous Mine District, for the year ending December 31, 1892.*

NAMES OF COLLIERIES.	Location County and Postoffice Address.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non fatal accidents.	Number kegs powder used.	Number steam boilers.	Number mine locomotives	Number coke ovens.
Avonmore,	Edri, Indiana county,	54,000		54,000	220	103		1	150			
Apollo,	Apollo, Armstrong county,	13,363		13,363	215	39		1	110			
Avondale,	Lawsonham, Clarion county,	14,592		14,592	150	66			125			
Allegheny,	Argentine, Butler county,	22,852½		22,602	165½	46			121	2		
Acme,	Rimersburg, Clarion county,	42,693		42,693	276	105		1				
Black Diamond No. 1,	Grove City, Mercer county,	56,093		56,093	160	71		2	366	10		
Black Diamond No. 2,	do. do.											
Bagdad No. 2,	Kirtland, Westmoreland county,	50,500		50,500	269	95			250			
Bagdad No. 3,	Leechburg, Armstrong county,											
Blackstone,	Kirtland, Westmoreland county,	35,502		35,502	260	65			150			
Barnes,	Forestville, Butler county,	8,983		8,983	53½	50			2	1		
Brier Ridge,	Rimersburg, Clarion county,	60,106		60,106	259	107			311	1		
Baker,	Hoytdale, Beaver county,	48,710		47,801	220	109			300	1		
Beale,	Leechburg, Armstrong county,	5,000		5,000	100	18						
Beaver,	Hoytdale, Beaver county,	44,425		44,425	261	110		1	291	1	1	
Beaver Falls	Beaver Falls, Beaver county,	10,540		10,025	268	22			38			
Big Soldier Run,	Reynoldsville, Jefferson county,	409,668	26,224	409,668	273	579			3,663	2	1	100
Cannelton,	Cannelton, Beaver county,	16,303		16,303	220	30			52			
Carver,	Stoneboro, Mercer county,	63,809		63,809	210	141			120	6		
Chestnut Ridge,	Grove City, Mercer county,	63,378		63,378	198	132		1	389	5		
Catfish Run,	Catfish, Clarion county,	40,393¼		40,393¼	275	86		1	140			
Clinton,	Hoytdale, Beaver county,	30,801		30,801	259	71			100			
Cherry Run,	Rimersburg, Clarion county,	16,800		16,800	125	57						
Church Hill,	West Monterey, Clarion county,	30,867		30,867	250	78		1				
Diamond,	Lawsonham, Clarion county,	51,097		51,097	199	76		1	300			
Excelsior,	Wampum, Lawrence county,	40,000		40,000	200	90						
Enterprise,	Karns City, Butler county,	9,930		9,930	162	17						

Fairmount No. 2,	Fairmount City, Clarion county,	210,000		209,200	276	340	1	1	1,500	2		
Fairmount No. 4,	do. do.	76,500		76,000	230	110			560			
Fairbank,	Saltsburg, Indiana county,	99,699		99,699	250	159	1	1				1
Foster,	do. do.	19,316		19,316	256	34						
Glen,	Logansport, Armstrong county,	20,210		20,210	313	39			166			
Gosford,	Gosford, Armstrong county,	4,201		4,201	129	26						
Gomersal,	Gomersal, Butler county,	38,200		37,950	210	67		1	200			
Hallville,	Grove City, Mercer county,	50,000		50,000	250	85			500	3		
Hill,	Leechburg, Armstrong county,											
Hardscrabble,	East Brady, Clarion county,	10,000		10,000	175	40						
Jackson,	Jackson Centre, Mercer county,	5,000		5,000	150	22			1			
Kelster,	Coaltown, Butler county,	36,125		35,750	184	86			175			
Keystone,	Lawsonham, Clarion county,	38,750		38,750	234	87			350			
Kittanning,	Kittanning, Armstrong county,											
Lackawannock,	North, Mercer county,	8,112		8,112	103	44			275	4		
Leechburg No. 3,	Leechburg, Armstrong county,	35,250		35,000	240	50				1		
Leechburg No. 4,	do. do.	28,635		28,635	314	37						
Mineral Ridge,	West Monterey, Clarion county,	26,041		26,041	300	52						
Mahoning,	Mahoning, Armstrong county,	5,000		5,000	150	40						
Monarch,	Red Bank Furnace, Clarion county,	18,034		18,034	150	61			130			
Mitchell,	Graceton, Indiana county,	18,250	10,825	1,075	300	35						24
Maher,	Blairsville, Indiana county,	31,486		31,486	293	30						
New Hamilton,	Reynoldsville, Jefferson county,	100,418		100,418	151	166			916	5		
Oak Ridge,	Oak Ridge Station, Armstrong county,	131,946¾		131,946¾	229	229		1	1,500			
Ormsby slope,	Jackson Centre, Mercer county,											
Pine Run,	Leechburg, Armstrong county,	14,270		14,270	206	35			25			
Pine Creek,	Mosgrove, Armstrong county,	9,616		9,616	180	75		1	150			
Penn,	New Castle, Lawrence county,	31,467		31,467	153	90						
Pardoe,	Pardoe, Mercer county,	28,687		28,054	132½	108		3	125	3		
Riverview,	Cosmus, Armstrong county,	71,270		71,270		108		1				
Rock Point,	Chewtown, Lawrence county,	48,072		48,072	311	87			35			
Rimerton,	Rimer, Armstrong county,	10,800		10,800	180	44						
Shenango and Ormsby slope,	Jackson Centre, Mercer county,	22,525¼		19,090	147	154			94½	5		
Sprague,	Reynoldsville, Jefferson county,	215,834		215,834	249	295			1,831	1		
Stoneboro No. 2,	Stoneboro, Mercer county,	49,750		48,976	211	136			128	1		
Stoneboro No. 3,	do. do.	31,973		30,333	195	102		1	117	2		
Spear,	Grove City, Mercer county,	31,600		30,000	175	66				3		
Star No. 3,	New Bethlehem, Clarion county,	153,000		141,500	273	225		5	900	1		
Smith,	Blairsville, Indiana county,	21,675		21,508	300	31						
Sterling,	Cannelton, Beaver county,	37,600		37,600	202	125			375			
Standard,	Reynoldsville, Jefferson county,	57,986		57,986	212	119			578	1		
Superior or Graceton No. 1,	Graceton, Indiana county,	10,000	5,880		61	47						
Superior or Graceton No. 2,	do. do.	40,000	23,529		250	86						
Turner,	Blairsville, Indiana county,	22,454		22,454	300	23						
Turner,	Hilliards, Butler county,	10,000		10,000	200	39		1				
Thompson Run,	do. do.	5,950		5,950	60	51						
Sharon,	Grove City, Mercer county,	31,705½		30,033½	249	51			35	2		
Total,		3,207,814¼	66,458	3,115,368½	11,384½	6,297	2	26	18,484½	63	3	124

TABLE NO. 3.—*Showing the number of each class of employes at each colliery in the Third Bituminous Mine District, during the year 1892.*

NAMES OF COLLIERIES.	Location—County.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.						OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.					Grand totals—inside and outside.
		Inside foreman or mine-boss.	Miners.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Blacksmiths and carpenters.	Engineers and firemen.	All company men.	Superintendent, book keepers and clerks.	Total outside.	
Avonmore	Armstrong	1	85	2	5	2	95	1		6	1	8	103
Apollo	Westmoreland	1	35	1	1		37		1	1	1	2	39
Avondale	Clarion	1	53	1	1	1	60	1		5		6	66
Allegheny	Butler	1	35	2	3		41	1	1	3		5	46
Acme	Clarion	1	84	5	5	2	97	1		5		6	103
Black Diamond No. 1	Mercer	1	50	4	6		61	1	2	5	2	10	71
Black Diamond No. 2													
Bagdad No. 2	Westmoreland	1	73	3	7	1	85	2		6	2	10	95
Bagdad No. 3													
Blackstone	do.	1	53	2	3	1	60	1		3	1	5	65
Barnes	Butler	1	35	2	6		44	2		3	1	6	50
Brier Ridge	Clarion	1	85	3	7	3	98	1	2	5	1	9	107
Baker	Beaver	1	90	3	7		101	1	1	4	2	8	109
Beals	Armstrong		13	1	1		15			2	1	3	18
Beaver	Lawrence	1	85	3	6		95	1		8	3	15	110
Beaver Falls	Beaver	1	17	1	2		21				1	1	22
Big Soldier Run	Jefferson	1	382	74	41	8	506	3	5	58	7	73	579
Cannelton	Beaver	1	20	2	2	1	26			3	1	4	30
Carver	Mercer	1	100	14	8	4	127	2	2	8	2	14	141
Chestnut Ridge	do.	1	100	6	9	4	120	2	3	5	2	12	132
Catfish Run	Clarion	1	71	1	3	1	77	1		5	3	9	86
Clinton	Lawrence	1	55	2	7		65	1		4	1	6	71
Cherry Run	Clarion	1	41	10	4		56	1				1	57
Church Hill	do.	1	67	1	3		72	1		4	1	6	78
Diamond	oo.	1	60	1	5	1	68	1		4	3	8	76
Excelsior	Lawrence	1	68	6	5		80	1		7	2	10	90
Enterprise	Butler	1	14	1			16			1		1	17
Fairmount No. 2	Armstrong	1	265	5	21	10	302	6	3	25	4	38	340

Fairmount No. 1,	Clarion,	1	80	5	9	1	96	2	3	5	1	14	110
Fairbank,	Westmoreland,	1	118	3	15	5	143	2	1	12	2	17	159
Foster,	Indiana,	1	22	2	2	...	27	2	...	3	2	7	34
Glen,	Armstrong,	1	30	1	2	...	34	...	...	3	2	5	39
Gosford,	do.	1	18	1	2	...	22	...	...	2	2	4	26
Graceton No. 1,	Indiana,	1	50	2	5	...	58	1	...	25	2	28	86
Graceton No. 2,	do.	1	25	2	3	...	31	...	...	15	1	16	47
Gomersal,	Butler,	1	51	3	5	1	61	1	...	4	1	6	67
Hallville,	Mercer,	1	69	2	4	...	76	1	2	5	1	9	85
Hill,	Armstrong,	...	...	...	...	...	...	...	...	...	...	...	...
Hardscrabble,	Clarion,	...	30	2	3	...	35	1	...	3	1	5	40
Jackson,	Mercer,	1	16	1	2	...	20	1	...	1	...	2	22
Keister,	Butler,	1	50	15	3	...	69	1	...	15	1	17	86
Keystone,	Clarion,	1	73	2	4	...	80	1	...	4	2	7	87
Kittanning,	Armstrong,	...	...	...	...	...	...	...	...	...	...	...	...
Lackawannock,	Mercer,	1	31	2	2	...	36	1	3	3	1	8	44
Leechburg No. 3,	Westmoreland,	1	40	2	3	...	46	1	...	2	1	4	50
Leechburg No. 4,	do.	1	31	1	1	...	34	1	...	2	...	3	37
Mineral Ridge,	Clarion,	1	39	1	4	...	45	1	...	5	1	7	52
Mahoning,	Armstrong,	1	30	1	2	...	34	1	...	4	1	6	40
Monarch,	Clarion,	1	50	1	3	...	55	1	...	3	2	6	61
Mitchell,	Indiana,	1	23	...	2	...	26	...	...	7	2	9	35
Maher,	do.	1	23	2	3	...	29	...	...	...	1	1	30
New Hamilton,	Jefferson,	1	129	10	11	4	155	1	...	10	...	11	166
Oak Ridge,	Armstrong,	1	177	3	13	7	201	4	3	19	2	28	229
Ormsby slope,	Mercer,	...	...	...	...	...	...	...	...	...	...	...	...
Pine Run,	Westmoreland,	1	28	1	2	...	32	...	...	2	1	3	35
Pine Creek,	Armstrong,	1	60	5	3	2	71	1	...	...	3	4	75
Penn,	Lawrence,	1	70	2	5	1	79	1	...	8	2	11	90
Pardoe,	Mercer,	1	78	3	10	...	92	2	5	6	3	16	108
Riverview,	Armstrong,	1	85	3	8	1	98	1	1	6	2	10	108
Rock Point,	Lawrence,	1	73	1	3	...	78	1	...	6	2	9	87
Riverton,	Armstrong,	1	35	3	3	...	42	1	...	1	...	2	44
Shenango and Ormsby slope,	Mercer,	2	102	11	9	1	125	3	5	15	6	29	154
Sprague,	Jefferson,	1	235	15	17	11	279	2	2	12	...	16	295
Stoneboro No. 2,	Mercer,	1	92	10	13	4	120	2	1	11	2	16	136
Stoneboro No. 3,	do.	1	73	8	6	1	89	1	3	7	2	13	102
Spears,	do.	1	45	10	4	1	61	1	2	...	2	5	66
Star No. 3,	Clarion,	1	160	6	17	5	189	6	4	22	4	36	225
Smith,	Indiana,	1	23	2	2	...	28	...	1	1	1	3	31
Sterling,	Beaver,	1	102	2	6	2	113	1	...	10	1	12	125
Standard,	Jefferson,	1	98	2	5	4	110	1	...	7	1	9	119
Turner (Indiana county),	Indiana,	1	20	...	2	...	23	...	...	...	...	...	23
Sharon,	Mercer,	1	35	2	4	...	42	1	2	3	3	9	51
Turner,	Butler,	1	27	2	2	...	32	1	1	4	1	7	39
Thompson Run,	Lawrence,	1	40	1	2	...	44	1	...	4	2	7	51
Total,		69	4,722	307	309	89	5,496	83	63	455	112	708	6,297

TABLE NO. 4.—*List of fatal accidents which occurred in and about the mines of the Third Bituminous Mine District for the year ending December 31, 1892.*

Date of accident	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Apr. 30.	Patrick Robinson.	Miner.	67	1	3	Fairmount No. 2.	Armstrong.	Was fatally injured by a piece of coal, weighing about fifty pounds, falling upon his face and head while he was undercutting in the bottom bench of the coal bed. Robinson had been a miner for 55 years and was considered a very careful workman. He lived two days after receiving his injuries.
Dec. 31.	John C. Bleakney.	Miner.	50	. .	. .	Fairbank.	Westmoreland. . .	Was fatally injured by a piece of top coal falling on his head while undercutting the seam. He lived two hours after receiving his injuries. He was considered a very careful workman, a good and highly educated citizen.

TABLE NO. 5.—*List of non-fatal accidents which occurred in and about the mines of the Third Bituminous Mine District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 6.	Jerry Smith.	Driver.	30	M.	Riverview.	Armstrong.	A part of one finger taken off while he was spragging a mine wagon.
11.	D. S. Rainey.	Laborer.	49	M.	Pardoe.	Mercer.	Hip joint fractured by mine wagon at weigh-house outside of mine.
Feb. 11.	Frank Pollard.	Miner.	22	S.	Star No. 3.	Clarion.	Injured by fall of coal.
Mar. 1.	Michael We ver.	Laborer.	32	M.	Acme.	do.	Injured by railroad cars on siding at mine tippie.
7.	A. C. Keys.	Miner.	32	M.	Oak Ridge.	Armstrong.	Had his leg fractured below the knee by fall of coal.
15.	John Young.		13	S.	Avonmore.	do.	Run over by mine wagons outside.
15.	William Cook.	Miner.	25	S.	Black Diamond No. 2.	Mercer.	Burned by powder which exploded while he was drilling out a cartridge.
May 16.	John Gill.	do.		S.	Turner.	Butler.	Injured by fall of coal.
16.	Charles Klink.	do.	26	M.	Black Diamond No. 2.	Mercer.	Leg broken by fall of slate.
28.	David Woakes.	do.	17	S.	Star No. 3.	Clarion.	Injured by fall of rock.
June 1.	Less Cook.	do.		S.	Diamond.	do.	Injured by fall of roof slate.
6.	Miles Carr.	Switch boy.	15	S.	Star No. 3.	do.	Injured by mine wagons.
10.	J. H. Anthony.	Miner.	47	M.	do.	do.	Injured by mine wagons.
17.	Charles Isaacson.	do.	51	M.	Pardoe.	Mercer.	Injured by mine wagons.
July 18.	William Straley.	do.	14	S.	Beaver.	Lawrence.	Injured by fall of slate.
Aug. 3.	Elijah Simpson.	do.	30	M.	Catfish Run.	Clarion.	Injured by mine wagons.
20.	William Jones.	do.	28	M.	Star No. 3.	do.	Back injured by fall of slate.
26.	William Shaw.	do.	18	S.	Stoneboro' No. 3.	Mercer.	Face, neck and left arm burned by powder, which exploded while he was drilling out a cartridge.
Sept. 2.	Paul Page.	do.	66	M.	Gomersal.	Butler.	Injured by a fall of slate.
26.	John Fox.	do.	26	M.	Fairmount No. 2.	Armstrong.	Seriously injured by a fall of roof slate, both legs were broken and he received other bodily bruises.
Nov. 4.	Basil Lewis.	do.		M.	Fairbank.	Westmoreland.	Injured by a fall of slate.
26.	George Barnes.	Driver.		M.	Pardoe.	Mercer.	Crushed between mine wagons and coal rib.
Dec. 6.	George W. Crawford.	Miner.	48	M.	Apollo.	Westmoreland.	Leg slightly bruised by fall of coal.
8.	Walter Brunton.	do.	57	M.	Chestnut Ridge.	Mercer.	Leg broken by fall of coal.
17.	Daniel Rosenbarger.	do.	57	M.	Pine Creek.	Armstrong.	Three ribs and right arm broken by fall of coal
23.	J. S. McCoy.	Driver.	25	M.	Church Hill.	Clarion.	Kicked by a mule.

FOURTH BITUMINOUS DISTRICT.

(*McKean, Potter, Tioga, Bradford, Sullivan, Lycoming, Clinton, Cameron, Elk, and that portion of Jefferson lying north of the Low Grade division of the Allegheny Valley railroad, and all that portion of Clearfield county adjacent to and north of the Low Grade division of the Allegheny Valley railroad, and all that portion of Centre county lying east and adjacent to the B. & S. S. railroad, north and adjacent to the Bald Eagle Valley railroad.*)

Hon. THOMAS J. STEWART,

Secretary of Internal Affairs:

SIR: I have the honor to submit herewith my annual report as Inspector of Mines for the Fourth Bituminous Coal District of this state, for the year ending December 31, 1892, in compliance with the act of Assembly of June 30, 1885, together with the usual tables compiled from the annual reports of the operators returned to my office.

These returns show a decrease in total production, of nearly six per cent. below that of the previous year, owing mainly to a shortage of demand for coal in portions of Jefferson, Elk and Centre counties. Five new openings have been made during the year.

Several new fans and furnaces have been erected and other improvements have been made for haulage and drainage.

The general condition of the mines is much improved throughout the district.

The fatal accidents which occurred during the year have increased in number over the previous year, while the non-fatal accidents reported are not as numerous. Four of the fatal accidents appear to have been purely accidental, and the others were largely due to carelessness upon the part of the victims.

Reports of two inquests held are herewith appended, also a report on the Cottage State Hospital at Blossburg, by the Hon. Charles Tubbs, Vice President of the Board of Trustees.

Respectfully submitted.

JAMES N. PATTERSON,
Inspector.

BLOSSBURG, PA., *February 1, 1893.*

SYNOPSIS OF REPORT.

Number of mines in the district,	72
Number of tons of coal mined,	3, 606, 142
Number of tons of coal shipped,	2, 965, 640.5
Number of tons of coke produced,	70, 473
Number of days worked,	6, 809.5
Total employes, inside and outside,	6, 597
Number of horses and mules,	527
Number of mine locomotives,	23
Number of steam boilers,	50
Number of coke ovens reported,	664
Number of kegs of powder used as per operators' reports,	12, 623
Number of fatal accidents,	9
Number of non-fatal accidents,	14
Number of tons produced per each fatal accident,	400, 683
Number of tons produced per each non-fatal accident,	257, 582

FATAL ACCIDENTS.

Caused by fall of coal,	2
Caused by fall of roof,	3
Caused by mine wagons,	2
Caused by mine locomotive,	2
Total,	9

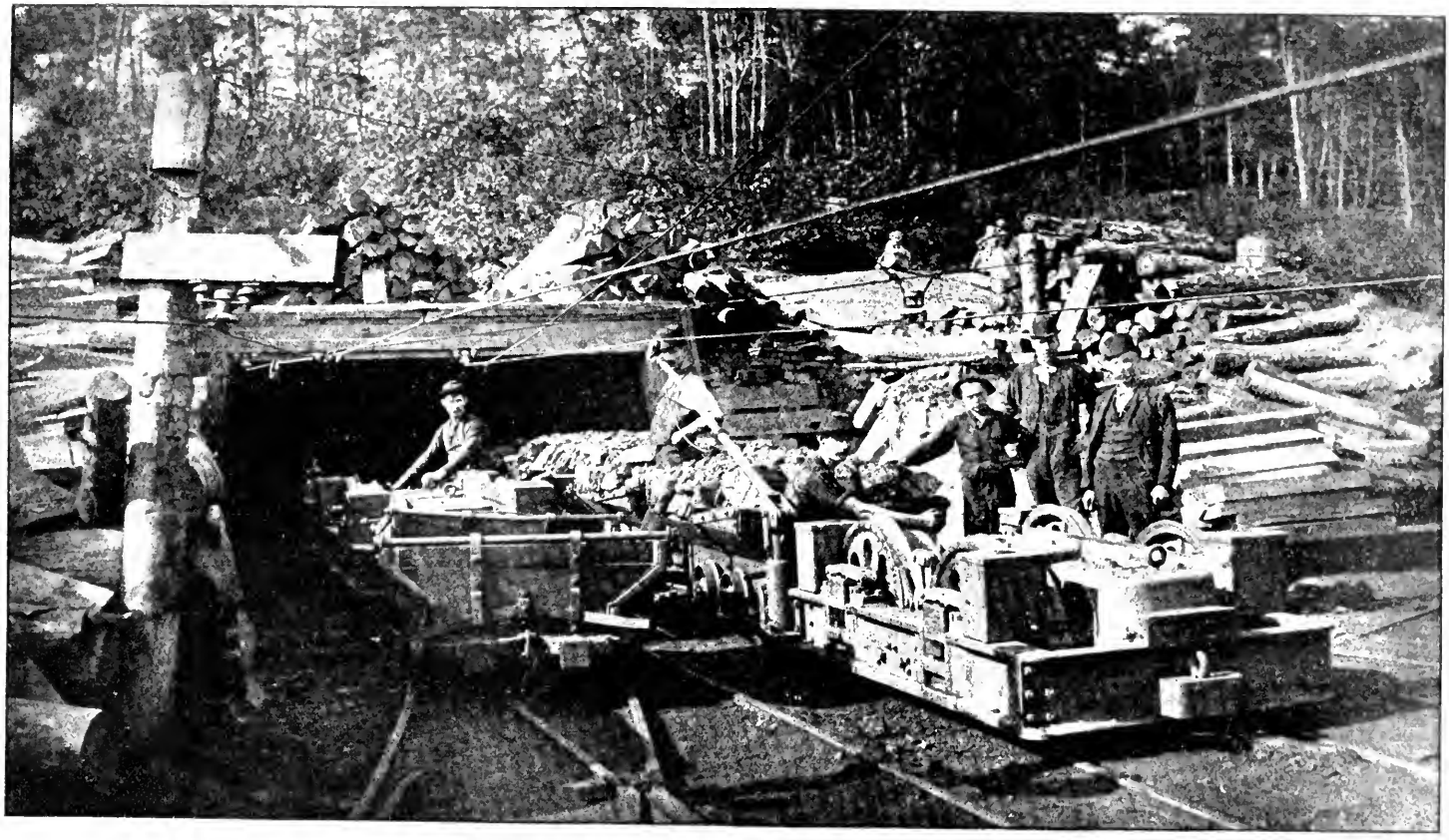
NON-FATAL ACCIDENTS.

Caused by fall of roof,	6
Caused by fall of coal,	7
Caused by mine wagons,	1
Total,	14

TIOGA COUNTY MINES.

Arnot Mines Nos. 3 and 4, are operated by the Blossburg Coal Company. These mines are in good condition. A new drift has been opened east of No. 4 mine, at Arnot, to develop lands recently purchased by the company. Overcasts have been started in No. 4 mine so that each heading will be ventilated by a separate air current. R. T. Dodson, superintendent.

Bear Run Mine.—The same company operates this mine at Landrus. It is ventilated by furnace power at present, but plans and material for the introduction of a fourteen-foot diameter, Guibal fan are now on the ground. This fan will be in operation early in the spring of 1893. The



THE BLOSSBURG COAL COMPANY'S BEAR RUN MINE—SHOWING 2 T. M. M. 30 h. p. MINING LOCOMOTIVES

inclined plane of Bear Run mine is twelve hundred and seventy-eight feet long and is used for lowering coal from the mine to railroad track, and was, until recently, operated by a one-inch wire rope, hemp center, running around a seven-foot diameter grip sheave. The sheave was a source of trouble and expense. It was removed and during the year, was replaced by a *letting down* drum eight feet in diameter, geared to a twelve-foot regulating fan. A one and one-eighth inch steel wire rope, hemp center, has replaced the one-inch rope. The present arrangement works well. R. T. Dodson is superintendent.

Fall Brook Mines.—Owned and operated by the Fall Brook Coal Company, are in good condition. They have added a new heading to drift No. 2, which shortens the haulage one thousand feet, and drains the balance of the workings. They have spared no expense to put these mines in the best possible working condition, Anton Hardt is superintendent and Robert Russel, mine-boss.

Antrim Mines Nos. 1, 2 and 5, operated by the Fall Brook Coal Company are in good condition. They have worked but little over half time, owing to the decrease in demand for coal. Anton Hardt is general manager, James Pollock, superintendent, and George Sneddon and Morgan Davis mine-bosses.

Gaines Mines.—Operated by the Gaines Coal and Coke Company; have produced but little coal during the year. Patrick C. Smith is superintendent.

The Morris Run Slope and Salt Lake Mines.—Operated by the Morris Run Coal Mining Company, are in good condition. W. S. Nearing is superintendent and mining engineer, W. R. Gilmour, mine foreman, and Campbell Haddow and M. Driscoll, assistants.

BRADFORD COUNTY MINES.

Long Valley Mines.—Operated by the Long Valley Coal Company, consists of an old and a new drift operated separately. The old drift is in fair condition, and the work is confined mainly to drawing ribs and pillars. At the new drift they have erected a "Clark fan," five feet in diameter, and built a gravity plane about seventeen degrees in pitch. The track is laid with twenty pound "T" iron rails. They can handle from seven to eight hundred tons per day over this plane. E. O. Mac farlane is superintendent and William R. Jones mine-boss.

ELK COUNTY MINES.

The Dagus Mines, located at Dagus, operated by the northwestern Mining and Exchange Company, are all in good condition except the slope mine, which is defective in ventilation. They are endeavoring to make the needed improvements as rapidly as possible. David Robertson is superintendent and John Aikman and John Currie mine-bosses.

Mead Run Mines, two in number, are also operated by the Northwestern Mining and Exchange Company, and are in good condition

both as to drainage and ventilation. A new drift has been made, which will increase the capacity of these mines. D. Robertson is superintendent and John Ward mine boss.

Glen Fisher, formerly called Whitehead mines, are operated by the Standard Coal and Coke Company, successors to the Elk Coal and Coke Company. They have erected a twelve-foot fan, and built an outside hauling road nearly one mile in length from the new drift to the coke ovens at the old or No. 1 drift. I. T. Huff is superintendent and C. W. Farber mine-boss.

Cascade Mines, Nos. 5 and 6, operated by Kaul & Hall, are in fair condition. They have operated steadily throughout the year. Andrew Kaul is superintendent and Martin Dippold mine-boss.

Hazel Dell Mine, also operated by Kaul & Hall, is in fair condition.

St. Mary's Mines, consisting of five separate drifts, operated by the St. Mary's Coal Company, are in good condition. They have worked steadily throughout the year. J. B. Coryell is superintendent and Joseph Eddy and Jacob Anderson mine-bosses.

Tannerdale Mine, operated by the St. Mary's Coal Company, has not been in operation during the year.

Shawmut Mines, operated by the Shawmut Coal Company, have erected two new furnaces, improved the drainage and are arranging to use electric motors for hauling the coal from the workings. The under clay taken from these mines is utilized in the manufacture of fire bricks of a very good quality for paving purposes, and finds quite a ready market. E. Z. Griggs is superintendent and T. J. Matthews mine-boss.

Elbon Mine, located at Oyster and operated by the Noble Coal Company, is in good condition. It is a new mine, and operations during the year have been mainly confined to driving headings. E. Z. Griggs, is superintendent and H. J. Thomas, mine-boss.

JEFFERSON COUNTY MINES.

Clarion Mines, consisting of seven separate drifts, owned and operated by the Northwestern Mining and Exchange Company, are in good condition. They have recently purchased the Alexander coal property adjoining the mines, which enables them to extend the workings for a much longer period of time. David Robertson is superintendent and John Britt and Robert Hawkins, mine-bosses.

Coal Glen Mines, consisting of two separate openings, are owned and operated by the Jefferson Coal Company. They are in good condition and have worked steadily throughout the year. Austin Blakeslee is superintendent and J. M. Jones, mine-boss.

Beechtree Mines, owned and operated by the Rochester and Pittsburg Coal and Iron Company, are in good condition. A new drift has been added to these mines, and operations have continued quite steadily throughout the year. David Fleming is superintendent, and John T. Smith mine-boss.

London Mine, owned and operated by the Falls Creek Mining Company, was found to be in good condition. A new drift has been added to this mine. The same company also owns and operates the Dixon mine in Clearfield county. The last named mine is nearly worked out. John Reed is superintendent and William Reed, mine-boss.

Brock Mines, located at Brockwayville, operated by the Brock Coal Company, are in fair condition. They have introduced the electric haulage system here for conveying the coal from the mines. Robert Dick is mine-boss and E. Z. Griggs, superintendent.

CLEARFIELD COUNTY MINES.

Williamsport Mines, owned and operated by the Clearfield Coal Company, are in fair condition. They have added a new drift and a locomotive for outside haulage. James P. Eddy, is mine-boss and A. K. Jacobs superintendent.

Rochester Slope Mines, owned and operated by Bell, Lewis & Yates, are in good condition. The haulage ropes in Rochester mines have been lengthened and otherwise improved. Two curves in the haulage road have been done away with, and the capacity for haulage thereby increased, notwithstanding the added length. The long rope now hauls for a distance of fully one and one-half miles, and it is not an uncommon thing for a train of fifty loaded mine cars to be taken out at a speed of eight miles an hour, up a total elevation of ninety-five feet, by this means. There has also been placed in this mine a duplex pump, manufactured at Jeanesville Iron Works, of five thousand gallons per minute capacity. There were already in place two Griscom duplex pumps, one of thirty-four hundred and the other of eighteen hundred gallons per minute capacity. The combined power of all the pumps will hereafter be more than ten thousand gallons per minute, or fourteen million, six hundred an eighty-eight thousand gallons in twenty-four hours. The water is elevated seventy feet. Some four hundred acres of coal have been added to the territory belonging to this company during the past year, which, together with that before possessed, will permit of active operation there for many years to come. John Reed is superintendent, and William Patterson mine-boss.

Helvetia Mines, consisting of a drift opening and a slope, owned and operated by Adrian Islein, are in good condition. Twenty-eight coke ovens have been built here during the year. The improvements and facilities for operating will enable them to handle a large quantity of coal when under full headway. John McLeavy is superintendent, and William McLeavy mine-boss.

MCKEAN COUNTY MINES.

Instanter Mine, located at Clermont, is owned by the Buffalo Coal Company and operated by John F. Keating. The ventilation is fair,

but the drainage is not so good. They have operated full time during year. James Maloney is mine-boss.

CENTRE COUNTY MINES.

Sugar Camp Mines, owned and operated by the Lehigh Valley Coal Company, have worked about half time and are in good condition. They have added two new openings, one in the "B" seam and the other in the "D" seam. James F. Marstellar is superintendent and Robert Cooper mine-boss.

Lucas Hill Mine is owned and operated by the last named company. Operations here are now confined to drawing ribs and pillars. Low Price is mine-boss.

Snow Shoe Colliery, is operated by the Kelley Bros. in a small way; operations being now confined to rib and pillar work.

Centre Company Coal Mines, near Snow Shoe, have not been operated during the year.

Cato Mine, operated by the Cato Coal Mining Company, has done but little work during the year. D. A. Black is superintendent.

CLINTON COUNTY MINES.

Kettle Creek Mines, two in number, owned and operated by the Kettle Creek Coal Company, are in good condition and have worked quite steadily throughout the year. The ventilation, drainage and hauling ways are kept in good condition at all times. The regulations and provisions of the law are rigidly enforced by those in charge. George L. Miller is superintendent and mining engineer and J. Ward, mine-boss.

LYCOMING COUNTY MINES.

The Red Run Coal Company owns and operates a mine newly opened up near Ralston. Operations here have been principally confined to improving and extending the mine. Ventilation is produced by furnace power and the coal is hauled from the drift mouth by a steam locomotive over a tramway one and three-eighth miles in length, and thence down a gravity plane 1,400 feet in length with an inclination of 24½ degrees, to the Northern Central railroad, where the schutes are located. The openings are made in what is called the double "B" vein, the lower bench being 2 feet 10 inches in thickness, overlaid by a slate and fire clay parting from 3½ to 4½ feet in thickness, on which rests the upper bench, which measures from 2 feet 4 inches to 2 feet 10 inches in thickness, with a small parting of bony coal. The upper bench is said to be the best of the two in quality. They have also opened two drifts in the "E" vein, which is about 140 feet above the double "B" vein. The "E" vein measures 2½ feet of clean coal in thickness. The last named drifts are also reached by a gravity plane 700 feet in length. Robert Brownlee is superintendent.

An inquisition indented and taken at Arnot, Tioga county, and State of Pennsylvania, September 10, 1892, before me, D. C. Waters, acting coroner of county aforesaid, upon the view of the body of George Gilday, then and there lying dead, upon the oaths of James Cleary, Nicholas Shultz, Edward McCabe, John McKinney, Frank Keagle and Michael Ryan, good and lawful men in the county aforesaid, sworn to inquire on the part of the commonwealth, when, where, how and in what manner George Gilday came to his death, do say upon their oaths that he came to his death on the 9th day of September, A. D. 1892, by being run over by Alfred Neal's engine and several cars which were drawing coal from the mines from No. 3 drift, in Arnot mines, while lying upon the track in the mine at No 1 switch in an unconscious and insensible condition; the cause of said condition unknown to said jury; and that there was no person to blame for his death except himself. In witness whereof, as well as the aforesaid acting coroner and the jurors thereof, have to this inquisition set their hands and seals on the day and year above mentioned.

[SEAL] D. C. WATERS,
Acting Coroner.
[SEAL] JAMES CLEARY,
[SEAL] NICHOLAS SHULTZ,
[SEAL] EDWARD MCCABE,
[SEAL] JOHN MCKINNEY,
[SEAL] FRANK KEAGLE,
[SEAL] MICHAEL RYAN,
Jurymen.

Inquest held at Fall Brook, December 5th, 1892. That the said Edward Kane, a mule driver employed by the Fall Brook Coal Company, met his death by falling from his trip of wagons coming out of the mines, his light having gone out; and we therefore think it an unforeseen accident.

[SEAL] L. C. SHEAPARD,
Acting Coroner,
[SEAL] J. G. JONES,
[SEAL] DANIEL MAY,
[SEAL] ROB'T TOTHERYAL,
[SEAL] ROB'T SOMMERVILLE,
[SEAL] WM. ARMSTRONG,
[SEAL] ANDREW MCCANN.

JEFFERSON COAL COMPANY,
COAL GLEN, PA., *August 3, 1892.*

J. N. PATTERSON, Esq., *Mine Inspector:*

DEAR SIR: I received your letter and will give you the information you request. On Monday, July 25, about four o'clock our mine locomotive came out with her regular trip of loaded cars and pulled up towards

tipple, crossed over at switch and ran back and shoved the loaded cars to tipple with pole. Jno. F. Gold, the man who was working on engine, was on head end of locomotive and as engine pushed the cars over the hill, he signaled the engineer to stop as they were far enough. The engineer shut off as usual. Gold took hold of end of pole next engine, but allowed the other end of pole to drop to ground and caught against a tie. He had raised end of pole about two feet when front end caught on tie and held pole directly in front of him and he was caught between end of pole and sand-box on engine, as engine was moving ahead slowly after steam was shut off. End of pole caught his leg at his thigh and cut the flesh badly and smashed the bone so that it was necessary to amputate his limb. He did not loose much blood and was in good condition for the operation. No one expected that he would die from operation, but his heart failed and he sank all at once and died in collapse. He was not touched or injured anywhere else and ought not to have died, but he must have had some heart trouble which was the primary cause of his death.

Yours truly,

AUSTIN BLAKESLEE,
Superintendent.

COAL GLEN, PA., *August 3, 1892.*

To whom it may concern:

John F. Gold was caught by push pole of mine engine at Coal Glen, July 25, 1892, sustaining an injury that necessitated amputation at upper third of left thigh. There was not much loss of blood, but patient's heart began to fail and he sank in collapse and died about one-half hour after operation.

(Signed) J. M. COOLEY,
Attending Surgeon.

REPORT ON THE COTTAGE STATE HOSPITAL AT BLOSSBURG.

Since the last report the hospital grounds, which were exceedingly rough, rocky, and in part covered with brush, have been much improved. Some of the brush has been cut and removed, others trimmed, the rocks built into a retaining wall at the foot of the slope in front of the hospital, and the knolls and hillocks reduced to an even grade.

The grounds have been surrounded with a suitable post and barb-wire fence. This was rendered necessary to guard against the encroachments of the Blossburg cows which, by a custom more powerful than law, are still allowed to roam at large.

The interior of the hospital has been somewhat altered. A light partition of Georgia pine has been erected across the north ward, thereby

separating it into two rooms. One of these rooms is used for the reception of female patients, for isolating a patient in whose case symptoms of a contagious disease may have developed, or for other purposes as the occasion may require.

The veranda at south end of the hospital has been enclosed with sash doors, carpeted with thick linoleum and furnished with steam heat, to be used as a sun parlor, smoking room and reading room by convalescents.

A new building for the storing of fuel has been erected conveniently near to the heating apparatus.

All of the above improvements have been made under the personal supervision of Winfield Scott Nearing, president of the board of trustees and chairman of the committee on house and grounds. He has given unstintedly of his time and ability for the benefit of the hospital.

The Cottage State Hospital for Injured Persons at Blossburg has an equipment of twenty-two beds, with full staff of surgeons and nurses. Its usefulness has thus far been mainly limited to the region around about Blossburg. Other sections of this inspection district are equally entitled to its benefits, and it is believed they would avail themselves of its advantages were that fact known among the people at large.

A popular error prevails that it is exclusively a miner's hospital. During the erection of the building it was often alluded to in the newspapers as the miner's hospital. This designation was altogether erroneous if by that term it was meant that others were excluded. Nothing in the act of the Legislature authorizing the construction of this hospital, or the various appropriation bills for furnishing the same with equipment and maintenance, limits the usefulness of the institution to people engaged in any one avocation—miners, farmers, lumbermen, railroad employes, and all others are equally its beneficiaries. It is desirable that there should be a wider knowledge of this fact.

Projected improvements include a new building on the grounds for a residence for the janitor and his family, and a change in the heating apparatus so that it will consume soft coal instead of anthracite as at present.

CHARLES TUBBS,
Vice President Cottage State Hospital.

BLOSSBURG, PA., *December 31, 1892.*

TABLE 1.—*Showing location of collieries in the Fourth Bituminous Mine District.*

NAME OF COLLIERY.	Names of Operator.	Location County.	Name of Superintendent.	Postoffice Address.
Antrim Nos. 1, 2 and 3.	Fall Brook Coal Company.	Tioga.	James Pollock.	Antrim, Tioga county.
Arnot Nos. 3 and 4.	Blossburg Company.	do.	R. T. Dodson.	Arnot, Tioga county.
Bear Run.	do. do.	do.	do.	do. do.
Beachtree Nos. 2 and 3.	Rochester and Pittsburg Coal and Iron Co.	Jefferson	D. Fleming.	DeLaney, Jefferson county.
Brock mines.	Brock Coal Company.	do.	E. Z. Griggs.	Elbon, Elk county.
Cameron.	Cameron Coal Company.	Cameron.	H. S. Fleming.	Emporium, Cameron county.
Cascade Nos. 1 and 2.	Kaul & Hall.	Elk.	Andrew Kaul.	St. Marys, Elk county.
Coal Glen.	Jefferson Coal Company.	Jefferson.	Austin Blakeslee.	Coal Glen, Jefferson county.
Clarion Nos. 1 to 7.	Northwestern Mining and Exchange Co.	Elk.	D. Robertson.	Ridgway, Elk county.
Clermont.	Buffalo Coal Company.	McKean.	J. H. Tate.	Clermont, McKean county.
Cato.	Cato Mining Company.	Centre.	D. A. Black.	Cato, Centre county.
Dagus mines Nos. 1 to 25.	Northwestern Mining and Exchange Co.	Elk.	D. Robertson.	Ridgway, Elk county.
Dixon.	Falls Creek Mining Company.	Clearfield.	John Reed.	DuBois, Clearfield county.
Elbon.	Noble Coal Company.	Elk.	E. Z. Griggs.	Elbon, Elk county.
Fall Brook Nos. 3 and 6.	Fall Brook Coal Company.	Tioga.	Anton Hardt.	Wellsboro, Tioga county.
Glen Fisher.	Standard Coal and Coke Company.	Elk.	I. T. Huff.	Williamsport, Lycoming county.
Gurnee Nos. 1, 2 and 3.	Gaines Coal and Coke Company.	Tioga.	Patrick C. Smith.	Gurnee, Tioga county.
Hazel Dell.	Kaul & Hall.	Elk.	Andrew Kaul.	St. Marys, Elk county.
Helvetia Nos. 1 and 2.	Adrian Islein.	Clearfield.	John McLeavy.	Stanley, Clearfield county.
Instanter.	Buffalo Coal Company.	McKean.	John F. Keating.	Clermont, McKean county.
Kettle Creek Nos. 1 and 2.	Kettle Creek Coal Company.	Clinton.	G. L. Miller.	Bitumen, Clinton county.
London.	Falls Creek Mining Company.	Jefferson.	John Reed.	DuBois, Clearfield county.
Lucas Hill.	Lehigh Valley Coal Company.	Centre.	J. F. Marstellar.	Snow Shoe, Centre county.
Morris Run, Nos. 1, 2 and 3.	Morris Run Coal Mining Company.	Tioga.	W. S. Nearing.	Morris Run, Tioga county.
Mead Run.	Northwestern Mining and Exchange Co.	Elk.	David Robertson.	Ridgway, Elk county.
Mine A and B.	Centre Coal Company.	Centre.	William Grawer.	Bellefonte, Centre county.
Red Run Nos. 1 and 2.	Red Run Coal Company.	Lycoming.	Robert Brownlee.	Ralston, Lycoming county.
Rochester.	Bell, Lewis & Yates Coal Mining Company.	Clearfield.	John Reed.	DuBois, Clearfield county.
Sandy Lick.	do. do. do.	do.	do.	do. do.
Shawmut Nos. 1, 2 and 3.	Shawmut Coal Company.	Elk.	E. Z. Griggs.	Elbon, Elk county.
Snow Shoe colliery.	Kelly Bros.	Centre.	M. D. Kelley.	Snow Shoe, Centre county.
Sugar Camp Nos. 1, 2 and 3.	Lehigh Valley Coal Company.	do.	J. F. Marstellar.	do. do.
St. Marys Nos. 1, 2, 3, 4 and 5.	St. Mary's Coal Company.	Elk.	Joseph Eddy.	St. Marys, Elk county.
Tannerdale.	do. do.	do.	do.	do. do.
Williamsport Nos. 1, 2, 3.	Clearfield Coal Company.	Clearfield.	A. K. Jacobs	Tyler, Clearfield county.
Glen Fisher.	Standard Coal and Coke Company.	Elk.	I. T. Huff.	Williamsport, Lycoming county.

TABLE No. 2.—*Giving the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the Fourth Bituminous Mine District for the year ending December 31, 1892.*

28-12-92.

NAMES OF COLLIERIES.	Location—County.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number of days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs of powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Arnot Nos. 3 and 4,	Tioga,	295,510	1,093	297,661	248¼	649	1	2	2,200	4	51	2	200
Antrim Nos. 1 and 2,	do.	215,980	.....	111,991	179	566	.....	.....	.....	4	31	2	.....
Bear Run,	do.	88,344	.....	88,150	227½	254	.....	1	1,000	2	4	2	.....
Beechtree Nos. 2 and 3,	Jefferson,	119,247.15	.....	118,665.15	232	323	1	.....	.....	1	23	.....	.....
Brock Mines,	do.	69,584	.....	57,055	248	124	.....	.....	900	2	2	2	.....
Cameron,	Cameron,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cascade Nos. 1 and 2,	Elk,	61,275	.....	61,025	286	84	.....	1	.....	.....	.....	.....	.....
Clarion Nos. 1 to 7,	Jefferson,	257,469.15	.....	256,000	189	434	.....	3	.....	2	42	.....	.....
Clermont,	McKean,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Coal Glen Nos. 1 and 2,	Jefferson,	181,100	.....	180,000	243	258	1	.....	1,300	3	15	1	.....
Cato,	Centre,	10,000	.....	10,000	160	40	.....	.....	.....	.....	4	.....	.....
Dixon,	Clearfield,	17,579.18	.....	17,579.18	140	47	.....	.....	.....	.....	4	.....	.....
Dagus Mines Nos. 1 to 25,	Elk,	281,210.04	.....	279,617.7	203	485	.....	1	.....	7	31	2	36
Elbon,	do.	20,276	.....	20,276	204	46	.....	.....	350	.....	4	.....	.....
Fall Brook Nos. 3 and 6,	Tioga,	77,560	.....	74,255	265	186	1	.....	.....	1	26	2	.....
Glen Fisher,	Elk,	42,600	17,181	3,036	200	101	.....	.....	325	2	7	1	100
Gurnee Nos. 1, 2 and 3,	Tioga,	5,922	.....	5,143	211½	10	.....	.....	29	.....	1	.....	.....
Hazel Dell,	Elk,	23,756	.....	23,611	284	41	.....	.....	.....	.....	3	.....	.....
Helvetia Nos. 1 and 2,	Clearfield,	174,398	2,218	169,141	213½	214	1	1	1,425	5	33	.....	28
Instanter,	McKean,	21,058	.....	21,058	287	44	.....	.....	10	.....	3	.....	.....
Kettle Creek Nos. 1 and 2,	Clinton,	98,242	.....	98,242	208	173	1	1	400	.....	22	2	.....
London,	Jefferson,	120,033.08	.....	120,035.8	190	237	.....	.....	.....	.....	17	.....	.....
Long Valley Nos. 1 and 2,	Bradford,	53,517	.....	53,517	206	122	.....	.....	600	1	24	1	.....
Lucas Hill,	Centre,	7,108.11	.....	7,108.11	126	15	.....	.....	.....	.....	1	.....	.....
Morris Run Nos. 1, 2 and 3,	Tioga,	281,440	.....	212¾	556	1	2	.....	.....	4	34	1	.....
Mead Run,	Elk,	144,610.15	.....	144,000	196	259	1	.....	.....	2	20	1	.....
Mines A and B,	Centre,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE NO. 2.—*Continued.*

NAMES OF COLLIERIES.	Location—County.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Red Run Nos. 1 and 2.	Lycoming.	17,000	.....	16,600	252	60	...	...	325	...	3	1	...
Rochester.	Clearfield.	555,862	.....	555,862	280	641	1	2	2,400	8	69	...	...
Sandy Lick.	do.	.....	.....	.....	.....	.....	...	...	.....	...	...	...	...
Shawmut Nos. 1, 2 and 3.	Elk.	52,749	.....	52,643	209	90	...	...	800	...	6	...	...
Snow Shoe colliery.	Centre.	24,608	.....	24,390	230	29	...	...	.....	...	3	...	...
Sugar Camp Nos. 1, 2 and 3.	do.	124,226.50	27,600	80,368.11	129½	225	...	...	.....	...	21	1	200
St. Mary's Nos. 1, 2, 3, 4 and 5.	Elk.	100,376	.....	.....	300	137	...	...	159	...	8	1	...
Tannerdale.	do.	.....	.....	.....	.....	.....	...	...	.....	...	...	...	...
Williamsport Nos. 1, 2 and 3.	Clearfield.	63,502	22,381	18,609	250	147	...	...	400	2	16	1	100
Totals.		3,606,142.36	70,473	2,965,639.05	6,809½	6,597	9	14	12,623	50	527	23	664

TABLE NO. 3.—*Showing the number of each class of employes at each colliery in the Fourth Bituminous Mine District, during the year 1892.*

NAMES OF COLLIERIES.	Location—County.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand totals—inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All company men.	Superintendents, book keepers and clerks.	Total outside.	
Arnot Nos. 3 and 4.	Tioga,	3	384	24	19	54	18	502	2	8	6	69	56	6	147	649
Antrim Nos. 1 and 2.	do.	3	365	35	10	31	12	456	2	7	6	82	7	6	110	566
Bear Run.	do.	2	181	19	23	7	2	234		5	2		12	1	20	254
Beachtree Nos. 2 and 3.	Jefferson.	1	279		3	11	5	299		3	1		7	1	12	311
Brock mines.	do.	1	95		5	7	1	109			3		8	2	15	124
Cameron.	Cameron.															
Cascade Nos. 1 and 2.	Elk.	1	70		3	4		78		1	1		6	2	10	88
Clarion Nos. 1 to 7.	Jefferson.	2	345		8	27	3	385	1	7	3		36	2	49	434
Clermont.	McKean.															
Coal Glen Nos. 1 and 2.	Jefferson.	1	182	37	6	10		236	1	2	3		14	2	22	258
Cato.	Centre.	1	25	4	7	3		40	1	1		1		1	4	44
Dixon.	Clearfield.	1	37			3		40		2			4	1	7	47
Dagus Mines Nos. 1 to 25.	Elk.	4	356		14	29	1	404	2	12	7		57	3	81	485
Elbon.	do.	1	31		2	2		36		2			6	2	10	46
Fall Brook Nos. 3 and 6.	Tioga.	2	114	14	5	17	7	159	2	3	3	16		3	27	186
Gurnee Nos. 1, 2 and 3	do.	1	10		1	1		13					1		1	14
Hazel Dell.	Elk.	1	35		2	3		41		1			2		3	44
Helvetia Nos. 1 and 2.	Clearfield.	1	214		21	11	10	257		2	3		12	2	19	276
Instanter.	McKean.	1	33		1	3		38			2		3	1	6	44
Kettle Creek Nos. 1 and 2.	Clinton.	1	137		5	10	2	155		3	1	4	7	3	18	173
London.	Jefferson.	1	203		2	12	3	221		2			10	3	15	236
Long Valley Nos. 1 and 2.	Bradford.	1	75		8	8	4	96	1	2	2	4	14	3	26	122
Lucas Hill.	Centre.	1	12			1		14					1		1	15
Morris Run Nos. 1, 2 and 3.	Tioga.	3	380		47	37	32	499	1	6	4	35	14	7	67	566
Mead Run.	Elk.	2	209		2	16	1	230	1	4	3	1	19	2	30	260
Mines A and B.	Centre.															
Red Run Nos. 1 and 2.	Lycoming.	1	27	4	2	3	1	38	1	7	1	1	10	2	22	60
Rochester.	Clearfield.	2	540		5	45	12	604	1	7	6		20	3	37	641
Sandy Lick.	do.															
Shawmut Nos. 1, 2 and 3.	Elk.	1	66		2	6		75		2			11	2	15	90
Snow Shoe colliery.	Centre.		23	2		2		27						2	2	29

TABLE No. 3.—*Continued.*

NAMES OF COLLIERIES.	Location—County.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.						OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand totals—inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door-boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers.	All other company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Sugar Camp Nos. 1, 2 and 3	Centre	1	196		7	8	2	214		3	2		32	3	40	254
St. Mary's Nos. 1, 2, 3, 4 and 5	Elk	2	121		4	5		132		2	2		2	2	9	141
Tamerdale	do															
Williamsport Nos. 1, 2 and 3	Clearfield		90	2	4	8	1	104		2	2	3	36	2	45	147
Glen Fisher	Elk	1	72		1	4	2	82	1	1	2		8	2	19	101
Total		45	4,907	141	219	387	119	5,818	19	101	65	216	415	71	887	6,705

TABLE No. 4.—*List of fatal accidents which occurred in and about the Mines of the Fourth Bituminous Mine District, for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	Number of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Feb. 10,	Martin Lis,	Miner,	38	M.	6	Morris Run,	Tioga,	Instantly killed by fall of stone; he had fired a shot and just entered under the stone when it fell.
Feb. 24,	John Weaver,	Door-tender,	13	...	...	Helvetia,	Clearfield,	Crushed between wagons and rib; died about three hours after the accident.
Mar. 29,	R. J. Harrington,	Miner,	35	M.	4	Beachtree,	Jefferson,	Instantly killed by fall of roof; he went to work under it knowing it was dangerous, but thought it would not fall until he had another car loaded.
June 21,	William Manning,	Trackman,	...	...	...	Rochester,	Clearfield,	Fatally injured by fall of roof; died in five hours afterwards.
July 25,	John F. Gold,	Engine fireman,	26	M.	...	Coal Glen,	Jefferson,	Died after amputation, following injury received on locomotive engine outside of mine. See report of superintendent and attending surgeon.
Sept. 9,	George Gilday,	Track layer,	...	...	...	Arnot,	Tioga,	Run over by mine locomotive. See report of inquest.
Sept. 15,	Joseph Kraves,	Miner,	28	M.	1	Kettle Creek,	Clinton,	Instantly killed by fall of coal. This miner was told by the mine-boss to sprag his coal, as he considered it loose, but he failed to obey the instructions given him.
Sept. 23,	Thomas Bendick,	Miner,	28	M.	1	Mead Run,	Elk,	Fatally injured by fall of rock; died five hours afterwards.
Dec. 5,	Edward Kane,	Mule driver,	22	S.	...	Fall Brook,	Tioga,	Killed by mine cars. See report of inquest.

TABLE NO. 5.—*List of non-fatal accidents which occurred in and about the mines of the Fourth Bituminous Mine District, for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 12.	Andy Tucker.	Miner.	45	M.	Clarion No. 2.	Jefferson.	Leg broken by fall of coal.
Feb. 29.	Martin Lis.	do.	41	M.	Morris Run.	Tioga.	Two ribs broken by fall of roof.
Mar. 26.	Adam Moots.	do.	41	M.	Helvetia.	Clearfield.	Leg broken by fall of coal.
Apr. 25.	James McDonald.	do.	30	S.	Kettle Creek.	Clinton.	Leg and arm broken by fall of slate.
May 13.	James Edwards.	do.	49	M.	Bear Run.	Tioga.	Back injured by a fall of roof.
23.	John Augustrom.	do.	22	S.	Dagus No. 3.	Elk.	Collar bone broken by fall of coal.
28.	John Edstrom.	do.	30	S.	Morris Run.	Tioga.	Leg broken by fall of coal.
July 26.	Ira Williams.	do.	41	M.	Arnot No. 4.	do.	Collar bone broken by fall of roof.
26.	James White.	do.	22	S.	Arnot No. 4.	do.	Collar bone broken by fall of roof.
29.	Thomas Price.	do.	..	M.	Rochester.	Clearfield.	Leg broken by fall of coal.
29.	John Hall.	do.	..	M.	Rochester.	do.	Severely injured by fall of coal.
Aug. 22.	John Remvicks.	Mule driver.	23	S.	Cascade.	Elk.	Foot injured by mine cars.
Sept. 12.	Nicklo Gallo.	Miner.	30	S.	Clarion No. 1.	Jefferson.	Collar bone broken by fall of coal.
Dec. 5.	Frank Deland.	do.	54	M.	Clarion No. 2.	do.	Leg broken by fall of roof.

FIFTH BITUMINOUS DISTRICT.

(FAYETTE AND SOMERSET COUNTIES.)

UNIONTOWN, *February 23, 1893.*

HON. THOMAS J. STEWART,
Secretary of Internal Affairs:

SIR: I have the honor of submitting my report of the inspection of mines in the Fifth bituminous district for the year ending December 31, 1892.

The following tables show the production of coal to be 7,360,101 tons, an increase of 1,896,307 tons over that of last year.

I am pleased to say that the fatal accidents have not increased in the same ratio, showing that there is more care exercised by both the employer and employe.

The non-fatal accidents show an increase from forty-two last year to sixty this year, but I account for this by the mine-bosses being more careful in reporting the slight injuries which they formerly neglected to do, thinking they were too slight to be worthy of notice. The following is a list of the fatal and non-fatal accidents, together with their causes:

CAUSES.	Fatal.	Non-fatal.
By falls of roof,	18	17
By mine wagons,	5	33
By mules,	.....	4
By dynamite,	.....	2
By fall of coal,	.....	3
By fall from scaffold,	.....	1
Total,	23	60

I am pleased to report that the majority of the operators are endeavoring to comply with the law, with a few exceptions, who persist in trying to make the Inspector's duties disagreeable by refusing to make the necessary reports and in some instances totally disregarding the welfare of their employes. The following is a summary of this report:

Number of mines in the district,	89
Number of tons of coal mined,	7, 360, 101
Number of tons of coke produced,	3, 117, 958
Number of tons of coal shipped,	962, 244
Number of persons employed inside,	6, 450
Number of persons employed outside,	3, 911
Total number of persons employed,	10, 361
Number of coke ovens reported,	10, 981
Number of fatal accidents,	23
Number of non-fatal accidents,	60
Number of wives made widows by above fatalities,	19
Number of orphans from same cause,	37
Number of tons of coal produced per life lost,	320, 004
Number of persons employed per life lost,	280
Number of persons employed per non-fatal injury,	107
Number of days worked,	18, 369

All of which is respectfully submitted.

WILLIAM DUNCAN,
Inspector of Mines.

H. C. FRICK COKE COMPANY'S MINES.

Adelaide Mine.—Shaft opening located on the P. McK. & Y. R. R. I always find this mine in good condition. November 4 I measured a volume of 152,950 cubic feet of air per minute circulating, and it was well distributed through the working places. The drainage is almost perfect as all the water passes through into the Trotter mine with which it is connected. The rope haulage has been extended and numerous masonry brattices built during the year. Mining-boss, Thomas Harris.

Davidson Shaft and Plumer Mine.—Both located on the P. S. W. R. R., near Connellsville, Pa.

These workings are connected, but each mine is ventilated separately. They are both in good condition, Plumer having a volume of 53,300 cubic feet of air per minute in circulation. The drainage in these mines is excellent.

Henry Clay.—This mine is ventilated by a 12-foot suction fan, but there is a new shaft being sunk to connect with the dip workings, and as soon as it is completed the fan will be placed there as a blower, as it has been demonstrated that the blowing fan gives the best results in this region. This mine is in good condition, both as to ventilation and drainage. July 12, I measured 30,240 cubic feet per minute at inlet, and found it well distributed.

Kyle Mine.—Fan ventilation. On August 1, I measured in face heading a volume of 26,320 cubic feet of air per minute in circulation. The general condition of the mine is good. Mining-boss, J. W. Reckard.

Leith Mine.—Shaft opening. Ventilated by a 20-foot Guibal fan. A new rope haulage has been placed in the dip workings. I visited this mine four times during the year, and on my last visit, November 1, I found 234,400 cubic feet of air at the inlet and 72,000 cubic feet in the dip split. This air is well distributed throughout the workings. Mining-boss, Thomas Hooper.

Leisenring No. 1.—Shaft opening. Ventilated by a 20-foot Guibal fan, which gave on the date of my last visit, 146,270 cubic feet of air, which was well distributed throughout the entire workings. The drainage of this mine is accomplished by means of compressed air pumps. The general condition is good. The average number of persons employed inside the mine is 214. The workings about the bottom of the shaft are lighted by electricity. Mining-boss, Charles Walters.

Leisenring Shaft No. 2.—This mine is also ventilated by a 20-foot Guibal fan. On my last visit I measured 153,750 cubic feet of air in circulation, throughout the working places. This air is well distributed. The general condition of the mine is good. Mining-boss, Bernard Callaghan.

Leisenring Shaft No. 3.—Ventilated by a 25-foot Guibal fan, which gives ample ventilation throughout all the working places. The average number of persons employed inside is about 200. The condition of the mine is good in all respects. Mining-boss, Walter O'Malley.

Morgan Mine.—Drift opening. The coal of this mine is almost exhausted, and they are now engaged in drawing ribs. The total number of persons employed is 14. The condition of the mine is good. Mining-boss, Terrence Donnelly.

Oliphant Mine.—Located at Oliphant station on the P. S. W. R R. This mine has been much improved during the year by boring two 14″ holes to carry the water out of the mine. A 10″ pipe is placed in each hole, and the space around the pipes filled with cement. The holes are 46 feet apart and between them is a pump room 20′×30′, in which are set three Cameron pumps, Nos. 12, 11, 10. The use of steam in this mine has been discontinued, the pumps now being run by compressed air. A pair of air compressors 24″×26″×48″ were put in operation. The mine is in good condition. Mining-boss, John Harris.

Plumer Mine.—Connected with Davidson shaft, but ventilated by a separate fan 12′ in diameter which produced, October 13, 53,300 cubic feet of air. This air is well conducted throughout the workings. The mine is in good condition. Mining-boss, George Roebuck.

Rist Mine.—Slope opening. Connected with the Henry Clay mine. Ventilated by a fan which gave on July 11, 56,480 cubic feet of air. The mine is in good condition in all respects. Mining boss, Charles Wingenwroth.

Sterling Mine No. 1.—Drift opening. Fan ventilation. This mine is in good condition, both as to ventilation and drainage. Mining-boss, David P. Brown.

Sterling Mine No. 2.—Drift opening and rope haulage. Fan ventilation. On November 3, I measured 73,920 cubit feet of air at outlet and inlet which was well distributed throughout the mine. This mine is in good condition. Mining-boss, J. W. Patterson.

Summit and Eagle Nos. 1, 2 and 3—Drift Openings. All ventilated by one fan. Average number of persons employed inside about 69. The condition of these mines is good both as to ventilation and drainage. Mining-boss, Edward Mooney.

Tip Top Mine.—Drift opening. Idle during the entire year.

Trotter Mine.—Shaft opening. Worked on the double entry system. The ventilation has been much improved during the year by splitting the air into four currents by means of masonry overcasts. There were also built during the year forty masonry stoppings, between the intake and outlet air-currents.

On September 27, the total volume of air circulating in the four splits was 152,160 cubic feet. The general condition of the mine is excellent. Mining-boss, W. J. Callaghan.

Valley Mine.—Drift opening. Fan ventilation. On July 22, I measured 57,120 cubic feet of air in circulation. The mine is in good condition both as to ventilation and drainage. Mining-boss, James Jackson.

White Mine.—Drift opening and fan ventilation. Worked about six months during the year. On October 24, I measured 60,480 cubic feet of air at outlet. Drainage and hauling roads good. Mining boss, John Stevenson.

Wynn Mine.—Slope opening. Fan ventilation. The last measurement of air showed 39,400 cubic feet in circulation. Average number of persons employed about forty. Condition of mine good. Mining-boss, J. M. Franklin.

Youngstown Mine.—Owned and operated by the Youngstown Coke Company, but under the general management of the H. C. Frick Coke Company. On my last visit, October 1st, there was a total volume of 70,680 cubic feet of air in circulation in the three splits. The general condition of the mine is good. Mining-boss, John Walters.

Redstone Mine.—Owned and operated by the Redstone Coke Company, but under the same general management as the above mine. The drainage and ventilation are good. Mining-boss, Elijah Parker.

McCLURE COKE COMPANY'S MINES.

Coal Brook Mine.—Drift opening with natural ventilation. At the time of my last visit it was in very good condition, but has only worked three months during the year.

Diamond Mine.—Idle during the entire year.

Lemont Mine No. 1.—Slope opening with fan ventilation. On August 15 I measured a volume of 45,990 cubic feet of air in circulation. The general condition of the mine was good.

Lemont Mine No. 2.—This is a large mine, operated on the double heading system; ventilated by split air currents. The condition of the mine is good in all respects.

Painter Mine.—This is one of the best ventilated mines in the district, and is always kept in good condition. My last measurement showed a volume of 50,400 cubic feet of air in circulation.

MINES IN GENERAL.

Atlas Mine.—Operated by Isaac Taylor, lessee. This mine has been much improved during the year by driving a heading to connect with the Mahoning mine, which is used for draining said mine, and also for a traveling way for the men employed in Atlas mine. A large Yough pump, 14″×32″×48″ has been placed in this mine, which pumps the water from both mines through a 14″ bore hole to the surface. The main haulage-way has been much improved by taking out all the timber and ripping down the loose roof for a distance of 200 feet. The mine is now in good condition. Mining-boss, Charles Trew.

Anchor Mine.—Owned and operated by Dillinger, Donahoe & Co. The solid coal of this mine has been entirely exhausted, and they are now engaged on the rib workings. For an old mine it is in very fair condition. Mining-boss, John Mathison.

Banning Mine. Located on the Pittsburg, McKeesport and Youghiogheny railroad; owned and operated by the Morgan Moore & Bane Company.

The improvements that were in progress at the date of my last report have been completed, and it is now one of the best equipped mines in the district. It is opened with three parallel headings driven to the dip of the coal, one of which is used for a traveling-way, one for main haulage-way, and one for pipes and return air-way. All the rest of the workings are on the double-entry system. The tail-rope haulage has been adopted, and a pair of No. 7 engines, 16″×24″, with friction gear and double drums. The main hauling line is $\frac{7}{8}$″ and tail line $\frac{3}{4}$″ wire rope. The grade is 4% and the average load 40 cars of 4,000 pounds each. The tipple is fitted with a Mitchell dump, which works very satisfactorily, as they have loaded six large gondolas in forty minutes. The ventilation is produced by a good-sized fan, built by the Buffalo Forge Company, which is capable of producing 63,000 cubic feet per minute. The mine is drained by a Yough steam pump, 8″×16″×24″. The sanitary condition of the mine is good. Mine-boss, William Goldsboro.

Baltimore and Ohio Mine.—Located in Connellsville. The product of this mine is all consumed by the B. and O. R. R. The condition of the mine is fair in all respects.

Berlin Mine.—Located near the town of Berlin, on the B. and O. R. R. Operated by John O. Stoner. The mine is ventilated by a small furnace and is in fair condition.

Chester Mine.—Owned by E. A. Humphries & Co. Ventilated by means of heat radiated from steam pipes and consequently is not in a very satisfactory condition, but they are driving a heading through to the surface which I think will improve it. During the year they erected six new ovens making a total of forty. Also placed a pair of flue boilers twenty-eight feet long and forty inches in diameter.

Cumberland and Elk Lick Mine.—Owned and operated by the Cumberland and Elk Lick Coal Company. The furnace ventilation is becoming too weak owing its great distance from the workings. I have recommended them either to erect a fan or furnace, but consider that the fan would be the cheaper and more effective as the mine will soon require rope haulage.

Cumberland and Elk Lick Grassy Run Mine.—The last pillars of this mine are now being drawn with a view of abandoning it, owing to the deranged condition of the strata. The mine is in fair condition considering its natural disadvantages.

Cora Mine.—Exhausted and permanently abandoned, April 16, 1892.

Cassellman Mine.—Owned by Cassellman Coal Company. This mine is in a very unsatisfactory condition, owing to the fact that the aircourses are flooded with water. Consequently the ventilation is very poor; but the superintendent has agreed to erect a fan as soon as possible; also to increase the pumping capacity to drain the mine.

Cochrane Mine.—This mine will soon be exhausted as they are now engaged in drawing the ribs and pillars. On the date of my last visit, September 23, the mine was in fair condition.

Clarissa Mine.—Owned by James Cochran, Sons & Co. Drift opening and natural ventilation, but owing to the headings being driven through to the surface the ventilation is usually very fair.

Cal. T. Hay Mine.—Drift opening. On my last visit the mine was in fair condition, both as to ventilation and drainage.

Cumberland and Summit Nos. 1 and 2.—Operated by the Cumberland and Summit Coal Company. On the date of my last visit, September 22, the ventilation was in a very unsatisfactory condition. In the large mine I measured a volume of only 4,900 cubic feet of air per minute, and in the small mine I could get no result at all with the instrument. The superintendent, Fred Rowe, promised to have the matter remedied at once.

Dexter Mine.—This mine has been somewhat improved during the year by putting in new drains, and in the ventilation, by connecting it with the Fountain mine. On the date of my last visit, November 29, I measured a volume of 21,140 cubic feet of air which was well distributed. The mine is in fair condition.

Elm Grove Mine.—The condition of this mine has been considerably improved by putting in a fan and sinking an air shaft. At the time of my last visit it was in very fair condition.

Edna or Ursina Mine.—Owned and operated by the Connellsville and Ursina Coal and Coke Company. On the date of my last visit was in very fair condition.

Franklin Mine.—This mine is in very good condition. On July 25, there was 25,760 cubic feet of air in circulation. The law is obeyed in all respects.

Fort Hill Mine.—Owned by W. J. Rainey. Natural ventilation. This mine is in fair condition in all respects.

Flog Hill and Fairview Mines.—These mines are joined together and are under one general management. The drainage is fair but the ventilation is not good as there is nothing but the natural forces to produce it.

Fairchance Mine.—Owned and operated by the Fairchance Furnace Company. Slope opening. The ventilation and drainage in the mine is not good owing to the light covering over the coal constantly breaking letting in the surface water and deranging the air currents.

Grindstone Shaft.—This mine generates a considerable quantity of fire-damp, and I have advised its being worked entirely with safety lamps. If any accident should occur to the ventilating machinery there would be great danger of an explosion before the men could be gotten, out as the majority of the miners work with open lights. On July 27, I measured a volume of 40,000 cubic feet of air at the inlet, which was fairly well distributed throughout the workings.

Grace Mine.—Owned by W. J. Rainey. Located on the P. S. W. R. R. at Moyer station. A new rope haulage, 5,000 feet long, has been put into this mine during the year, and the general condition considerably improved. On Aug. 29, I measured a volume of 78,720 cubic feet of air at inlet, which was well distributed throughout the workings. The condition of the mine was good in all respects.

Great Bluff Mine.—Owned by E. A. Humphries & Co. Drift opening with natural ventilation which is not at all times satisfactory.

Grassy Run Mine.—Owned and operated by the Grassy Run Coal Company. At the time of my last visit, there was a volume of only 5.865 cubic feet of air in circulation, but since that time an air shaft has been sunk which increased the air to about 8,000 cubic feet per minute. General condition of the mine very fair.

Hill Farm Mine.—This ill-fated mine was restored to the rank of a producer, April 19, 1892, after being idle for one year and ten months. It commenced producing coal just six days after the last bodies were recovered and is now producing more coal than it ever did. There are now ninety-three persons employed inside.

On September 30, I measured a volume of 12,495 cubic feet of air in circulation which is not enough for the present condition of the mine. Attached hereto is a list of the unfortunate miners and a description of how they were identified.

OFFICE OF THE DUNBAR FURNACE COMPANY,
DUNBAR, FAYETTE CO., PA., *March 26, 1892.*

MR. WILLIAM DUNCAN, *Mine Inspector:*

DEAR SIR: Enclosed please find list giving names of men whose bodies were recovered from the Hill Farm on 24th inst., together with details of identification. Thanking you for your kind courtesy throughout this trouble, I am,

Very truly yours,

FRANK A. HILL,
Superintendent.

NAMES OF MINERS WHO WERE ENTOMBED AT THE HILL FARM MINE JUNE 16, 1890, AND RECOVERED MARCH 24 AND APRIL 13, 1892, TOGETHER WITH DETAILS OF IDENTIFICATION, ETC.

No. 1. John Cope; had cap, dinner bucket with pit lamp on handle; German paper in pocket on which the German text was plainly readable; he was identified by Hugh Doran and Robert Lang; he lay face down.

No. 2. Andrew Cope; body of tall boy or young man, lay face up; safety lamp under hip; bucket on left side; wore cap with tin and wire lamp holder; pipe and tobacco found in pockets, identified by cap.

No. 3. Elmer Dewey; lay face down; safety lamp under neck; lid of bucket under him; shirt thrown over face and head; identified by wearing his socks outside of pants.

No. 4. David Davis; dinner bucket under hips; second dinner bucket under him; cap which was one of his own make; fully identified by Hugh Doran, Frank Maloy and George Brady.

No. 5. Thomas Davis; safety lamp under left shoulder; had coat off; wore short knee pants; cap with leather lamp holder; clearly identified by his pants.

No. 6. John Devanney (boy); safety lamp near left hand; buckled shoes; cap made of ticking and home-made; identified by size and cap.

No. 7. John Devanney (man); large man; safety lamp under thigh; wore strong leather belt; big shoes well worn; mustache; barred flannel shirt; identified by shirt.

No. 8. Daniel Smith; lay face down; safety lamp under abdomen; also pit lamp; wore cap; small leather belt; carried check no 45 in hip pocket; identified by check.

No. 9. John X. Joye; lace shoes with leather laces; cap; no lamp; check 32 in pocket; silver open face watch in coat pocket; identified by check and watch.

No. 10. James McCleary; mustache and sharp chin beard; blue flannel shirt; safety lamp under right leg; pit lamp in coat pocket; wore right shoe on left foot and left shoe on right foot; identified by shoes, form and beard, by his son Walter.

No. 11. John Mitchell; remains of heavy mustache on one side; wore new shoes with hobnails; identified from general appearance by his brother.

No. 12. Pat. Courtney; buckled shoe; gray checked flannel shirt; belt made of tape fuse; oil bottle in inside pocket of coat; cap with pit lamp; identified by shirt and belt.

No. 13. John Courtney; gray checked flannel shirt same material as found on No. 12; tape fuse belt same as No. 12; safety lamp in pocket; woolen right hand mitten in pocket; check No. 35; identified by check, belt and shirt.

No. 14. Robert McGuill; leather belt; brier pipe; high laced shoes; identified by his shoes by his father.

No. 15. Thomas McCleary; cap; belt made from part of a shawl strap; check No. 23 in pocket; identified as Themas McCleary by check.

No. 16. Pat. Devlin; short shirt; custom made vest buttoning high to neck; stone pipe; two scapulars is right hand pants pocket; identified by Robert Bevil who worked with him, and James Joye, his brother-in-law.

No. 17. James Shearin; safety lamp under him; check No. 2 in pocket; identified by check, further identified by his brother Thomas Shearin.

No. 18. Pat. Cahill; pulley belt from sewing machine used for waist belt; bucket, check No. 17 in pocket; identified by check.

No. 19. Martin Cavanaugh; large man, full chin and side beard; rope belt; identified by beard.

No. 20. John Kiernan; oil bottle in pocket; narrow leather belt; coat off; pit lamp in pocket; check No. 3 in pocket; identified by check.

No. 21. Daniel McCashion; cap with tin lamp holder; mustache large wooden pipe with bone mouth-piece; buckled shoes; long shirt; merino drawers; rope belt with peculiar manner of fastening; identified by drawers, belt and shirt by Robert Bevil, his brother-in-law.

No. 22. William Cahill; large check heavy coat; oil bottle in pocket; clay pipe and match box in pocket; identified by coat and general appearance by William Lang, Hugh Doran, Frank Maloy and Thomas Kelly.

No. 23. Richard Bigley; mustache; hair immediately over forehead very long; tobacco and paper in pocket, buckled shoes; coat off; large tear in side of coat which had been sewed; several holes in sleeves; identified by his brother John; also identified by John McGuill, Sr.

NAMES OF THE SIX REMAINING MINERS WHOSE BODIES WERE RECOVERED APRIL 13, 1892.

No. 24. Bernard Maust; found on slope 31 feet above dump and 55 feet below overcast; head towards right side of slope; body found between remains of trip of wagons and rib of slope at second wagon, in very poor condition; check 29 in pocket; fine set of regular front teeth; short foot, about No. 6 shoe; woolen socks, very strong, seemingly home knit; shoes with leather string; diagonal coat; leather strap for belt; identified by check; body found 10 a. m. April 4, 1892.

No. 25. Joseph Bigley; found on left hand flat 50 feet from rib of slope; head between third and fourth wagons; left arm over safety-chain; body between tracks of lay off; one hand broken off lying on top of third car near center of front end; a small piece of cloth from coat on left corner of front end of car; match box, cane pipe stem, and part of paper of Five Brothers tobacco in coat pocket; two small pick wedges in small pocket of coat; heavy leather belt strap, buckled shoes, large foot, heavy knitted socks, canton flannel drawers; home made drawer string on right leg broken; left leg tied and leg of drawers inside of stocking; overall pants; no heel on left shoe; loose shirt wrapped around neck and sleeves tied; one of finger nails split lengthwise through the center. Found 6 a. m. Sunday, April 10, 1892, and identified by clothing and finger nail.

No. 26. Peter Eagen; sitting with back against horse-back at hole twelve feet from face of heading; jean pants, very strong, seemed new, turned up at bottom; flannel drawers, upper button black, lower button white; drawers apparently home-made, no string; knitted stockings; new shoes, hob-nailed, leather strings; stone pipe with cane stem in left hand pocket; small oil can on belt, left hand side; flannel shirt, at bottom of opening in front lapped over and sewed, short half sleeves, end of sleeve hemmed; remains of mustache; belt short from having been broken and joined together with a leather shoe string; watch found in small pocket of pants; identified by watch. Body found 3 p. m. Tuesday, April 12.

No. 27. James McCune; lying with face down, head against horse-back at edge of same hole; flannel shirt, short sleeves hemmed, small buttons on front; leather belt; cloth pants well made; merino drawers, very long, worn inside of stockings and reaching down into shoes; heavy belt on drawers; large white button very tightly sewed on belt; short knitted socks; buckled shoes worn on soles towards inside at toe, and both patched. Coat found under him made of fine diagonal cloth, cloth buttons; sack coat bound around collar and edges, tobacco in both pockets; clay pipe, small pit lamp, canvas cap with tin lamp holder, small, long, narrow-plated match box, mustache, thick hair. Identified by clothing; body found 3 p. m. April 12, 1892.

No. 28. William Hayes; wore gum boots; no marks above waist; corded cloth belt with leather ends; jean pants; heavy drawers, with large white buttons; prominent upper front teeth; small tooth next to eye tooth set back; eye tooth forward; check No. 33 in hip pocket; identified by boots. Found 3 p. m. April 12, 1892.

No. 29. Milton Turney; lying partially in ditch on flat heading, opposite man-way; body on right side; heavy shirt with short sleeves cut off, not hemmed; big patch on left side of shirt, another patch on back; sack coat, cloth buttons; seven checks in coat pocket; check No. 27; string tied around left wrist; suspender belt, coat double stitched for binding, stone pipe, cane stem, woolen stockings, lace shoes very little worn, thick head of hair. Identified by checks; body found 3 p. m. April 12, 1892.

Jackson Mine.—Owned by the Jackson Mines Company. On November 22 I measured a volume of 12,210 cubic feet of air in circulation. The condition of the mine is fair.

Juniata Mine.—Owned by the Juniata Coke Company, and located on a branch of the B. and O. R. R.; worked on the double-entry system; fan ventilation with split air currents. On August 22 the volume of air at the inlet was 74,880 cubic feet, which was well distributed throughout all the workings. The mine is in very good condition.

Keystone Mine.—Idle during the entire year.

Lynn or Hanna Mine.—Natural ventilation, which is very deficient. On the date of my last visit, September 9, there was only 5,040 cubic feet of air in circulation, and it was not well carried forward to the face of the workings on account of the mines being worked on the old single heading system. The mine-boss promised to have it remedied as soon as possible, by sinking a new air shaft.

Langhead Mine.—Owned and operated by the Martin Coke Company. Drift opening; natural ventilation. A new slope is being opened at this mine with a view of putting in rope haulage. Condition of mine very fair. Mining-boss, Henry M. Wilson.

Mt. Braddock Mine.—The ventilation of this mine is very poor, but I understand that a fan has been purchased which will be placed in position soon. The general condition of the mine is poor.

Morrell Mine.—Slope opening; worked on the double-entry system; ventilation and drainage good. A new Yough pump, 14″×32″×48″, has been placed in this mine during the year. The workings are kept in a safe and healthful condition.

Mahoning Mine.—This mine has been very much improved during the year by placing a new pair of hoisting engines 16″×30″ in direct line with the slope. The slope has been regraded, all the old timbers having been taken out and all loose rock taken down. A new traveling way has been driven to connect with the Atlas mine, thus forming an additional way of escape for both mines. A new shaft has been sunk to the

small seam of coal over the large one, and the coal in it is being mined for the purpose of generating steam for running the pumps. The mine is in very fair condition.

Nellie Mine.—Located on the Dickerson Run branch of the P., McK. and Y. R. R. The ventilation of this mine has been much improved by sinking a new air shaft and removing the fan out of range of the smoke coming from the ovens. On November 7, I measured a volume of 76,280 cubic feet of air near the fan inlet which was well distributed. A new slope opening has been made which affords much better facilities for access to the mine, and also a much better escape way for persons employed therein. General condition of the mine as to ventilation and drainage good.

Oliver Mines.—These mines have been operated very extensively and successfully during the year. They are ventilated by two fans, one 10′ and the other 12′ in diameter; and when both are in operation they produce a volume of 114,000 cubic feet of air which is well distributed. The workings are generally in good condition.

Pennsville Mine.—Slope opening with fan ventilation. On the date of my last visit, November 9, I measured a volume of 8,960 cubic feet of air in Butt No. 2, while at the inlet the fan was producing 27,500 cubic feet, showing that the air was escaping and not being conducted into the workings. This has since been remedied and the mine is now in fair condition.

Percy Mine.—The ventilation of this mine is at all times good but the drainage is rather imperfect owing to the irregularity of the dips. The sanitary condition of the mine is good.

Paul Mine.—This mine has been very much improved by the opening of a new slope on the three heading system. A new fan has been erected by Kenny & Co., of Scottdale, which gave, August 18, a volume of 123,750 cubic feet of air per minute which was well distributed throughout the mine. The mine is now in very fair condition.

Stewart Mine No. 1.—A new traveling way has been opened into this mine from the surface making it much easier and safer to get into. There have been some very substantial masonry overcasts erected to avoid the use of doors in directing the air currents. The mine is in excellent condition and the provisions of the mine law fully complied with.

Scottdale Iron and Steel Company.—This mine is in very fair condition in all respects having an average ventilation of 44,000 cubic feet of air per minute which is well carried forward.

Spring Grove Mine.—Drift opening with natural ventilation, which is not at all times very satisfactory. In all other respects the mine is in very fair condition.

Statler and Standard Mines.—Drift openings with natural ventilation which, on my last visit, was not good, but they were driving a heading

for the purpose of improving it. The mine was in fair condition as to drainage.

Snider Mine.—This is a small opening, located on the National pike west of Uniontown. The production is consumed by local trade. The sanitary condition at my last visit was fair.

Smock or Union Mine.—Heretofore this mine has been in very good condition, but the extended workings require some better means of ventilation, as the present furnace is too small.

Thomas Mine.—The opening of this mine has been retimbered and a good "T" iron track laid. The ventilation is fair but the drainage continues unsatisfactory.

Tub Mill Run Mine.—Drift opening with natural ventilation, which is not very satisfactory, but in all other respects the condition of the mine is fair.

Tyrone Mine.—Drift opening. This mine is always kept in good condition. On November 22, the volume of air in circulation was 36,400 cubic feet, which was well distributed. All the provisions of the mining law are complied with.

Uniondale Mine.—This mine will soon be exhausted, as they are now engaged in drawing the pillars. The ventilation and drainage is fair. On July 28, the volume of air in circulation was 56,700 cubic feet.

Whitsett or Rainbow Mine.—A new rope haulage has been placed in this mine. The ventilation and drainage is not very good. Since my last visit, the mine has been sold to Osborne, Sager & Co., who, I hope, will place it in a better condition.

Wheeler Mine.—Owned by the Cambria Iron Co., but operated by Isaac Taylor, lessee. On October 14, my measurement showed a volume of 43,200 cubic feet of air in circulation. The condition of the mine was fair.

TABLE 1.—*Showing location of collieries in the Fifth Bituminous Mine District.*

NAME OF COLLIERY	Name of Operator	Location—County.	Name of Superintendent.	Postoffice Address.
Adelaide	H. C. Frick Coke Company	Fayette	R. O. Thomas	Broadford.
Atlas	Isaac Taylor, Lessee	do.	John Dilworth	Dunbar.
Anchor	Dillinger, Donahoe & Co.	do.	James Henderson	do.
Berlin	B. D. Morgan & Co.	Somerset	C. J. Baker	Berlin.
Buffalo	Buffalo Coal and Coke Company	do.	W. F. Childs	Meyersdale.
Baltimore and Ohio	William P. Stillwagon & Co.	Fayette	Clair Stillwagon	Connellsville.
Banning	Morgan, Moore & Baine Co.	do.	J. Baysinger	Whittsett.
C. & E. L. Grassy Run	Cumberland and Elk Lick Coal Company	Somerset	A. Chamberlin	Myersdale
Clinton	H. C. Frick Coke Company	Fayette	James Lynch	Scottdale.
Coal Brook	McClure Coke Company	do.	J. P. Brennen	do.
Clarissa	James Cochran Sons & Co.	do.	P. G. Cochran	Vanderbilt.
Cora	J. S. Newmyer & Sons	do.	J. S. Newmyer	Dawson.
Casselman	Casselman Coal Company	Somerset	Wm. G. Hocking	Meyersdale.
C. & E. L. Coal Company	C. & E. L. Coal Company	do.	A. Chamberlin	do.
Cal. T. Hay	Cal. T. Hay	do.	Cal. T. Hay	Elk Lick.
Cumberland No. 1	Cumberland and Summit Coal Company	do.	Fred. Rowe	Meyersdale.
Cumberland No. 2	do. do. do.	do.	do.	do.
Chester	E. A. Humphries & Co.	Fayette	R. J. Humphries	Uniontown.
Davidson shaft	H. C. Frick Coke Company	do.	J. I. Munson	Connellsvill
Diamond	McClure Coke Company	do.	James Caller	Scottdale.
Dexter	Joseph R. Stauffer & Co.	do.	Sam. R. Fairchilds	do.
Edna	Connellsville and Ursina Coal and Coke Company	Somerset	E. H. Reid	do.
Elm Grove	W. T. Rainey	Fayette	Chris. Echard	Juniataville.
Fountain	E. A. Humphries	do.	E. A. Humphries	do.
Franklin	B. F. Keister	do.	B. F. Keister	Summit Mines.
Fort Hill	W. J. Rainey	do.	T. J. Mitchell	Vanderbilt
Fairchance	Fairchance Furnace Company	do.	R. L. Martin	P. O. Box 587. Pittsburg.
Ferguson	Dunbar Furnace Company	do.	Frank A. Hill	Dunbar.
Fair View	Fair View Coal Company	Somerset	Thomas Rees	Meyersdale.
Flog Hill	do. do.	do.	do.	do.
Grace	W. J. Rainey	Fayette	Thomas Johns	Moyer.
Grindstone shaft	Redstone Oil, Coal and Coke Company	do	James F. Cook	Grindstone.
Great Bluff	E. A. Humphries & Co	do.	A. E. Humphries	Dunbar
Grassy Run	Grassy Run Coal Company	Somerset	John Meager	Elk Lick.
Henry Clay	H. C. Frick Coke Company	Fayette	W. C. Mullan	Broadford.
Hill Farm	Dunbar Furnace Company	do.	Frank A. Hill	Dunbar.
Home	Stauffer & Willey	do.	J. S. Wiley	Everson.
Hamilton	Hamilton Cochrane	Somerset	Archie Cochrane	Elk Lick.
Hocking	Chapman Hocking Coal Company	do.	John T. Hocking	Meyersdale.
Junction	Abandoned	Fayette.		
Juniata	Juniata Coke Company	do.	P. G. Cochran	Dawson.
Jackson	Jackson Mines Company	do.	do.	do.
Kyle	H. C. Frick Coke Company	do.	J. S. Atkinson	Oliphant Furnace.
Keystone	Keystone Coke Company	Somerset	E. J. Wells	Meyersdale.
Leith	H. C. Frick Coke Company	Fayette	Harry Whyel	Uniontown.
Langhead	Martin Coke Company	do.	L. S. McDowell	Fairchance.
Lemont No. 1	McClure Coke Company	do.	M. H. Kerr	Lemont Furnace.

Lemont No. 2.	do.	do.	do	do.
Leisenring No. 1.	H. C. Frick Coke Company.	do.	John A. Esser.	Rogerstown.
Leisenring No. 2.	do. do.	do.	R. A. Slater.	West Leisenring.
Leisenring No. 3.	do. do.	do.	Austin King.	Rogerstown.
Lynn.	Hanna Bros.,	do.	John Stratham.	West Brownsville.
Morrell.	Isaac Taylor, Lessee.	do.	Andrew L. Nelson.	Connellsville.
Mahoning.	do.	do.	John Dilworth.	Dunbar.
Mt. Braddock.	R. Hogsett & Co.,	do.	Fuller Hogsett.	Uniontown.
Morgan.	H. C. Frick Coke Company.	do.	W. C. Mullan.	Broadford.
Nellie.	Brown & Cochran.	do.	J. R. Layghrey.	Dawson.
Oliphant.	H. C. Frick Coke Company.	do.	Charles Jones.	Oliphant Furnace.
Oliver.	Oliver Coke and Furnace Company.	do.	F. C. Keigley.	Uniontown.
Painter.	McClure Coke Company.	do.	James Caller.	Scottdale.
Pennsville.	Pennsville Coke Company.	do.	John D. Sherrick.	Pennsville.
Percy.	Percy Mining Company.	do.	Louis de Saulles.	Uniontown.
Paul.	W. J. Rainey.	do.	T. J. Mitchell.	Vanderbilt.
Plumer.	H. C. Frick Coke Company.	do.	John I. Munson.	Connellsville.
Pine Hill	Sol. Coleman.	Somerset.	Sol. Coleman.	Pine Hill.
Redstone.	Redstone Coke Company, Limited.	Fayette.	Stephen E. Wadsworth.	Brownfield.
Rist.	H. C. Frick Coke Company.	do.	W. C. Mullan.	Broadford.
Rainbow.	Rainbow Coal and Coke Company.	do.	D. P. Whitsett.	Whitsett.
S. H. Steel Company.	S. I. and Steel Company, Limited.	do.	A. S. Livengood.	Everson.
Sterling No. 1.	H. C. Frick Coke Company.	do.	Milson Rosser.	Dawson.
Sterling No. 2.	do. do.	do.	do.	do.
Summit and Eagle.	do. do.	do.	C. J. Warnock.	Summit Mines.
Stewart.	Stewart Iron Company, Limited.	do.	F. C. Van Dusen.	Uniontown.
Stewart, hard coal.	do.	do.	do.	do.
Statler and Standard.	E. Statler.	Somerset.	E. Statler.	Elk Lick.
Snider.	Edward Snider.	Fayette.	Edward Snider.	Uniontown.
Smock.	J. D. Boyd & Co.,	do.	J. D. Boyd.	do.
Spring Grove	Brown & Coehrane.	do.	P. G. Cochrane.	Vanderbilt.
Tip Top.	H. C. Frick Coke Company.	do.	James Lyneh.	Scottdale.
Tyrone.	Laughlin & Co., Limited.	do.	Clifton Wharton.	Broadford.
Tub Mill Run.	Fair View Coal Company.	Somerset.	Thomas Rees.	Meyersdale.
Thomas.	Thomas Coal Company.	do.	Benjamin Thomas.	do.
Trotter.	H. C. Frick Coke Company.	Fayette.	John Sneddon.	Connellsville.
Uniondale.	Reid Bros.,	do.	Ross Reed.	Dunbar.
Valley.	H. C. Frick Coke Company.	do.	James Lynch.	Scottdale.
White.	do. do.	do.	W. C. Mullan.	Broadford.
Wynn.	do. do.	do.	J. S. Atkinson.	Oliphant Furnace.
Wheeler.	Isaac Taylor, Lessee.	do.	A. L. Nelson.	Connellsville.
Youngstown.	Youngstown Coke Company.	do.	F. M. Fox.	Lemont Furnace.
Moreland.	W. J. Rainey.	do.	T. J. Mitchel.	Vanderbilt.

TABLE NO. 2.—*Giving the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the Fifth Bituminous Mine District for the year ending December 31, 1892.*

NAMES OF COLLIERIES.	Location—County.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Adelaide	Fayette	259,500	173,000		271	329	1	4		3	16	1	342
Atlas	do.	33,181	20,625		150	86			15	4	4		80
Anchor	do.	72,642	51,850		296	102		1		4	6		99
Berlin	Somerset	3,939		2,815	240	10			40		2		
Buffalo	do.	6,817		6,817	90	41			40	1	3		
Baltimore and Ohio	Fayette	42,436		42,436	365	25				3	2		
Banning	do.	176,035		176,035	237	205		2	2,000	2	10		
C. E. L. Grassy Run	Somerset	18,152		18,152	167	26					2		
Clinton*	Fayette												
Coal Brook	do.	17,569	11,713		90	54				1	3		70
Clarissa	do.	79,854	52,292	1,416	261	79					5		108
Cora	do.	6,061	4,040		98	24				1	2		42
Casselman	Somerset	65,000		65,000	290	68			600		5		
C. & E. L. Coal Co.	do.	90,119	10,945	75,317	250	112		5			8		75
Cal. T. Hay	do.												
Cumberland No. 1	do.	26,755		26,755	216	47			300		4		10
Cumberland No. 2	do.	10,377	800	10,377	216	12			180		1		
Chester	Fayette	31,049	22,990		264	42				2	3		40
Davidson shaft	do.	128,400	130,300		243	193		1		7	11	2	330
Diamond†	do.												66
Dexter	do.	15,295	11,294		218	17		1	30	1	2		40
Edna†	Somerset												30
Elm Grove	Fayette	44,500	30,000		280	66	1			2	4		62
Fountain†	do.												87
Franklin	do.	34,034	22,689		309	36			150	1	3		50
Fort Hill	do.	19,450	13,000		200	83					2		50
Fairchance	do.	111,031	72,385	4,861	308	180	1	1			7	1	141

Ferguson	do.	69,263	37,223		295	77				5	5		70
Fair View	Somerset	41,400		41,400	268	49			482		4		
Flog Hill	do.	54,960		54,960	268	64			682		5		
Grace	Fayette	251,347	167,565		275	285	2		50	8	18		410
Grindstone	do.	63,414	9,879	60,765	183	130	1	2	275	3	6		31
Great Bluff	do.	14,078	11,222		306	15				1	2		16
Grassy Run	Somerset	18,749		18,749	183	32			300		2		
Henry Clay	Fayette	101,400	67,600		263	128			1	6	10		120
Hill Farm	do.	68,771	44,288		202	158				7	5		150
Home	do.												20
Hamilton	Somerset												
Hocking	do.	63,000		63,000	243	71		1	400		4		
Junction,†	Fayette												
Juniata	do.	193,932	128,774	871	269	230				2	11		250
Jackson	do.	37,270	24,851		292	46				1	4		64
Kyle	do.	63,600	42,400		251	86		1		2	4		165
Keystone,†	Somerset												
Leith	Fayette	195,150	130,100		258	270		1		8	24	1	284
Langhead	do.	44,834	30,171		308	61	1	2	14		3		50
Lemont No. 1	do.	142,443	94,962		277	194				6	12	2	227
Lemont No. 2	do.	194,106	129,404		273	305		4		6	18		300
Leisenring No. 1	do.	264,900	176,600		252	369	3	2		13	17		500
Leisenring No. 2	do.	211,500	141,000		230	349	1	9	100	10	14	2	500
Leisenring No. 3	do.	240,000	160,000		256	342		3	320	9	12	2	504
Lynn	do.	14,403		14,403	185	31			100		3		
Morrell	do.	367,637	245,091		311	417	1	3		10	23		400
Mahoning	do.	50,329	31,206		159	92			3	4	4		100
Mt. Braddock	do.	101,500	69,000		283	200		1		5	11		170
Morgan	do.	6,400	§		63	14					2		§
Nellie	do.	322,000	172,650	63,800	250	292	1	1		2	17		329
Oliphant	do.	88,500	59,000		245	122		1		4	8		128
Ollver	do.	175,769	117,895		300	352				6	16	1	300
Painter	do.	149,430	99,620		283	216				1	11	1	228
Pennsville	do.	61,530	51,879		306	78				3	3		92
Percy	do.					78				3	3		62
Paul	do.	200,000	135,000		300	399	2	2		7	16		384
Plummer	do.	67,000	‖		140	67			280	2	6		‖
Pine Hill,†	Somerset												
Redstone	Fayette	224,400	149,600		260	319	2	1	10	10	21	1	445
Rist	do.	143,500	100,000		265	162	1		2	4	9		367
Rainbow	do.	70,000		69,000	250	126		3	400	1	6		
Scottdale Iron and Steel Company	do.	¶26,422			290	25				1	2		
Sterling No. 1	do.	29,100	19,400		105	76			15	2	6		100
Sterling No. 2	do.	141,400	94,300		251	179		1	225	3	9		294
Summit and Eagle	do.	118,500	79,000		253	138		1		1	8		222
Stewart	do.	96,450	70,000		285	132				5	7		120
Stewart, hard coal,†	do.												
Statler and Standard	Somerset												
Snyder	Fayette	8,435		8,435	215	16					2		
Smocks	do.	63,064		63,064	251	66	1	1	300		6		
Spring Grove,**	do.												
Tip Top,†	do.												121
Tyrone	do.	111,075	77,285		310	101			360	2	5		144
Tub Mill Run	Somerset	55,922		55,922	268	57			691		4		
Thomas	do.	17,894		17,894	304	19					1		

*In with Valley. †Idle all year. ‡Worked out and abandoned. §Included in Rist. ‖Included in Davidson. ¶Consumed by rolling mill. **In with Nellie.

TABLE No. 2—*Continued.*

NAMES OF COLLIERIES.	Location. County.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Trotter	Fayette.	291,500	195,000		266	383	1	4	10	8	16		464
Uniondale	do.	43,689	31,975		280	79				4	3		74
Valley	do.	176,000	117,000		265	224		1		4	13		251
White	do.	50,400	33,600		158	145				1	4		200
Wynn	do.	41,100	25,400		187	74		1		3	3		70
Wheeler	do.	91,510	61,007		310	102	2	2		4	4		100
Youngstown	do.	107,500	71,700		298	210		2		6	14	1	240
Moreland	do.	221,429	150,000		300	275	1	6		4	14		220
Total		7,360,101	4,280,570	962,244	18,291	10,361	25	71	8,385	230	570	15	11,008

TABLE NO. 3—*Showing the number of each class of employes at each colliery in the Fifth Bituminous Mine District during the year 1892.*

NAMES OF COLLIERIES.	Location.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand totals—Inside and outside.
		Inside foreman or mine-boss.	Miners.	Miners' boys.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Cokers and yardmen.	All company men.	Superintendents book-keepers and clerks.	Total outside.	
Adlaide,	Fayette county,	1	140	8	12	16	6	183	1	4	6	110	23	2	146	329
Atlas,	do.	1	36	4	4	4	1	50	. . .	2	4	26	2	2	36	86
Anchor,	do.	1	42	1	7	6	. . .	57	. . .	1	3	39	2	. . .	45	102
Berlin,	Somerset county,	. . .	4	. . .	5	1	. . .	10	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10
Buffalo,	do.	1	26	. . .	1	4	. . .	32	. . .	. . .	2	. . .	. . .	. . .	2	34
Baltimore and Ohio,	Fayette county,	1	18	. . .	1	2	. . .	22	. . .	. . .	2	. . .	. . .	1	3	25
Banning,	do.	1	165	5	5	10	3	189	. . .	2	3	. . .	9	2	16	205
C. & E. L. Grassy Run,	Somerset county,	1	19	2	. . .	2	. . .	24	. . .	. . .	. . .	. . .	1	. . .	1	25
Clinton,*	Fayette county,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Coal Brook,	do.	1	24	. . .	1	3	. . .	29	. . .	. . .	1	. . .	18	5	25	54
Clarrissa,	do.	1	45	. . .	1	5	. . .	52	. . .	. . .	1	. . .	22	2	27	79
Cora,	do.	1	9	1	1	2	. . .	14	1	. . .	1	. . .	8	. . .	10	24
Casselman,	Somerset county,	1	45	7	5	5	2	65	. . .	. . .	1	1	. . .	. . .	3	68
C. & E. L. Coal Company,	do.	1	70	6	4	8	4	93	. . .	. . .	1	. . .	11	5	19	112
Cal. T. Hay,	do.	1	27	. . .	1	2	. . .	31	. . .	. . .	. . .	. . .	. . .	. . .	. . .	31
Cumberland No. 1,	do.	1	25	4	. . .	4	. . .	34	. . .	. . .	. . .	. . .	3	5	9	43
Cumberland No. 2,	do.	. . .	11	. . .	. . .	1	. . .	12	. . .	. . .	. . .	. . .	. . .	1	1	13
Chester,	Fayette county,	1	23	. . .	1	2	. . .	27	. . .	. . .	1	. . .	10	2	15	42
Davidson shaft,	do.	1	70	4	9	11	4	99	1	10	9	. . .	50	22	94	193
Diamond,*	do.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Dexter,	do.	. . .	9	. . .	. . .	2	. . .	11	. . .	. . .	. . .	. . .	6	. . .	7	18
Edna,*	Somerset county,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Elm Grove,	Fayette county,	1	30	1	3	4	. . .	39	. . .	3	3	. . .	17	1	27	66
Fountain,*	do.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Franklin,	do.	1	15	. . .	. . .	3	. . .	19	. . .	. . .	1	. . .	14	1	16	35
Fort Hill,	do.	. . .	17	. . .	. . .	2	. . .	19	. . .	. . .	. . .	. . .	60	4	64	83

* Idle all year.

TABLE NO. 3—*Continued.*

NAMES OF COLLIERIES.	Location.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand totals—inside and outside.
		Inside foreman or mine-boss.	Miners.	Miners' boys.	All company men.	Drivers and runners.	Doorboys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Cokers and yardmen.	All company men.	Superintendents book-keepers and clerks	Total outside.	
Fairchance.	Fayette county,	1	61	. . .	11	7	. . .	80	1	2	2	64	28	3	100	180
Ferguson.	do.	1	31	2	5	3	2	44	. . .	2	3	26	2	. . .	33	77
Fair View.	Somerset county,	1	32	6	1	4	. . .	44	. . .	1	. . .	. . .	3	1	5	49
Flog Hill.	do.	1	44	8	1	5	. . .	59	. . .	1	. . .	. . .	. . .	1	2	61
Grace.	Fayette county,	1	130	6	7	18	3	165	1	5	6	105	5	3	125	290
Grindstone shaft.	do.	1	70	. . .	20	6	3	100	. . .	2	5	11	10	2	30	130
Great Bluff.	do.	1	6	. . .	. . .	2	. . .	9	. . .	. . .	. . .	4	1	1	6	15
Grassy Run.	Somerset county,	1	24	1	1	2	. . .	29	. . .	. . .	. . .	. . .	2	1	3	32
Henry Clay.	Fayette county,	1	48	5	7	10	. . .	71	1	1	4	43	6	2	57	128
Hill Farm.	do.	1	69	. . .	13	5	5	93	. . .	3	5	53	2	2	65	158
Home.	do.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Hamilton.	Somerset county,	1	15	2	2	2	. . .	22	1	. . .	. . .	. . .	. . .	. . .	1	23
Hocking.	do.	1	56	2	. . .	4	1	64	. . .	. . .	. . .	. . .	5	2	7	71
Juniata.	Fayette county,	1	125	. . .	7	11	2	146	1	4	3	60	15	2	84	230
Jackson.	do.	1	20	. . .	2	4	. . .	27	. . .	1	. . .	12	5	1	19	46
Kyle.	do.	1	40	. . .	2	4	1	48	1	2	2	30	1	2	38	86
Keystone.*	Somerset county,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Leith.	Fayette county,	1	110	. . .	17	24	5	157	1	4	10	75	21	2	113	270
Lawhead.	do.	1	22	2	1	3	. . .	29	. . .	1	. . .	30	. . .	2	33	62
Lemont No. 1.	do.	1	85	4	8	12	7	117	1	5	7	50	14	. . .	77	194
Lemont No. 2.	do.	1	145	2	19	18	6	191	1	4	6	90	11	2	114	305
Leisenring No. 1.	do.	1	160	. . .	29	17	7	214	1	5	6	100	2	3	117	331
Leisenring No. 2.	do.	1	158	3	8	14	3	187	1	6	6	137	9	3	162	349
Leisenring No. 3.	do.	1	168	4	19	12	1	205	1	5	9	114	3	5	137	342
Lynn.	do.	1	20	3	3	3	. . .	30	. . .	. . .	. . .	. . .	. . .	1	1	31
Morrell.	do.	1	180	20	37	23	3	264	1	5	5	130	11	2	154	418
Mahoning.	do.	1	38	1	6	4	. . .	50	. . .	2	4	33	1	2	42	92
Moreland.	do.	1	150	4	17	14	2	188	1	6	4	70	5	1	87	275
Mt. Braddock.	do.	1	75	5	8	11	5	105	1	2	5	75	9	3	95	200
Morgan.†	do.	1	10	1	. . .	2	. . .	14	. . .	. . .	. . .	. . .	. . .	. . .	. . .	14

Nellie,	do.	1	160	...	11	17	6	195		4	4	75	9	4	97	292
Oliphant,	do.	1	53	...	3	8	1	66	...	3	4	46	2	1	56	122
Oliver,	do.	1	160	5	28	19	4	217	...	6	6	90	29	3	134	351
Painter,	do.	1	86	7	6	11	...	111	1	2	1	90	9	2	105	216
Pennsville,	do.	1	34	...	2	3	...	40	...	1	4	29	2	2	38	78
Percy,	do.	1	32	3	7	3	...	46	...	1	3	27	...	1	32	78
Paul,	do.	1	180	6	29	16	5	237	1	8	9	120	19	5	162	399
Plumer,‡	do.	1	50	6	2	6	2	67	...	...	...	...	...	...	...	67
Pine Hill,*	Somerset county,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Redstone,	Fayette county,	1	124	...	17	21	12	175	1	5	8	120	7	3	144	319
Rist,	do.	1	62	5	4	9	1	82	1	1	4	61	10	3	80	162
Rainbow,	do.	1	100	5	2	6	2	116	...	1	1	...	4	4	10	126
S. & I. & Steel Company,	do.	1	15	2	1	2	...	51	...	...	1	...	2	1	4	25
Sterling No. 1,	do.	1	35	2	2	6	...	46	1	1	1	21	4	2	30	76
Sterling No. 2,	do.	1	80	4	5	9	2	101	1	3	3	65	4	2	78	179
Summit and Eagle,	do.	1	52	4	4	8	...	69	1	1	...	59	7	1	69	138
Stewart,	do.	1	60	...	4	7	...	72	1	2	4	50	1	2	60	132
Steward Hard Coal,*	do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Statler and Standard,	Somerset county,	1	36	...	3	4	...	44	...	...	...	...	...	1	1	45
Snider,	Fayette county,	1	11	...	...	2	...	14	...	1	...	...	...	1	2	16
Smocks,	do.	1	48	...	3	6	...	58	1	...	...	...	4	3	8	66
Spring Grove,§	do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tip Top,*	do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tyrone,	do.	1	42	4	3	5	2	57	...	2	2	37	2	1	44	101
Tub Mill Run,	Somerset county,	1	36	8	1	4	1	51	...	1	...	...	4	1	6	57
Thomas,	do.	...	15	1	...	1	...	17	...	...	...	...	1	1	2	19
Trotter,	Fayette county,	1	160	5	16	16	9	207	...	5	5	157	6	3	176	383
Uniondale,	do.	1	34	...	4	3	2	44	...	1	2	29	1	2	35	79
Valley,	do.	1	93	8	4	13	7	126	1	2	3	78	12	2	98	224
White,	do.	1	59	4	5	9	...	78	1	2	1	54	8	1	67	145
Wynn,	do.	1	35	...	1	3	1	41	...	1	2	25	1	1	30	71
Wheeler,	do.	1	40	5	8	4	1	59	...	2	3	31	4	3	43	102
Youngstown,	do.	1	87	...	24	14	11	137	1	3	7	45	13	2	71	208
Total,		74	4,941	208	511	578	145	6,457	31	156	205	3,015	421	130	3,958	10,415

* Idle all year.
† In with Rist.
‡ In with Davidson.
§ In with Nellie.

TABLE NO. 4.—*List of fatal accidents which occurred in and about the mines of the Fifth Bituminous Mine District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 5.	Amos Woolery.	Miner.	33	S.	. .	Redstone.	Fayette.	These men were working together on No. 4 rib, and were instantly killed by fall of roof.
5.	Oliver Fouch.	do.	28	M.	2			
15.	Adam Saxon.	do.	44	M.	4	Rist.	do.	Instantly killed while in the act of drawing posts.
Mar. 17.	George Coder.	Rope rider.	30	M.	2	Paul.	do.	Killed by empty wagons attached to dilly rope jumping the track and passing over him.
Apr. 21.	John Deikhey.	Miner.	28	M.	. .	Smocks.	do.	Skull fractured by a fall of slate while drawing posts.
29.	Andy Stasko.	Driver.	27	M.	1	Leisenring No. 2.	do.	Crushed to death between wagon and rib.
May 27.	Martin Muronska.	Miner.	35	M.	3	Grace.	do.	These men had gone into an abandoned part of the mine, where they were found buried beneath a heavy fall of roof.
27.	Fritz Lamboch.	do.	29	M.	2			
June 14.	John Blasko.	do.	24	M.	. .	Nellie.	do.	Killed by fall of roof in rib workings.
30.	John Andrew.	do.	54	M.	1	Leisenring No. 1.	do.	Killed by fall of roof, while in the act of loading wagon.
July 2.	John R. Wilson.	do.	24	M.	1	Fairchance.	do.	This man disobeyed the orders given by the mine-boss, and left his own place, and going into another, he was instantly killed by fall of roof.
7.	John Hammond.	do.	44	M.	. .	Wheeler.	do.	Killed by fall of roof in rib workings. These men (father and son) failed to put their posts up, after being warned both by the mine-boss and superintendent.
7.	Geo. Hammond.	do.	21	S.	. .			
30.	Joseph Kanyak.	do.	28	M.	1	Redstone shaft.	do.	Instantly killed by fall of slate; the result of pure carelessness on his own part, he having been warned to take it down.
Aug. 8.	John Merwitz.	do.	35	M.	2	Leisenring No. 1.	do.	Killed by fall of roof; purely accidental.
Sept. 1.	Steve Estwannock.	do.	25	S.	. .	Moreland.	do.	Killed by fall of roof while in the act of drawing posts in rib workings.
17.	Steve Galetka.	do.	35	M.	1	Elm Grove.	do.	This man entered the mine very much intoxicated, and was run over by a trip of loaded wagons, which caused his death in about one hour.
Nov. 9.	Peter Plattick.	do.	34	M.	1	Leisenring No. 1.	do.	Killed in rib workings by going back to cut the stump after drawing his posts.
Dec. 5.	Steve Zovetchin.		17	S.	. .	Paul.	do.	Killed while attempting to jump on a trip when in motion.

10.	Louis Veecanzoni.	. . . . .	35	M.	3	Morrell.	. . . . .	do.	. . . . .	Instantly killed while in the act of knocking out posts in pillar workings.
10.	Donnot Voschick.	Driver.	36	M.	6	Trotter.		do.	. . . . .	Killed while trying to step on front end of trip when in motion; he missed his footing and fell under the moving cars.
21.	Sylvester McKibben.	Miner.	44	M.	3	Langhead.		do.	. . . . .	Instantly killed by fall of slate. This appears to have been an unavoidable accident, as he was considered a good, careful miner.
26.	Joseph Mortas.	do	33	M.	1	Adelaide.		do.	. . . . .	Killed by fall of roof coal and slate, while in the act of drawing posts in rib workings.

TABLE NO. 5.—*List of non-fatal accidents which occurred in and about the mines of the Fifth Bituminous Mine District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location County.	Nature and Cause of Accident
1891.								
Dec. 22.	John Nutt.	Miner.	34			Adelaide.	Fayette.	Hurt across the hips by being caught between the wagon and rib.
1892.								
Jan. 8	Charles Watson.	Driver.	22			do.	do.	One finger and a part of another cut off by wagon jumping the track and catching his hand between wagon and rib.
8.	John Hamlon.	do.	20			Davidson.	do.	Caught between post and wagon at bottom of shaft.
11.	Patrick Walch.	do.	22			Valley.	do.	Left ankle broken, head cut and shoulder bruised; fell in front of trip while trying to hook the trace chain.
15.	John Vetroskey.	Miner.	35			Paul.	do.	Struck by empty trip on the engine plane; no bones broken.
15.	Elmer Moody.	Driver.	27			Rainbow.	do.	Riding between cars and fell; leg broken.
18.	Richard Kerns.	do.	25			Grace.	do.	Caught between two trips.
19.	John Johnson.	Trapper.	14			do.	do.	Hand caught between wagons and door.
28.	Mike Semco.	Driver.	26			Leisenring No. 2.	do.	Two ribs broken and back injured by mule turning off at wrong side and catching him between mule and wagon.
Feb. 6.	Charles Urban.	Miner.	25			Leisenring No. 3.	do.	Standing at room mouth where a wagon had been drawn out too far and a trip on the entry struck the outstanding wagon, throwing it from the track and breaking his arm.
25.	Joe Covatch.	do.	33			Leisenring No. 2.	do.	Leg broken below the knee by a fall of slate while drawing posts on rib working.
Mar. 5.	Joseph Evans.	Cager.	23			Oliver.	do.	Sprained ankle; received while trying to prevent a trip from going into the sump.
5.	Joe Brable.	Miner.	31			Leisenring No. 2.	do.	Hurt by a fall of roof coal while drawing posts in rib working.
5.	George Melles.	do.	24			Lemont No. 2.	do.	Injured by an explosion of dynamite, the left hand of each man having been blown off.
5.	Mike Bushko.	do.	40					
13.	Andrew Seigner.	do.	38			C. & E. L. Coal Company.	Somerset.	Leg broken by a fall of breast coal.
14.	John Nichol.	do.	35			Juniata.	Fayette.	Back hurt by a fall of roof coal.
17.	Daniel Calvey.	Driver.	24			Trotter.	do.	Mule backed and pushed him from the first wagon against the rib, where he was caught and squeezed by the wagons.

18.	Thomas Moly.	do.	40			Paul.	do.	Injured by being knocked from his trip by the mule stumbling and his being caugth between wagon and rib.
25.	Joseph Urbino.	do.	24			Lemont No. 2.	do.	Caught between wagon and rib while trying to sprag his trip.
26.	James Robertson.	do.	18			C. & E. L. Coal Company.	do.	Arm broken while lifting empty cars on track.
April 1.	Chas. Undermookie.	Horseback man.	55			Leisenring No. 2.	do.	Caught between wagon and rib.
1.	Joseph Madison.	Trapper.	13			Trotter.	do.	Foot crushed by falling under a trip while attempting to jump first wagon.
2.	Joseph Wrightly.	Miner.	18			Morland.	do.	Arm broken while helping to lift a wagon on the track.
4.	John Beroash.	do.	35	M.		Mt. Braddock.	do.	Leg broken by fall of slate which he had been notified to take down.
13.	Nat. Goodwidge.	do.	26			Hanna Bros.	do.	Head and shoulder injured by fall of coal.
23.	Mike Forgue.	do.	27			Oliphant.	do.	Head and back injured by fall of roof.
25.	George Wetzel.	do.	25			C. & E. L. Coal Company.	Somerset.	Leg broken by fall of slate.
May 2.	Joseph Jose.	Driver.	20			Stewart.	Fayette.	Finger taken off by being caught between wagon brake and rib.
6.	James Swink.	do.	20			Davidson.	do.	Kicked in the face by a horse.
8.	Ralph Thornton.	Timberman.	28			Paul.	do.	Injured by fall of roof while setting posts to make the place safe.
17.	Gotlieb Stindle.	Miner.				Summit.	do.	Injured by a fall of roof by neglecting to post his place.
17.	Frank Dositch.	do.	22			Lemont No. 2.	do.	Was thrown against a rib by runaway wagon; head badly cut and bruised.
19.	Paul Kabler.	Driver.	20			Morland.	do.	Thrown from a mule while going to the stable; leg broken by fall.
19.	Adam Fisher.	Miner.	42	M.	2	Redstone.	do.	Injured by fall of slate.
21.	John Rowland.	Greaser.	15			Leisenring No. 3.	do.	Left arm broken by a fall from wagon while engaged in whitewashing timbers at bottom of shaft.
23.	Paul Folosky.	Loader.	48	M.		Redstone shaft.	do.	Injured by a fall of roof coal and slate.
June 20.	Felix Donnelly.	Driver.	24			Leisenring No. 3.	do.	Injured by being caught between wagon and rib while trying to unhook a mule.
25.	Steve Bartrix.	Miner.	31			Leisenring No. 2.	do.	Back injured by a fall of roof while drawing stump.
July 2.	John Cullen.	Driver.	16			Adelaide.	do.	Foot crushed by wagon.
2.	Steve Coanas.	do.	21			do.	do.	Injured by being caught between wagon and rib.
20.	John Dymer.	Trapper.	12			Mt. Braddock.	do.	Fell under empty trip while attempting to jump on; leg badly bruised and cut.
22.	John Bair.	Miner.	10			Leisenring No. 3.	do.	Caught between the bumpers of a loaded and empty wagon, bruising leg above the knee.
26.	I. W. Reckard.	Mine-boss.	38			Kyle.	do.	Injured by a fall of slate while assisting two miners to cut a stump; head cut and bruised.
Aug. 30.	Joseph Soika.	Miner.	35			Anchor.	do.	Ankle of right foot dislocated and knee cut by running into full trip on the slope.
Sept. 10.	Joseph Packus.	do.	26			Fairchance.	do.	Injured by a fall of slate from not obeying the orders of the mine-boss.
16.	John Vargo.	Coke drawer.	30			Leisenring No. 3.	do.	Left leg badly broken, caused by falling from a car on railroad switch.
Oct. 5.	George Riley.	Driver.	22			Hocking No. 1.	Somerset.	Leg broken by being run over by a car.
11.	John Eckman.	Miner.	38			Dexter.	Fayette.	Injured by a fall of roof and slate.
Nov. 17.	Rock. Dulette.	do.	50			Nellie.	do.	Leg broken by falling from mine cars.
19.	Frank Duda.	Driver.	27			Leisenring No. 1.	do.	Arm broken by falling from trip.
23.	Alber Ohler.	Miner.	13			C. & S. Coal Company.	Somerset.	Arm broken by a fall.
25.	Elmer Klingaman.	Driver.	20			C. & E. L. Coal Company.	do.	Rib broken by a fall of coal.

TABLE NO. 5—*Continued.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Married or single.	No. of children.	Name of Colliery.	Location County.	Nature and Cause of Accident.
Nov. 25.	William Brown. . . .	Driver.	20	. .	. .	C. & E. L. Coal Company, .	Somerset.	Caught between wagon and rib.
25.	Patrick Kelley.	do.	37	. .	. .	Leisenring No. 2.	Fayette.	Injured by being caught between wagon and rib and collar bone broken.
Dec. 5.	W. M. Brown.	Miner.	45	. .	. .	Statler.	do.	Leg broken and skull fractured by a fall of roof coal.
6.	George Kenep.	Driver.	20	. .	. .	Morland.	do.	Injured by runaway trip.
14.	Joseph Davis.	Miner.	37	M.	. .	Wheeler.	do.	Arm broken below the elbow by fall of coal and slate.
14.	Isaac Matison.	Timberman. . . .	43	M.	. .	Stewart.	do.	Nose broken and face bruised while riding down steep butt heading on a wagon; when it came to the curve he was thrown violently against the rib.
23.	Mike Buchko.	do.	24	. .	. .	do.	do.	Injured by being run over by a trip; knee badly bruised.

SIXTH BITUMINOUS DISTRICT.

(BLAIR, CAMBRIA, CLEARFIELD, INDIANA, JEFFERSON, WESTMORELAND AND SOMERSET COUNTIES.)

OFFICE OF INSPECTOR OF MINES,
JOHNSTOWN, PA., *February 7, 1893.*

HON. THOMAS J. STEWART,
Secretary of Internal Affairs:

SIR: I have the honor of presenting herewith my eight annual report as Inspector of Mines for the Sixth Bituminous District for the year ending December 31, 1892.

The total production of coal for the year was 7,360,158 tons, an increase of 360,158 tons over that of 1891.

The number of fatal accidents was 14, an increase of one over 1891. The non-fatal have increased one over 1891.

On investigation of the causes of the accidents, I learned that seven of the unfortunate persons who were fatally injured were non-practical miners, a majority of whom did not understand our language, consequently could not be informed of the dangers existing, nor how to avoid them.

We believe that more care should be exercised in employing men, and in what part of the mines they are put to work. Until this is done we need not look for any decrease in the accidents, as it is very unreasonable to expect inexperienced men to avoid the many dangers of our mines, when they do not know that they exist, and not understanding our language, cannot be taught.

In addition to the usual tables, I have prepared an extra one giving the name of mine-boss and mine, and the seam of coal worked; giving geological letter and local name, and if worked under or above water level.

In another part of my report will be found brief remarks on the condition of each mine, and a few remarks on the general condition of the district.

Yours very respectfully,

J. T. EVANS,
Inspector.

25-12-92.

GENERAL CONDITION OF THE DISTRICT.

The spirit of progress has been very active in this district during the year in improving the system of mining, draining, ventilating and hauling. This, coupled with the increased technical knowledge of the theory and practice of mining by those in charge, is gradually but permanently bringing the mines to a higher standard of safety and sanitary condition.

The cheerfuf observance of the provisions of the law by the majority of operators has produced a good effect in increasing the safety of the mines. The number of accidents is hardly a fair criterion in judging of their safety, unless we take into consideration the class of men that is being employed of late years, who are generally inexperienced miners, consequently do not know how to protect themselves from the many dangers surrounding them in the mines. This will naturally keep the number of accidents higher than it should be.

At the close of another term of four years as Inspector of the district I feel proud of the improvements that have been made and of its present general condition.

I attribute this progressive spirit so manifest in our mining people to the law making it obligatory on all men having charge of mines to hold certificates of competency. To obtain this document it requires a little technical knowledge of the theory and practice of mining, sufficient, we believe, to create a desire for more information on the subject. When it has not this effect the party holding a certificate may rest assured that his services will not be very long in demand, as we are living in a progressive age and the man who wishes to succeed must keep up with the times.

I am very reluctant to believe that there is any one thing that will do so much toward improving the mines as this increased technical knowledge of the theory and practice of mining by those in charge.

We can make all the laws governing mining, but if we do not educate the people who have charge of the mines, the laws will not have the desired effect.

I find the Shaw gas testing machine of great value to me in testing the return air of mines where fire-damp is given off. It enables me to find out the actual condition of the return air of such mines as often as desired, by having the fire-boss fill a bag, and then testing its contents in my office. In addition to this, it is of incalculable value in testing the air of the so-called non-gaseous mines for "black-damp" or "carbonic dioxide," as it enables an Inspector to tell exactly what percentage of black-damp is in the return air of any of the mines.

CAUSES OF ACCIDENTS FOR 1892.

Fatal Accidents.

By falls of coal,	6
By falls of rock,	4
By mine wagons,	4

Non-fatal Accidents.

By falls of coal,	9
By falls of rock,	7
By mine wagons,	5

MINE STATISTICS.

Coal production as per tables,	7, 360, 158
Coke production as per tables,	1, 035, 866
Coal shipped, tons,	5, 310, 299
Number of men employed,	12, 241
Number of men employed per each fatal accident,	872
Number of men employed per each non-fatal accident,	581
Number of tons mined per each fatal accident,	525, 725
Number of tons mined per each non-fatal accident,	350, 483

Number of mines in each county of which the district is composed, with number of men employed and tons of coal mined in each.

Cambria county—Number of mines,	63
Coal production in tons,	3, 289, 194
Number of persons employed,	5, 672
Jefferson county—Number of mines,	13
Coal production in tons,	2, 151, 435
Number of persons employed,	3, 439
Westmoreland county—Number of mines	11
Coal production in tons,	1, 175, 961
Number of persons employed,	1, 653
Indiana county—Number of mines,	6
Coal production in tons,	321, 787
Number of persons employed,	473
Blair county—Number of mines,	8
Coal production in tons,	278, 495
Number of persons employed,	635
Clearfield county—Number of mines,	6
Coal production in tons,	130, 191
Number of persons employed,	352
Somerset county—Number of mines,	1
Coal production in tons,	13, 095
Number of persons employed,	17

GENERAL CONDITION OF MINES AND RECORD OF IMPROVEMENTS DURING 1892.

Important improvements have been made at a number of the mines during the year. At the Monastery mine they have put in a new rope haulage. The machinery is all located on the surface, and the ropes are run down through bore-holes made for that purpose at the foot of the slope proper, from whence the rope runs down a distance of several hundred feet, to which point the coal is hauled from the two lifts or levels by mule power. Improvements have also been made in the ventilation of the mine by enlarging the bottom of the downcast shaft, and erecting air crossings over the main slope, by which they are enabled to split the air current, and do away with doors on the main hauling road.

The Derry Coal and Coke Company has made an important improvement at its mines by putting in several overcasts, which enables them to ventilate the mines by split currents; this makes the mine now one of the best ventilated in the district.

J. C. Stineman, of South Fork, has just put in a new fan drift and set up a fan 18 feet in diameter, and remodeled the drift, making a double track for a distance of several hundred feet preparatory to putting in a rope haulage. The boiler house is built and boilers in readiness to fire.

Webster No. 3 have made extensive improvements at their mine, among them are a new fan 16 feet in diameter, and a new plane by which to drop the coal down from the upper level in the mine to the lower one. This is the second plane they have put in. They have also opened up two new drifts on the property one on the C and the other on the E bed, with a plane 390 feet to drop the coal to the tipples. This plane is equipped with two of the Hartman patent safety bucks; this is a very ingenious car for dropping down loads on inclined planes as only two rails are used in place of four, as is the case with the common buck, a saving of many tons of steel rails on inclines of considerable length. Mr. Hartman, the superintendent, is the patentee.

This company has also built during the past year 300 railroad cars each of 60,000 pounds capacity of the latest pattern, with Jenny couplers and airbrakes, to be used for their Webster mine at South Fork.

At the Puritan shaft, Portage, a new shaft has been put down 125 feet and divided off. One department has stairways for egress in case of accident to the shaft. Over the other part a new fan has been erected, by which the mine is ventilated.

Sonman Shaft Coal Company has also put down a new shaft for the express purpose of improving the ventilation of the mine, and is setting up a new fan 18 feet in diameter over it. They have also driven a new airway 3,000 feet in length to connect with this shaft, and are now building overcasts so that the mine can be ventilated on the split system. The new fan will no doubt throw from 75,000 to 80,000 cubic

feet of air per minute into the mine if needed. The improvements will cost from $3,500 to $4,000.

J. L. Mitchell & Co. have put down a new slope at the East End and erected a new hauling plant on the endless rope system. It is driven down on the same grade as the coal pitches and is supposed to connect with the West End mine or the Gallitzan slope; this will then give natural drainage to the East End coal property. Preparations are now being made to put in a fan by which to ventilate the mine.

Dean Mine No. 4 is a new operation on the Cresson and Clearfield Coal and Coke Co.'s property. A fan has been put up here to ventilate the mine. The coal is dropped from this drift over a plane about 2,000 feet in length; from there it is hauled by a small locomotive about 3,000 feet to the tipple and coke ovens. The mine being so high up on the hill, they had considerable trouble during the dry season to get sufficient water for the boiler which furnishes steam for the fan.

The Pittsburg and Rochester Coal and Iron Co. has made very extensive improvements at its Adrian No. 2 slope. In the mine they have a locomotive run by compressed air which hauls the coal along the level, a distance of nearly one mile to the slope. They can haul from 20 to 30 cars each trip, each car holding about two tons of coal where the grade is not too heavy. I would heartily recommend this haulage along levels to a slope or shaft, as there is so little wear and tear in the system, especially where the distance is so great from outside to face of mine. Outside at this mine they have an immense tipple where 3,000 tons of coal a day can be handled without much trouble, and a large new breaker has been built in which several hundred tons of coal of different grades can be kept in stock, slack and nut in particular, the lumps being shipped as soon as it is brought from the mine and screened.

In the Walston Mines they have also built an immense coal breaker and bins of possibly a thousand tons capacity for the two mines, Nos. 2 and 3.

The Berwind White Coal Company, at Horatio, has made a great many improvements at its mines. In No. 5 and No. 2, overcasts have been put in, thus enabling them to divide the air current into different splits; this is a much needed improvement in that particular coal field, as there are such enormous quantities of powder used in the mines.

In No. 6 Mine they are making preparations for the same system, and erecting a 25-foot diameter fan by which to produce the ventilation.

Cambria County Mines.

Rolling Mill, A. J. Haws, Cushon, and Williams Mines, are located at Johnstown; three of these are ventilated by fans. The general condition of these mines is good. The Rolling Mill Mine gives off large

quantities of fire damp, and requires the closest attention from those in charge to keep the working places in a safe condition. Extra precaution is taken at this mine to avoid danger, by employing an extra fire-boss for the day shift, who is expected to travel through the mine, and especially to look after that part of the work being drawn back as the accumulations of gas and the large blowers that have been met with, have been in the workings where pillars are being drawn.

Conemaugh Mine is located about two miles east of Johnstown. This is a new plant opened during the year 1892, and began operations about the beginning of October. The ventilation and drainage of the mine are very good.

Mineral Point Mine is located about five miles east of Johnstown. They are now working on the Clarion coal bed, but have two other openings, one on the B. bed and the other on the C. prime, both of which they expect to have in operation before the close of 1893. The ventilation is now produced here by a furnace, but the new company which has assumed control of this property since October, is going to put in a fan with which to ventilate the mine.

Argyle, Aurora, Euclid, South Fork, J. C. Stineman, and Webster No. 3 Mines are all located at South Fork. The conditions of those mines is good. The first three named are ventilated by furnaces, and the fourth by exhaust steam from the pumps. The J. C. Stineman mine has been making very extensive improvements during the past year, preparatory to putting in rope haulage. An eighteen-foot diameter fan has been erected to replace their furnace. The Webster No. 3 owners have also been making extensive improvements at their colliery. Among them a new fan of sixteen foot diameter has been erected to replace a twelve-foot fan, and a new gravity plane in the mines, over which the coal is dropped from the upper level to the lower main level, from whence it is taken out by rope haulage. They have also opened up two drifts, one on the C. prime and the other on E. bed, and built a plane three hundred and ninety feet in length, over which the coal is dropped to the tipples. This plane is equipped with two of the Hartman patent safety bucks.

The Puritan Shaft, Lukins Slope, Anchor, Trout Run Slope, Martindale No. 1, and Ebervale Mines are all located at or near Portage. The first five named mines are ventilated by fans, the last by furnace. The condition of the mines on this branch has been very much improved during the last two years by the replacing of furnaces with fans. At the Puritan a fan has been put up and a new shaft sunk one hundred and twenty-five feet, to be used as an escapement shaft and for ventilation.

At Benscreek there are five mines, the Sonman shaft, Sonman No. 1, Columbia No. 4, Benscreek Plane, and Dysert No. 2. At the first named mine extensive improvements have been made for the purpose of in-

creasing the ventilation. A new shaft has been sunk and a large airway driven in the mine about three thousand feet to connect the workings with the shaft over which a new fan eighteen feet in diameter has been erected. This will enable them to ventilate the mine with split currents, giving to each section of work fresh air undiluted.

Sonoman No. 1 is ventilated by a fan, though considerable trouble has been experienced here to get air to the face of the mine on account of leakages along the line. This has now been partially overcome, but considerable work is yet required to get the necessary volume of air to the face of the workings so as to have the mines in first-class condition.

Columbia No. 4, though ventilated by furnace, is in good condition, as they have a well built furnace and keep a man continually at it to keep up a good heating fire, from which a good current of air can be expected to pass through the mine, as airways are all made large and kept clear of all debris.

The Benscreek Plane and Dysert No. 2 Mines are connected with each other, and, as stated in my last report, are, possibly, the two most favorably located mines in the district to ventilate at a small cost; but I am sorry to say that advantage is not taken of this, and the result is that the ventilation is not up to the standard. What is particularly required at these mines is a good fan, for my experience is that in many cases where furnaces are in use there is too much neglect; sometimes they are not burning at all, at other times, if in operation, probably a twelve-year old boy is put as an attendant to them, or possiby they are left to a driver to attend to; and to try to ventilate a mine employing from seventy to one hundred men in this way is simply absurd, as it cannot be done, consequently a fan is the only proper means.

Lilly Slope, Standard and Sonman No. 2 Mines are located at Lilly. The two former are ventilated by fan, and are in good condition in every respect. The latter mine has a furnace with which they try to ventilate the workings, but it is a miserable failure. I expect those in charge of this mine to put in a fan at once.

Cresson Shaft.—The ventilation and drainage of this mine is reasonably good, the only trouble being the need of a second opening, and until this is done, only twenty men are allowed to work in the mine at one time. Second opening is expected to be through about April.

Gallitzen Slope and Gallitzen Shaft are located at Gallitzen and are ventilated by fans. The drainage and ventilation of those mines are good; a modification of the split current system is in use in both. At the slope they have made extensive improvements on the tipples. An automatic and safety dump, manufactured by the Pittsburg Coal and Ore Dump Company, one of the Link Belt Engineering Company's robe drive and car haul, and one of Logan, Gregg & Co.'s automatic dump baskets for lowering coal to railroad cars, have also been put in. These improve

ments have enabled them to handle coal with great dispatch on the tipples and to improve the quality of the lump coal shipped.

At Bennington or East End there are four mines, namely: Bennington slope, Porter shaft, Lemon, and East End mine. The first named is ventilated by a fan and is generally found in fair condition. Porter shaft on my last examination was found rather defective in one of the headings, from which the men were all taken out until a connection was made to put in more air, which required about a week's work. The trouble is now, we believe, overcome.

The Lemon Mine is ventilated by furnace and on the split current system. No doors are required in the mine. This gives the men employed here a regular, pure and undiluted current of air.

East End Mine is now entirely a new opening. It was formerly worked above water level, but the new opening is a slope driven down on the dip of the coal about 1,100 feet. A new tipple has been erected and a pair of M. A. Green's endless rope haul engines, 12×14, and two new boilers put up. This mine is operated by Lloyd & Mitchell and will eventually strike into the Gallitzen slope. This gives them natural drainage for this coal property. A fan is to be put up at the mine to ventilate the workings.

The Delany and Glen White Mines, of Kittanning Point, the first one operated by the Altoona Coal and Coke Company, and the latter by the Glen White Coal and Lumber Company. When examined last were found to be in a fairly good condition, but there was room for improvement in each. The trouble in the former is that the mine has increased its capacity so fast of late, that the furnace by which it was ventilated became inadequate for the work. The condition of the mine at present, I am informed, is much improved from changes which was suggested and carried out, and from a reduction of the number of employes in the mine.

In the Glen White the condition of the mine has also been greatly improved by increasing the size of the outlet or return airway and splitting the air current, in place of carrying the whole volume around the mine.

The Amsbury and Dean, Nos. 1, 3 and 4, which are located on the Cresson and Clearfield railroad and operated by the Cresson and Clearfield Coal and Coke Company, are all in good condition. Three of these are ventilated by fans and the other by furnace. The Patton mine and the Dougherty, the latter, although only about two miles from this road, has a branch road running up to it from Altoona, called the Wopsononock railroad. Neither this mine nor the Patten are running very extensively, but both are kept in a good sanitary condition.

On the P. & N. W. R. R., between Lloydsville and Mountaindale, there are about seven mines, small and large, the Great Bend Coal Company owning the largest of them, Nos. 2, 4 and 5. The others are owned

and operated by Fred Bland, Max Frick, John Gwin & Son and the Bear Ridge Coal and Coke Company. In the last two named mines the seam coal worked is very low, 2′ 8″, but of an excellent quality for making coke.

The Great Bend, No. 2, Mine is about worked out. The Nos. 4 and 5 are new mines and ventilated by furnaces, as are also the rest at this point. All these mines are in good sanitary condition.

At Coalport and Irvonia there are six mines, all of which are ventilated by furnaces except the National No. 1 where a fan is in operation. No. 2 National, Oakland Nos. 1 and 2 and Irvona Nos. 1 and 2—the condition of those mines is good as to ventilation and drainage, the latter being difficult to keep up, as the strata overlying the coal here is very open, consequently in rainy weather they give off large volumes of water.

On the Glen Campbell branch running into Indiana county at Glen Campbell, there are four mines, three of which are owned by G. Campbell & Co. and the other by Reakirt, Bro. & Co. Three others located at Urey, about two miles from Glen Campbell, are owned and operated by James Passmore & Co. All of those mines when examined last were found to be in very good condition as to ventilation, drainage and general safety.

At Hastings there are six mines in operation, all of which are ventilated by furnaces. Only four of these have been examined, the other two being new openings which I have not yet visited. There are also three other mines on the new branch to Spangler that I have not yet examined, Carbon No. 2, Ellora and Cymbria mines. Those that were examined, Nos. 8 and 9, Sterling, Mitchell and Oak Ridge, were found to be in a pretty fair condition, yet there was room for improvement in some of them. In mines working large numbers of men and ventilated only by the power of a furnace, the ventilation cannot be very good in our shallow mines, as it is an utter impossibility to produce quantities of air in such mines sufficient to keep them in a first-class condition by furnaces. A furnace may be all right in a mine employing from 70 to 80 men or possibly 100 men, if the furnace is very large, and that I believe is the extreme limit in small seams of coal and shallow mines, as I know of none in the district now that can do that amount of work.

JEFFERSON COUNTY MINES.

The Punxsutawney Mines which are operated by the Berwind White Coal Company and the Pittsburg and Rochester Coal and Iron Company, are all, except one, ventilated by large fans ranging in size from 16 feet to 25 feet diameter, and in most cases forcing more than double the volume of air required by law into the mines, and the only improvement we think necessary in these mines is to split up the air currents in place of carrying the one current around the workings; for as there is a large

quantity of powder used in those mines, the air becomes very much vitiated after passing through the works. We are glad to report that the mines now being opened by the Berwind White Company are being opened on plans which will make such change, and that several of the old mines of both the companies are now splitting the air on a modified scale where they can.

The Elenora Mine is operated by the Pittsburg and Rochester Coal and Iron Company. I have failed to examine it for some time as the mine was idle on the last two visits I made, but when examined some time ago it was in a very good condition, and I have no doubt that is being kept so.

WESTMORELAND COUNTY MINES.

There are ten mines operating in the district that work on the Pittsburg seam of coal, the Monastery, Latrobe Coal Works, M. Saxman, S. H. Smith, Loyalhanna and Pandora are located at Latrobe. The St. Clair and Derry shaft at Bradenville, two and a half miles east of Latrobe. Millwood shaft at Millwood, and the Isabella mine at Coketon. All those collieries when examined last were found in good condition. Six of the ten are ventilated by fans, one by furnace and one by exhaust steam and the other two, S. H. Smith and M. Saxman, are ventilated by natural means. In each of those mines the butt headings are driven to daylight, so that in either cold or warm weather with the number of openings, they have a reasonably good current of air in circulation; but in the Fall and Spring when the temperature outside is the same as that of the mine, I am sorry to say that ventilation is bad, but I am glad to state that those are the only two mines in the district that have no artificial means for producing ventilation.

The other mines in this locality are well ventilated all the year Six of the eight use the split current system of ventilating.

The Lockport Mine which is working on the F. bed of the lower coal measures, is also in good condition as regards ventilation and drainage.

On the new branch at South Fork, Cambria county, running out to Dunlo, a distance of eight miles, there are three new mines; two of them are shafts and one drift opening. One of the shafts and the drift is owned by the same company the "Yellow Run Coal Company." The other shaft is owned by the "Henrietta Coal Company;" its depth is ninety feet to the landing; the other shaft is something over one hundred feet in depth, the exact depth I have not had yet. This is a new coal field which has been opened up during the year 1892. The quality of coal is excellent.

There are two other new coal fields being opened in Cambria county.

One is at a place called Patton, the other is at or near the town of Spangler on the head waters of the Susquehanna river. There are about a dozen new collieries being opened up at those places.

TABLE I.—*Showing Location of Collieries in the Sixth Bituminous Mine District.*

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Argyle	Huff & Coulter	Cambria	J. P. Wilson	South Fork, Cambria county.
Aurora	Luke & Hurst	do.	D. W. Luke	do. do.
Amsbury	Cresson and Clearfield Coke Company	do.	P. J. Wall	Frugality, Cambria county.
A. J. Haws shaft	A. J. Haws & Son	do.	H. Y. Haws	Johnstown, Cambria county.
Adrian No. 1	Rochester and Pittsburg Coal and Iron Company	Jefferson	D. Fleming	Delancy, P. O., Jefferson county.
Adrian No. 2 shaft	do. do. do.	do.	do.	do. do.
Anchor	Cambria Coal Mining Company	Cambria	E. S. Brubaker	Portage, Cambria county.
Bear Ridge	Bear Ridge Coal and Coke Company	do.	Joseph Smittle	Mountaindale, Cambria county.
Bens Creek plane	E. W. Mentzer	do.	E. W. Mentzer	Hollidaysburg, Blair county.
Bland	Fred. Bland	do.	Fred. Bland	Blandsburg, Cambria county.
Bennington slope		Blair	Wm. Smith	Gallitzen, Cambria county.
Bear Rock	Bear Rock Coal Company	Cambria	John Leahy	Lilly, Cambria county.
Bethel	Bethel Coal Company	Somerset	John Brown	Holsopie, P. O., Somerset county.
Columbia	J. T. Mitchell	Cambria	Wm. Smith	Gallitzen, Cambria county.
Continental				
Cresson shaft	Cresson Coal and Coke Company	Cambria	John Powell	Cresson, Cambria county.
Cushon	Cambria Iron Company	do.	Wm. Morris	Johnstown, Cambria county.
Caldwell	Caldwell & Co.	do.		Portage, Camoria county,
Cymbria	Cymbria Coal Company	do.	C. Campbell	Spangler, Cambria county.
Carbon Nos. 1 and 2	Carbon Coal Company	do.	D. W. Holt	Hastings, Cambria county.
Conemaugh	Huff & Coulter	do.	J. P. Wilson	South Fork, Cambria county.
Delany	Altoona Coal and Coke Company	do.	John Ommroe	Delaney, Clearfield county.
Dysert No. 1	Canon Leahy	do.	Canon Leahy	Lilly, Cambria county.
Dysert No. 2	D Laughman & Co.	do.	Thomas Leahy	
Dean Nos. 1, 2 and 4	Cresson, Clearfield Coal and Coke Company	do.	P. J. Wall	Frugality, Cambria county.
Dunlo	Dunlo Coal Company	do.	Peter Cameron, Jr.	Dunlo, P. O., Cambria county.
Dougherty	Richland Coal Company	do.	John H. Dougherty	Phœnix Block, Altoona.
Derry shaft	Derry Coal and Coke Company	Westmoreland	Edward Saxman	Latrobe, Westmoreland county.
Eagle	John Gwin & Son	Cambria	Luther Gwin	Mountaindale, Cambria county.
Euclid	Euclid Coal Company	do.		
Eldorado	J. S. McCartney	do.		
Elenora	Rochester and Pittsburg	Jefferson	S. A. Rinn	Elenora, Jefferson county.
Ebervale	Elleora Coal Company	Cambria		Portage, Cambria county.
Elleora	East End Coal Company	do.	John B. Reed	Carrolltown, Cambria county.
East End		Blair	Wm. Smith	Gallitzen, Cambria county.
Gallitzin slope	Gallitzen Coal and Coke Company	Cambria	Wm. M. Smith	do. do.
Gallitzin shaft	Taylor & McCoy	do.	J. F. McCoy	do. do.
Great Bend Nos. 2, 4 and 5	Great Bend Coal Company	do.	John H. Bell	Bellwood, Blair county.
Glenmore	Glenmore Coal Company	do.	D. R. Moore	Amsbury, Cambria county.
Glen White	Glen White Coal and Lumber Company	Blair	Val Eichenlaub	Glen White, Blair county.
Glenwood No. 2	Glenwood Coal Company	Indiana	Arthur Riddle	Glen Campbell, Indiana county.
Glenwood Nos. 3 and 4	do. do.	do.	do.	do. do.
Henrietta shaft	Henrietta Coal Mining Company	Cambria	W. H. Blackburn, Sr.	Dunlo, Cambria county.
Horseshoe	Altoona Coal and Coke Company	Blair	John Ommroe	Delany, Cambria county.
Hastings	Chest Creek Coal and Coke Company	Cambria	W. C. Shiffer	Hastings, Cambria county.
Irvona Nos. 1 and 2	Irvona Coal and Coke Company	Clearfield	John McNulty	Coalport, Clearfield county.
Isabella furnace	Isabella Furnace Company	Westmoreland	W. C. Grist	Blairsville, Indiana county.

TABLE NO. 1.—*Continued.*

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Ingleside	Ingleside Coal Company	Cambria	Alfred Slater	Johnstown, Cambria county.
J. C. Stineman	J. C. Stineman	do.	W. J. Stineman	South Fork, Cambria county.
Lemon.				
Loyalhanna	Loyalhanna Coal and Coke Company	Westmoreland	J. C. Menoher	Loyalhanna, Westmoreland county.
Lockport	Boliver Coal and Coke Company	do.	Nathe Miles	Scottdale, Westmoreland county.
Latrobe Coal Works	Latrobe Coal and Coke Company	do.	D. W. Jones	Latrobe, Westmoreland county.
Lilly slope	Lilly Coal Company	Cambria	C. A. Hughes	Altoona, Blair county.
Max Frick	Max Frick	do.		
Monastery slope	H. C. Frick Coal and Coke Company	Westmoreland	A. F. Downing	Latrobe, Westmoreland county.
M. Saxman	M. Saxman, Jr., & Co	do.	Frank Kuman	do. do.
Millwood shaft	Millwood Coal and Coke Company	do.	E. B. Kimmel	Millwood, Westmoreland county.
Mineral Point	Mineral Point Coal Company	Cambria	S. B. Price	Johnstown, Cambria county.
Martindale No. 1	J. C. Martin	do.	John M. Watt	Portage, Cambria county.
National No. 1	Philadelphia Coal and Coke Company	Clearfield	W. M. Helman	Irvona, Clearfield county.
National No. 2	do. do.	do.	do.	do. do.
Oakland	Samuel Hagertz	do.	Samuel Haggerty	Coalport, Clearfield county.
Oak Ridge	Dunwiddie, Campbell & Co.	Cambria	James Campbell	Hastings, Cambria county.
Pandora shaft	Loyalhanna Coal and Coke Company	Westmoreland	J. C. Menoher	Loyalhanna, P. O., Westmoreland co.
Puritan shaft	Lambert, Scott & Co.	Cambria	Joseph Campbell	Portage, Cambria county.
Porter shaft	C. H. Porter	Blair	C. H. Porter	Hollidaysburg, Blair county.
Penn	Reakart Bros.	Indiana	Wm. Trevesick	Glen Campbell, Indiana county.
Patten	F. G. Patten	Clearfield	Wm. Templeton	Coalport, Clearfield county.
Powers	Frank Powers	Cambria	John M. Powers	Cresson, Cambria county.
Rolling Mill	Cambria Iron Company	do.	Wm. Morris	Johnstown, Cambria county.
Richland	Richland Mining Company	do.	George Bell	Dysert, Cambria county.
Sumner No. 1	Lukins, Haupt & Co.	do.	N. L. Longwell	Portage, Cambria county.
South Fork	do. do.	do.	do.	do. do.
Sonman No. 1	W. H. Lipper & Co.	do.	Daniel Leahy	Lilly, P. O., Cambria county.
Sonman No. 2	do. do.	do.	Patrick Leahy	do. do.
S. H. Smith	Ligonier Coal Company	Westmoreland	Daniel Craig	Latrobe, Westmoreland county.
St. Clair	St. Clair Coal and Coke Company	do.	P. J. Slavin	Bradenville, Westmoreland county.
Standard	Standard Coal Company	Cambria	Richard Hughes	Altoona, Blair county.
Sonman shaft	Sonman Shaft Coal Company	do.	C. A. Hughes	do. do.
Summit	Summit Coal Company	Jefferson	C. F. Frazer	Hastings, Cambria county.
Sterling Nos. 8, 9 and 10	Sterling Coal Company	Cambria	J. Spangler	do. do.
Trout Run		do.	C. A. Hughes	Altoona, Blair county.
Tipton		Blair	E. K. Meyers	Tyrone, Blair county.
Urey No. 1 and 2	Urey Ridge Coal Company	Indiana	James Passmore	Urey, Indiana county.
West Eureka Nos. 1, 5 and 6	Berwind White Coal Company	Jefferson	Thomas Fisher	Horatio, Jefferson county.
West Eureka No. 2	do. do.	do.	do.	do. do.
West Eureka No. 4	do. do.	do.	do.	do. do.
West Eureka No. 10	do. do.	do.	do.	do. do.
Webster No. 3	John C. Scott & Sons	Cambria	Philip Hartman	South Fork, Cambria county.
Walston No. 1, 2 and 3	Rochester and Pittsburg Coal and Iron Company	Jefferson	Geo. W. Snyder	Walston, Jefferson county.
Williams	Wm. J. Williams	Cambria	W. J. Williams	Johnstown, Cambria county.
Yellow Run	Yellow Run Coal Company	do.	Peter Cameron, Jr.	Dunlo, P. O., Cambria county.

TABLE NO. 2.—*Giving the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the Sixth Bituminous Mine District, for the year ending December 31, 1892.*

NAMES OF COLLIERIES.	Location—County.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Argyle	Cambria	112,049		112,049	313	137		1	512		20		
Aurora	do.	33,561		33,561	200	47			200		6		
Amsbury	do.	44,000		44,000	240	81			250	2	8		20
A. J. Haws	do.	25,020			306	43			180	2	4		
Adrian No. 1	Jefferson	338,462	98,371	343,315	282	667	1			10	50	3	440
Adrian No. 2	do.	158,255			236	169	1	2		1	14		
Anchor	Cambria	47,800		47,800	161	95			171	1	8		
Bear Rock		2,500		2,500	75	28			20		1		
Bear Ridge	Cambria	24,140	5,947	14,225	200	65			120	1	5		40
Bens Creek plane	do.	59,027		59,027	200	128			250		12		
Bland	do.	22,000			310	28			110		3		
Bennington slope	Blair	94,354	40,709	25,816	270	199	1		140	5	36		100
Bethel	Somerset	13,095		13,095	300	17			100		2		
Columbia	Cambria	54,301		54,001	192	95			137		9		
Cresson shaft	do.	28,645		27,396	251	27			136	3	3		
Cushon	do.	45,226		45,226	311	64		1	115		11		
Caldwell	do.	5,000		5,000	150	12			50				
Cymbria	do.	1,189		1,163	15	63			25		3		
Carbon No. 1	do.	11,655		11,655	115	52					4		
Carbon No. 2	do.	676		676	15	26					1		
Conemaugh		13,411		13,375	90	59			105	1	4		
Dunlo	Cambria	10,443		10,443	252	25					1		
Delany	do.	168,934	23,578	128,667	275	249			250	2	23		97
Dysert No. 1	do	5,700		5,700	175	25			50		4		17
Dysert No. 2	do.	80,396		79,765	212	130			150		20		
Dean No. 1	do.	75,000		75,000	150	125			500	2	6		
Dean No. 2	do.	100,000		100,000	200	150	2		600		12		
Dean No. 4		75,000		75,000	250	76			300	1	6	1	88

TABLE No. 2—*Continued.*

NAMES OF COLLIERIES.	Location—County.	Total production in tons of coal.	Total production in tons of coke.	Total shipments in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Derry shaft	Westmoreland	148,442	84,036	23,373	268	212				4	20		182
Dougherty	Cambria	7,730		7,730	287	15			65		1		
Eagle	do.	9,000		9,000	250	11			50		1		
Euclid	do.	23,351		22,990	255	49			225		5		
Eldorado	do.	5,491		5,490	180	12			40		1		
Elenora	Jefferson	287,718		287,718	233	353	2	2	1,755	3	41		
Ebervale	Cambria	19,000		19,000	200	32			100		1		
Elleora	do.	840		840	15	28			20		1		
East End	Blair	25,419	5,408	11,513	143	46			170	2	3		50
Gallitzen slope	Cambria	203,389	58,618	104,580	213	360		1	678	7	30		172
Gallitzen shaft	do.	150,802	62,791	41,331	239	302			500	7	19		220
Great Bend No. 4		50,318		50,318	290	79			407		4		
Great Bend No. 2		25,616		25,616	246	31			205		2		
Glenwood No. 2	Indiana	32,386		32,386	181	43			320		2		
Glenwood Nos. 3 and 4	do.	136,819		136,819	178	202			754		2		
Glenmore	Cambria	1,868		1,868	50	10			20		1		
Glen White	Blair	84,000	51,000		300	187			300	2	2	1	97
Henrietta shaft	Cambria	8,007		7,207	60	29				2	2		
Horse Shoe	Blair	7,367	4,000		88	50				2	2		
Hastings	Cambria	150,846	64,704	38,390	237	260			991	2	31		152
Irvona Nos. 1 and 2	Clearfield	53,935	14,974	31,474	233	105			60	4	18		80
Isabela Furnace	Westmoreland	150,000	90,000		250	223			5	7	26	1	257
Ingleside	Cambria	55,213		55,213	216	65		1	338		10		
J. C. Stineman	do.	136,905		136,905	257	187			600		27		
Lemon	Blair												
Lockport	Westmoreland	6,699	3,430	1,374	58	49			40	1	2		53
Loyalhanna shaft	do.	189,631	17,311	48,059	235	269	1			8	17		104
Latrobe Coal Works	do.	164,570	54,510	76,062	303	230				3	26		100
Lilly slope	Cambria	28,055		27,640	202	68	1			1	5		
Martindale No. 1	do.	20,000		20,000	200	33			100	1	3		12
Max Frick	do.	22,450		21,800	290	46			425		3		
Monastery slope	Westmoreland	111,000		111,000	253	143	1	3		11	18		208
M. Saxman	do	83,497	30,838	31,780	287	110				3	11		60

Millwood shaft	do.	82,489		80,489	189	115		1		6	9		
Mineral Point	Cambria	13,671		13,671	222	45			118		6		
National No. 1	Clearfield	44,000	12,000	27,500	253	108			300	1	5		100
National No. 2	do.	15,000		15,000	66	77			50		6		
Oakland No. 2	do.	11,000			122	42			110		3		
Oak Ridge	Cambria	42,589		40,850	170	59			300		4		
Pandora shaft	Westmoreland	148,803	19,241	114,033	237	185				5	8	1	136
Puritan shaft	Cambria	46,700		45,500	242	88			200	3	6		
Porter shaft	Blair	27,639		27,426	184	81			8	2	16		
Patton	Clearfield	6,256		6,256	156	20			41		1		
Penn	Indiana	80,000		79,500	160	18			400		6		
Powers	Cambria	3,560		3,560	90	18			30		3		
Rolling Mill	do.	263,482			308	321		2	1,066	8	25		
Richland	do.	9,764		9,764	108	26			95	1	2		
Sumner No. 1	do.	27,300		27,300	200	67	1		140	1	3		
South Fork	do.	31,022		30,720	209	43			150	1	4		
Sonman No. 1	do.	114,000		114,000	200	130			300	2	14		
Sonman No. 2	do.	98,483	1,500	96,183	290	107			150		15		20
S. H. Smith	Westmoreland	29,653		29,552	225	30					3		
St. Clair	do.	61,177	21,000	29,050	220	87				4	13		128
Standard	Cambria	33,836		33,836	202	73			200		6		
Sonman shaft	do.	129,317		128,456	230	175		1	500	3	16		
Summit	Jefferson	17,829		17,829	286	42			102		3		
Sterling Nos. 8 and 9	Cambria	211,157		211,157	280	487			1,900	6	33		
Sterling No. 10		27,503		27,503	245	59			290		3		
Trout Run	Cambria	42,022		41,784	137	90			300	1	8		
Tipton	Blair	39,716		39,716	238	72			225	2	7		
Urey No. 1	Indiana	40,393		40,392	147	67			195		4		
Urey No. 2	do.	32,189		32,189	147	43	1		150		4		
West Eureka Nos. 1, 5 and 6	Jefferson	366,690	41,329	294,342	220	567		2		9	53		90
West Eureka No. 2	do.	228,705	23,698	191,411	207	348	1	3		4	62		80
West Eureka No. 4	do.	140,602		141,307	178	224				2	15		
West Eureka No. 10	do.	206,403		209,860	234	268				1	33		
Webster No. 3	Cambria	224,434		224,434	226	381			1,438	6	27		
Walston No. 1	Jefferson	119,175	204,873	120,151	282	221				1	17	1	150
Walston No. 2		85,136			124	127		1		1	16		50
Walston No. 3		202,480			282	453				4	24	2	500
Williams	Cambria	4,200			250	12			100		2		
Yellow Run	do.	1,600		1,600	50	41				2	2		
Total		7,360,158	1,033,866	5,260,259	20,261	12,241	14	21	21,297	175	1,113	10	3,827

TABLE NO. 3.—*Showing the number of each class of employes t each colliery in the Sixth Bituminous Mine District during the year 1892.*

NAMES OF COLLIERIES.	Location.	OCCUPATION OF PERSONS EMPLOYED INSIDE.							OCCUPATION OF PERSONS EMPLOYED OUTSIDE.							Grand total inside and outside.
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Employes at coke ovens.	All company men.	Superintendents, bookkeepers and clerks.	Total outside.	
Argyle,	Cambria,	1	85	18	3	17		124	1	2			9	1	13	137
Aurora,	do.	1	40			4		45	1				1		2	47
Amsbury,	do.	1	60	3	2	8	2	76		1	1			1	5	81
A. J. Haws,	do.	1	24		2	4		38		1					2	43
AdrianNo. 1,	Jefferson,	1	450	11	13	22	8	509	1	6	2	130	12	2	158	667
Adrian No. 2,	do.	1	140	7	2	9	3	162		1	2		4		7	169
Anchor,	Cambria,	1	70		2	6	3	82		1	1		5	1	8	95
Bear Rock,	do.	1	20		3	1	1	26		1				1	2	28
Bear Ridge,	do.	1	38	3		4	1	47	1	1	1	13		2	18	65
Bens Creek plane,	do.	1	100		3	12	5	121	1	1				2	4	125
Bland,	do.	1	22			3		26			2		3		5	31
Bennington slope,	Blair,	2	125	18	4	20		169	1	3		16	6	2	30	199
Bethel,	do.	1	13		1	2		17								17
Columbia,	Cambria,	1	70	4	2	8	4	89		1			5		6	95
Continental,	do.															
Cresson shaft,	do.	1	17			2		20	1	1	2		1		4	24
Cushon,	do.	1	42	4	2	7		56		1			6		8	64
Caldwell,	do.	1	6			1		8		1			1		4	12
Cymbria,	do.	1	47			4		52		1			8		11	63
Carbon No. 1,	do.	1	40	4	1	3		49	1	1	1				3	52
Carbon No. 2,	do.	1	22			1		25						1	1	26
Conemaugh,	do.	1	40	4	1	4	1	51	1	2	1		3	1	8	59
Dunlo,	do.	1	18	1		1		21						1	4	25
Delany,	do.	1	163	11	6	17	11	209	1	2	2	23	10	2	40	249
Dysert No. 1,	do.	1	15		5	4		25								25
Dysert No. 2,	do.	1	90		10	18	4	123	1				2	2	7	130
Dean No. 1,	do.	1	100	5	1	6	3	116	1	1	1		4	4	9	125
Dean No. 2,	do.	1	115	5	1	12	5	138	1	2				4	12	150
Dean No. 4,	do.	1	50	3	1	6	3	63	1	1	1		6	4	13	76

Derry shaft,	Westmoreland,	1	109	. . .	8	13	7	138	2	2	3	58	6	3	74	212
Dougherty,	do.	1	10	1	. . .	1	. . .	13	. . .	. . .	. . .	. . .	1	1	2	15
Eagle,	Cambria,	1	9	. . .	. . .	1	. . .	10	. . .	. . .	. . .	. . .	1	. . .	1	11
Euclid,	do.	1	35	3	1	5	. . .	45	. . .	1	. . .	. . .	2	1	4	49
Eldorado,	do.	1	8	. . .	2	1	. . .	12	. . .	. . .	. . .	. . .	. . .	. . .	. . .	12
Elenora,	Jefferson,	1	273	20	4	18	8	324	. . .	3	6	. . .	18	2	29	353
Ebervale,	Cambria,	1	25	. . .	. . .	4	1	30	. . .	. . .	. . .	. . .	. . .	2	2	32
Elleora,	do.	1	25	. . .	. . .	1	. . .	27	. . .	1	. . .	. . .	. . .	. . .	1	28
East End,	Blair,	1	30	. . .	. . .	3	. . .	34	. . .	1	2	7	1	1	12	46
Gallitzin slope,	Cambria,	1	245	14	6	14	12	292	1	4	3	46	12	2	68	360
Gallitzin shaft,	do.	1	184	14	6	17	7	229	1	3	3	42	20	4	73	302
Great Bend No. 4,	do.	1	63	. . .	6	4	2	76	1	. . .	. . .	. . .	. . .	2	3	79
Great Bend No. 2,	do.	1	20	1	3	2	1	28	. . .	1	. . .	. . .	. . .	2	3	51
Glenwood No. 2,	Indiana,	1	34	. . .	1	2	1	39	. . .	. . .	. . .	. . .	1	3	4	43
Glenwood Nos. 3 and 4,	do.	2	165	9	. . .	12	2	194	1	1	. . .	. . .	3	3	8	202
Glenmore,	Cambria,	1	8	. . .	. . .	. . .	1	10	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10
Glen White,	Blair,	1	110	3	2	6	3	125	1	2	3	40	12	4	62	187
Henrietta shaft,	Cambria,	1	18	. . .	1	1	. . .	21	1	3	2	. . .	. . .	2	8	29
Horse Shoe,	Blair,	1	41	. . .	2	3	1	48	. . .	1	1	. . .	. . .	. . .	2	50
Hastings,	Cambria,	1	171	11	4	11	5	203	1	3	2	40	9	2	57	260
Irvona Nos. 1 and 2,	Clearfield,	1	51	10	5	5	2	74	1	1	1	16	9	3	31	105
Isabella furnace,	Westmoreland,	1	103	3	10	18	. . .	135	1	4	7	46	28	2	88	223
Ingleside,	Cambria,	1	50	2	1	5	1	60	. . .	1	. . .	. . .	3	1	5	65
J. C. Stineman,	do.	1	140	10	3	19	2	175	1	2	. . .	. . .	7	2	12	187
Lemon,	Blair,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Loyalhanna,	Westmoreland,	1	168	8	24	12	8	221	1	4	9	14	17	3	48	269
Latrobe Coal Works,	do.	1	130	. . .	9	16	5	161	2	6	6	34	18	3	69	230
Lockport,	do.	1	24	1	1	2	. . .	29	1	1	1	16	. . .	1	20	49
Lilly slope,	Cambria,	1	50	3	2	4	1	61	1	1	1	. . .	2	2	7	68
Martindale No. 1,	do.	1	28	1	. . .	3	. . .	33	. . .	. . .	. . .	. . .	. . .	. . .	. . .	33
Max Frick,	do.	1	40	1	. . .	3	. . .	43	. . .	1	. . .	. . .	1	1	3	46
Monastery slope,	Westmoreland,	2	90	5	7	12	4	120	1	2	8	. . .	10	2	23	143
M. Saxman,	do.	1	65	. . .	4	10	2	82	1	1	1	19	5	1	28	110
Millwood shaft,	do.	1	85	. . .	4	9	3	101	. . .	4	2	. . .	7	1	14	115
Mineral Point,	Cambria,	1	23	. . .	13	4	. . .	39	1	3	. . .	. . .	19	2	6	45
National No. 1,	Clearfield,	1	63	10	1	4	1	80	. . .	1	1	20	4	2	28	108
National No. 2,	do.	1	53	8	2	5	1	70	. . .	1	. . .	. . .	4	2	7	77
Oakland,	do.	1	33	5	1	2	. . .	42	. . .	. . .	. . .	. . .	. . .	. . .	. . .	42
Oak Ridge,	Cambria,	1	45	3	1	2	3	55	. . .	1	. . .	. . .	2	1	4	59
Pandora shaft,	Westmoreland,	1	126	3	10	5	3	147	1	4	3	19	11	3	38	185
Puritan shaft,	Cambria,	1	65	6	2	5	2	81	. . .	1	2	. . .	2	2	7	88
Porter shaft,	Blair,	1	37	11	2	16	4	71	1	2	2	. . .	4	1	10	81
Patton,	Clearfield,	1	15	. . .	2	1	. . .	19	. . .	. . .	. . .	. . .	. . .	1	1	20
Penn,	Indiana,	1	95	3	10	6	. . .	115	1	1	. . .	. . .	. . .	1	3	118
Powers,	Cambria,	1	15	. . .	. . .	. . .	2	18	. . .	. . .	. . .	. . .	. . .	. . .	. . .	18
Rolling Mill,	do.	1	207	32	26	20	10	296	1	4	5	. . .	14	1	25	321
Richland,	do.	1	18	2	1	1	1	24	. . .	. . .	1	. . .	1	. . .	2	26
South Fork,	do.	1	30	3	1	3	. . .	38	. . .	1	1	. . .	2	1	5	43
Sonman No. 1,	do.	1	101	3	22	12	3	120	1	2	2	. . .	6	2	13	133
Sonman No. 2,	do.	1	65	10	4	10	6	96	. . .	2	. . .	4	3	2	11	107
Sumner No. 1,	do.	1	51	5	2	3	. . .	62	. . .	1	1	. . .	2	1	5	67
S. H. Smith,	Westmoreland,	1	24	2	. . .	2	. . .	29	. . .	. . .	. . .	. . .	1	. . .	1	30
St. Clair,	do.	1	45	2	2	6	1	57	1	2	3	19	3	2	30	87
Standard,	Cambria,	1	55	. . .	3	6	3	68	. . .	1	1	. . .	2	1	5	73
Sonman shaft,	do.	1	140	. . .	4	14	3	161	1	2	2	. . .	9	. . .	14	175
Summit,	Jefferson,	1	35	1	. . .	2	. . .	39	. . .	1	. . .	. . .	1	1	3	42
Sterling Nos. 8 and 9,	Cambria,	1	332	30	16	19	10	407	1	4	4	. . .	62	9	80	487

TABLE NO. 3.—*Continued.*

NAMES OF COLLIERIES.	Location.	OCCUPATION OF PERSONS EMPLOYED INSIDE.						OCCUPATION OF PERSONS EMPLOYED OUTSIDE.								
		Inside foreman or mine boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Employes at coke ovens.	All company men.	Superintendents, bookkeepers and clerks.	Total outside.	Grand total inside and outside.
Sterling No. 10	do.	1	45	3	5	2	1	57	1	1	1		1	1	5	62
Trout Run	do.	1	75	1	2	2	3	86	1	1	1		1	1	5	91
Tipton	do.	1	50	3	1	4	4	63	1	1	1		2	1	6	69
Trey No. 1	Indiana.	1	51	3	1	4	1	62	1	1	1		2	1	6	68
Trey No. 2	do.	1	355	1	1	3	1	11	1	1	1		2	1	6	17
West Eureka, Nos. 1, 5 and 6	Jefferson.	3	375	50	12	33	20	493	3	1	1	40	20	1	71	564
West Eureka No. 2	do.	1	220	28	3	30	8	290	3	1	1	39	13	1	58	348
West Eureka No. 4	do.	1	175	15	4	11	5	211	2	1	1		13	1	18	229
West Eureka No. 10	do.	1	200	20	6	15	10	255	3	1	1		17	1	23	278
Webster No. 3	Cambria.	1	286	23	11	25	12	358	1	1	1	45	12	1	32	390
Walston No. 1	Jefferson.	1	105	10	2	18	3	139	1	1	1	25	2	1	31	170
Walston No. 2	do.	1	80	. .	2	10	3	96	1	1	1	25	2	1	31	127
Walston No. 3	do.	1	180	20	6	22	6	234	3	1	1	200	6	1	219	453
Williams	Cambria.	1	10	. .	. .	. .	1	12	1	. .	. .	. .	. .	. .	1	13
Yellow Run	do.	1	18	. .	. .	. .	2	24	1	. .	. .	. .	. .	. .	1	25
Total	. . . . .	104	8,205	540	556	784	504	10,243	58	158	145	1,001	519	142	1,968	12,211

TABLE No. 4.—*List of fatal accidents which occurred in and about the mines of the Sixth Bituminous Mine District for the year ending December 31, 1892.*

Date of accident	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location County.	Nature and Cause of Accident.
Mar. 12.	Mike Scouzer,	do.	24	S.	..	Dean No. 3,	Cambria,	For the want of sprags under his coal while mining, the coal fell on him, killing him instantly.
22.	Thomas Bell,	Miner,	39	M.	3	Elenora,	Jefferson,	Was drawing heading pillars, and he and his partner went back into the gob to see how far he would have to go before he would get a loose end; while doing this a loose rock fell on him, killing him instantly.
Apr. 19.	Mike Waugh,	Driver,	21	M.	..	Adrian No. 1,	Jefferson,	Was riding between the wagons, and in some way he slipped off and his trip ran over him, causing his death.
May 5.	Mike Donder,	Miner,	34	M.	1	Dean No. 3,	Cambria,	This man was drawing heading stnmp, and in working on the corner of one, he laid under his coal after mining, with two loose ends and no sprag under it; his death was no doubt caused by carelessness.
17.	William Mooney,	Driver,	20	S.	..	West Eureka No. 2,	Jefferson,	This young man was killed outside the mine on the schute, by being run over by a trip of mine wagons.
21.	Santo Mann,	Miner,	28	M.	1	Adrian No. 2,	do.	Was killed by a fall of coal, breaking his back and right leg below the knee; had fired a shot in the coal and lay under it afterward without spragging it up.
June 21.	Mike Haseck,	do.	37	M.	1	Urey No. 2,	Indiana,	Was killed by a fall of roof which was near a clay vein; this was an unavoidable accident.
July 28.	James Hunt,	Doorboy,	13	S.	..	Elenora,	Jefferson,	Was killed while trying to jump on the head of a trip in the mine, his foot slipped and he fell under the cars.
Aug. 11.	Mike Shocknot,	do.	30	M.	1	Sumner No. 1,	do.	In dropping a wagon from his room, being in front of it, he was caught between the wagon and the rib and crushed to death.
21.	Francis Miller,	Miner,	35	M.	1	Sonman No. 2,	Cambria,	Was killed by a fall of coal through his own neglect.
Oct. 8.	Peter Wyasco,	do.	27	S.	..	Loyalhanna,	Westmoreland	Fall of coal (East No. 12 heading) struck him on back of head, forcing his head down on a shovel, cutting a large hole in the frontal bone; he was taken to Mercy Hospital, Pittsburg, where he died on the 14th of October.

TABLE NO. 4.—*Continued.*

Date of accident	NAME OF PERSON	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Dec. 3.	Guiseppi Blasio.	Miner.	30	M.	2	Monastery.	Westmoreland.	Was killed by a fall of slate in his own place; there was a smooth or slip in the roof that could not well be seen; it was an unavoidable accident.
8.	James Kozen.	do	19	S.	. .	Lemon.	Cambria.	Was killed by a fall of coal from neglect in not putting sprags under it.
19.	John McLamany.	do.	42	M.	4	Lilly slope.	do.	Was killed by a fall of slate; it was what is termed by miners a horse-back or bell, a very dangerous piece of rock; was an unavoidable accident.

TABLE No. 5.—*List of non-fatal accidents which occurred in and about the mines of the Sixth Bituminous Mine District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Name of Colliery.	Location County.	Nature and Cause of Accident.
Jan. 14.	Robert Hudson,	Miner,	19	West Eureka No. 2,	Horatio, Jefferson,	Hand masned badly; was afterwards amputated. Accident caused by falling from a loaded car and the wheel running over his hand.
Mar. 1.	David Motherwell,	do.	57	Adrian No. 2,	Adrian, Jefferson,	Collar bone broken by fall of coal; was barring down a piece of coal after a blast and it fell on him.
3.	Visco Bartino,	do.	32	Millwood shaft,	Millwood, Westmoreland,	Thigh slightly bruised by a fall of coal, caused by lying under a cut of coal after he had put a blast in it.
5.	John Carthew,	do.	24	Cushon,	Johnstown, Cambria,	Broken thigh caused by a fall of coal.
7.	William Faloom,	do.	44	West Eureka No. 5,	Clayville, Jefferson,	Collar bone broken by a fall of coal.
22.	James Hamison,	do.	60	West Eureka No. 1,	do.	Leg broken between the knee and ankle, caused by being caught by a trip of cars while going to his work in the morning. Instead of turning to the right where there was a space of ten feet between car and rib he turned to the left where there was no room, and was caught by the trip.
26.	Thomas Welch,	do.	40	Elenora,	Elenora, Jefferson,	Leg broken by a piece of rock sliding down on him from a fall.
April 1.	Patrick McGowen,	Driver,		Walston No. 2,	Walston, Jefferson,	Both legs broken, caused by slipping under his trip of loaded wagons and one of them running over both legs.
1.	Peter McLinder,	Fire-boss,	29	Monastery,	Latrobe, Westmoreland,	Slightly injured internally by a fall of slate or roof.
7.	Ercob Pachoriana,	Miner,	26	do.	do.	Shoulder slightly bruised; was struck by loaded coal wagon.
10.	Frank Stanton,	do.	52	Gallitzin,	Gallitzin, Cambria,	Was badly crushed by a fall of coal, from neglect in not putting a sprag under it.
13.	Antonia Sissi,	do.	22	Monastery,	Latrobe, Westmoreland,	Leg bruised and strained by fall of slate.
25.	Baronia Achillia,	do.	26	Somman shaft,	Bens Creek, Cambria,	Two ribs broken by a fall of coal; should have had a sprag under his coal, which would have prevented the accident.
June 22.	James Hughes,	Driver,	38	Elenora,	Elenora, Jefferson,	Very slight injury by a fall of slate.
July 9.	Edward Wick,	Miner,	41	Argyle,	South Fork, Cambria,	Collar bone broken by fall of coal, through neglect in not spragging his coal.
18.	J. B Heilburn,	do.	16	Elenora,	Elenora, Jefferson,	Slightly injured by a fall of coal; a neglect of his his father in not spragging up the coal.

TABLE NO. 5.—*Continued.*

Date of accident.	NAME OF PERSON	Occupation.	Age.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Aug. 15.	Larry Collins. . . .	Miner.	39	West Eureka No. 2	Horatio, Jefferson. . . .	Leg nearly severed from his body by being run over by loaded coal wagons while riding out of the mine, in violation of the rules of the mine.
Sep. 21.	John Sohisia.	do.	29	Rolling Mill.	Johnstown, Cambria. . . .	Leg broke by a fall of bony coal from roof.
22.	Andy Crisoskie. . . .	do.	32	do.	do. . . .	Back badly hurt by fall of slate, through neglect in not propping after being cautioned by his partner to put in props.
Nov. 3.	Henry Crompton. . .	do.	13	Ingleside.	Ingleside, Cambria.	Severe scalp wound and finger broken by a fall of roof.
17.	George Marzoni. . . .	do.	40	West Eureka.	Horatio, Jefferson.	Leg and ribs broken through carelessness in not propping up his place; a piece of rock fell and struck him.

TABLE NO. 6.—*Giving name of mine and mine-bosses, Sixth Bituminous District, seam of coal worked, its average thickness, and if above or below water level.*

NAME OF MINE.	Name of Mine-boss.	SEAM OF COAL WORKED.		Average Thickness.	Above or Below Water Level.
		Local Name.	Geological Letter.		
Argyle	John W. Donaldson	Millar or	B Seam	3 feet 8 inches	Above.
Aurora	Henry Gage	do.	B do.	3 do. 7 do.	do.
Amsbury	Wm. Roda	Lemon or	E do.	4 do. 0 do.	do.
A. J. Haws	David F. Jones	Millar or	B do.	3 do. 8 do.	Below.
Adrian No. 1	Archie Brown	Lower Freeport	D do.	6 do. 0 do.	do.
Adrian No. 2	Robert Brown	do.	D do.	6 do. 0 do.	Above.
Anchor	E. S. Brubaker	Millar	B do.	3 do. 6 do.	do.
Bear Ridge	Charles Lamb	Lemon	E do.	2 do. 10 do.	do.
Bens' Creek plane	John Leap	Millar	B do.	4 do. 0 do.	do.
Bland	William Bell	Moshanon	D do.	3 do. 0 do.	do.
Bennington slope	John Bradley	Millar	B do.	2 do. 6 do.	do.
Bear Rock	New, no mine-boss	do.	B do.	3 do. 7 do.	do.
Bethel	Reuben H. Ott	Lemon	E.	3 do. 6 do.	do.
Columbia		Millar	B.	3 do. 10 do.	do.
Cresson shaft	John Platt	Lemon	E.	4 do. 6 do.	Below.
Cushon	John Fulton	do.	E.	3 do. 2 do.	Above
Caldwell	Thomas Forsyth	Cement	C' Prime	4 do. 4 do.	do.
Cymbria	Lee Ott	Moshanon	D and E		do.
Carbon No. 1	John D. Jones	Millar	B.	3 do. 0 do.	Below.
Carbon No. 2	New; no mine-boss	Moshanon	D.	4 do. 1 do.	Above.
Conemaugh	John Donaldson	Millar	B.	3 do. 10 do.	do.
Dean No. 1	Wm. Simers	Cement	C' Prime	4 do. 2 do.	do.
Dean No. 2	do.			4 do. 0 do.	do.
Dean No. 4	George Simers	Lemon	E.	4 do. 0 do.	do.
Delany	George Forsyth	do.	E.	4 do. 4 do.	do.
Dysert No. 1	Canon Leahy	do.	E.	4 do. 0 do.	do.
Dumlo	Peter Cameron	do.	E.	4 do. 0 do.	do.
Dougherty	Wm. Kellar				
Derry	John Baker	Pitts. or Connelsville		6 do. 0 do.	Below.
Dysert No. 2	Thomas Leahy	Millar	B.	4 do. 0 do.	Above.
Eagle	Luther Grovin	Lemon or	E.	2 do. 10 do.	do.
Euclid	Samuel Brewer	Millar	B.	4 do. 0 do.	do.
Elenora	James Craig	Moshannon or	D.	5 do. 2 do.	Below and above.
Eldorado	No mine-boss	Millar	B.	3 do. 3 do.	Above.
Ebervale	Edward Hughes	Lemon	E.	4 do. 0 do.	do.
Ellora, new	No mine-boss	Millar	B.	3 do. 6 do.	do.
East End	Thomas Askey	Lemon	E.	4 do. 0 do.	Below.
Gallitzin slope	Gowen Stoker	do.	E.	4 do. 0 do.	Above.
Gallitzin shaft	James Eagan	do.	E.	4 do. 0 do.	Below.
Great Bend 4 and 5	John Cann	Millar	B.	4 do. 2 do.	Above.
Glenwood Nos. 3 and 4	Andrew Patrick No. 3; Thomas Scullen No. 4	Cement or	C' Prime	{ No. 3, 4 do. 0 do. / No. 4, 5 do. 0 do.	do.
Glenwood No. 2	John Baird	do.	do.	3 do. 4 do.	do.

TABLE NO. 6—*Continued.*

NAME OF MINE.	Name of Mine-boss.	SEAM OF COAL WORKED.		Average Thickness.	Above or Below Water Level.
		Local Name.	Geological Letter.		
Glenmore.	New, no mine-boss.	Lemon.	E.	4 feet 0 inches.	Below.
Glenwhite.	Valentine Eichenlaub.	do.	E.	4 do. 2 do.	do.
Henrieta shaft.	New, no mine-boss.	Millar.	B.	3 do. 10 do.	do.
Horseshoe.	Not working.	do.	B.	2 do. 6 do.	do.
Hastings.	D. B. Beaver.	Cement or.	C' Prime.	4 do. 0 do.	Above.
Irvona.	Archie Bathgate.	Millar.	B.	4 do. 2 do.	do.
Isabella.	Morris Lewis.	Pitts. or Connelsville.		5 do. 6 do.	Below.
Ingleside.	James Higham.	Millar.	B.	3 do. 8 do.	Above.
J. C. Stineman.	Wm. W. Watkins.	do.	B.	3 do. 11 do.	do.
Loyalhanna.	Wm. Howarth.	Pitts. or Connelsville.		6 do. 6 do.	Below.
Lockport.	Peter McAlnider.	Lemon.	E.	4 do. 0 do.	Above.
Latrobe Coal Works.	Stephen Arkwright.	Pitts. or Connelsville.		7 do. 6 do.	do.
Lilly slope.	Nicholas Evans.	Millar or.	B.	3 do. 4 do.	Below.
Max Frick.	Joseph McCann.	Millar.	B.	4 do. 0 do.	Above.
Monastery.	Enoch Rowley.	Pitts. or Connelsville.		7 do. 6 do.	Below.
M. Saxman.	John C. Dovry.	do. do.	B.	7 do. 0 do.	do.
Millwood shaft.	Thomas Thomas.	do. do.	B.	6 do. 8 do.	do.
Mineralpoint.	J. F. Anderson.	Clarion or.	A.	4 do. 3 do.	Above.
Martindale No. 1.	No mine-boss.	Lemon.	E.	4 do. 0 do.	do.
National No. 1.	Thomas Lobin.	Millar.	B.	4 do. 2 do.	do.
National No. 2.	Henry Washington.	do.	B.	5 do. 6 do.	do.
Oakland No. 2.	Lawrence Gardner.	do.	B.	1 do. 6 do.	do.
Oak Ridge.	James Campbell.	Moshanon.	D.	4 do. 0 do.	do.
Pandora shaft.	Alex. Parks.	Pitts. or Connelsville.		6 do. 6 do.	Below.
Puritan shaft.	Joseph Campbell.	Millar.	B.	3 do. 10 do.	do.
Porter shaft.	John Leonard.	do.	B.	2 do. 6 do.	do.
Penn.	Wm. Trevesick.	Cement.	C' Prime.	4 do. 4 do.	Above.
Patten.	William Templeton.	Lemon.	E.	3 do. 7 do.	do.
Powers.	Patrick Mally.	do.	E.	3 do. 7 do.	do.
Richland.	George P. Bell.	Cement or.	C' Prime.	4 do. 2 do.	do.
Rolling Mill.	John Daniels.	do.	do.	3 do. 10 do.	do.
Sonman No. 1.	Daniel Leahy.	Millar.	B.	3 do. 10 do.	do.
South Fork.	Wm. Allison.	do.	B.	3 do. 10 do.	Below.
Sonman No. 1.	Thomas D. Morgan.	do.	B.	3 do. 7 do.	do.
Sonman No. 2.	Patrick Gibbons.	do.	B.	3 do. 8 do.	Above.
S. H. Smith.	Daniel Craig.	Pitts. or Connelsville.		7 do. 0 do.	do.
St. Clair.	P. J. Slavin.	do. do.		7 do. 0 do.	do.
Standard.	Nicholas Evans.	Millar.	B.	3 do. 4 do.	do.
Sonman shaft.	Joseph Patterson.	do.	B.	3 do. 10 do.	Below.
Summit.	Isaac Smith.	Moshanon.	D.	4 do. 0 do.	Above.
Sterling No. 8.	James Meehan.	do.	D.	4 do. 6 do.	Below.
Sterling No. 9.	do.	do.	D.	3 do. 7 do.	do.
Sterling No. 10.	John R. Jones.	do.	B.	3 do. 2 do.	Above.
Trout Run.	John Wilson.	Millar.	B.	3 do. 8 do.	Below
Tipton.	J. J. Stoker.	Tipton.	D.	3 do. 10 do.	do.

Grey Nos. 1, 2 and 3,	Thomas Bellis,	Cement or,	C' Prime,	5 do. 0 do.	Above.
Webster No. 3,	James Callahan,	Millar,	B,	3 do. 10 do.	Above and below.
West Eureka No. 1,	H. W. Moore,	Lower Freeport,	D,	5 do. 6 do.	Above.
West Eureka No. 2,	Joseph Williams,	do.	D,	4 do. 6 do.	Below.
West Eureka No. 4,	James Harvey,	do.	D,	4 do. 6 do.	do.
West Eureka No. 5,	James Wood,	do.	D,	5 do. 6 do.	do.
West Eureka No. 6,	Benjamin Lewis,	do.	D,	6 do. 6 do.	do.
West Eureka No. 10,	Thomas Booth,	do.	D,	4 do. 6 do.	Above
Walston No. 2,	Andrew Beveridge,	do.	D,	6 do. 0 do.	do.
Walston No. 1,	John Ryan,	do.	D,	6 do. 0 do.	do.
Walston No. 3,	Andrew Beveridge,	do.	D,	6 do. 0 do.	Below.
Williams,	Wm. J. Williams,	Cement or,	C' Prime,	3 do. 10 do.	Above.
Yellow Run,	Richard Pardoe,	Millar,	B,	3 do. 10 do.	Below.

NOTE. The D seam of coal has two local names that it is known by in different places in the eastern or northeastern part of the state. In Clearfield county its local name is Moshannon; in the western part of the state it is known by its local name of Lower Freeport. The B seam has also two local names; it is known as the Millar seam in some parts of the state and as the White Ash in other parts. The E seam has also different local names; sometimes it is called "Coking Seam" other times "Lemon" which is the most common; it is also called "Top Seam" inasmuch as it is the upper seam of the lower coal measures. J. T. E.

SEVENTH BITUMINOUS DISTRICT.

(ALLEGHENY, WASHINGTON AND WESTMORELAND COUNTIES.)

OFFICE OF THE INSPECTOR OF MINES,
IDLEWOOD, ALLEGHENY COUNTY, *March 1, 1893.*

HON. THOMAS J. STEWART,
Secretary of Internal Affairs:

SIR: I have the honor of presenting for your consideration my annual report as Inspector of Bituminous Coal Mines for the year 1892. Most of the mines which ship their product by river transportation have been in operation but a few months during the past year, partly by reason of the drought during the summer and autumn months, and partly on account of a dispute about the price of mining. Operations at most of the railroad mines have also been greatly curtailed for want of transportation facilities to move their product to market; but in this connection it may be said that the number of cars and the motive power furnished by the railroads during the past year are far in excess of that of previous years, which fact is amply proved by the aggregate tonnage, moved to points of consumption being about 1,049,768 tons in excess of that for the year 1891. But taking into consideration that there was a general cessation of operations throughout the whole district for a period of five weeks during the busy part of the shipping season of the last named year, the natural increase of production and shipment for the past year would be about 550,000 tons. The cause of the unsteady operations during the year 1892 must therefore be attributed to the large number of mines opened during the past two years, together with the fact that many of the older operations have of late increased their producing capacity very materially, so that if we view the matter from a practical standpoint, there seems to be only one conclusion that can be arrived at, namely, that the railroads must very materially add to their equipment or some other mode of transportation must be obtained, otherwise our mines, the number of which, and the continued increasing developments with a view to an augmented production, cannot be operated to their full capacity during the busy shipping periods. It is perhaps proper to say in this connection that there is great activity in pushing forward improvements on the railroad, which

indicates that they are fully alive to the situation and are making strenuous efforts to meet all demands made upon them.

I am gratified to be able to state that the sanitary condition of the larger number of the mines in this district is steadily advancing towards perfection. Very many of the old ventilating appliances are being displaced by those of modern pattern, which give permanent and effective results; but there are still some few instances where, I am sorry to say, sanitation seems to be seldom, if ever, taken into consideration by the parties directly interested and the only prospect of a departure from the old way of procedure is by the application of the iron hand of a much more stringent law than that of 1885. I don't wish to be understood as saying that the operators and managers are alone responsible for every condition which militates against health and safety, for the workmen must bear their full share of the responsibility in the matter. The majority of the miners in this section are entirely ignorant of the elementary laws of sanitation, and in many cases where ample means of ventilation are provided, the mine atmosphere is unfit for man or beast to breathe, the pollution being caused by the excessive use of powder for blasting purposes, and the persistence in using for lighting purposes a quality of oil which should never be permitted in the mines, much of it being crude petroleum taken direct from the oil wells, or other grades which are very little better, the fumes of which are poisonous in the extreme. I have come in contact with miners who while using this kind of oil and firing from two to four shots for one car of coal would complain to the Inspector that the air in their working place was unfit to breathe, when in such cases they are themselves entirely to blame for the state of affairs of which they complain; for there is no ventilating apparatus in existence capable of maintaining a pure atmosphere in a large mine under such conditions.

I regret to say that the number of fatal and serious personal injuries are on the increase in this region which fact is due to the very large number of foreigners now employed in the mines of this district. These men do not understand our language and know nothing whatever about underground work or the dangers connected therewith, and are utterly incompetent to protect themselves therefrom, and in mines generating much explosive gas, a general ignorance or wilful disregard of the impending dangers by a considerable number of the employes is a standing menace to the safety of the whole. If some of the mine officials happen to visit them at their working places at the moment of imminent danger they can instruct them and insist upon the application of proper safeguards, otherwise the chances are that they will be killed or injured. And this class of labor is largely on the increase in the mines of this vicinity, and is likely to continue so by reason of the city of Pittsburg being the point of distribution for the consignments of ignorance and squalor which are promiscuously dumped upon our shores.

Under such condition we cannots hope for much, if any, decrease in the accident list for some time to come. The number of fatal accidents during the year was 25, leaving 14 wives widows, and 30 orphans to mourn the loss of husband and father. The number of non-fatal accidents was 56, a number of which were of a serious nature, being an increase over last report of 8 fatal and 7 non-fatal accidents, but in this connection we should take into consideration that there is a large increase in the production, the quantity of coal produced per life lost being 235,918 tons, which is not altogether an unfavorable result. Out of 14 deaths caused by falls of coal and slate, 7 would appear to be due to the fact that the poor unfortunate victims were incompetent to detect and guard against the danger which cost them their lives, and of the other 7, it is evident that three of them lost their lives through carelessness on their own part, and the same ratio will probably hold good throughout the list of non-fatal casualities. A brief description of the circumstances under which each fatality occurred will be found in its proper place in this report, together with the usual statistical tables. All of which is respectfully submitted.

Yours respectfully,

JAMES BLICK.

Total production of run of mine coal in tons of 2,000 pounds,	5,897,942
Total production in tons of coke,	12,000
Number of mines in district,	80
Number of persons employed inside,	9,760
Number of persons employed outside,	859
Total number of persons employed,	10,619
Number of persons killed in and about the mines,	25
Number of non-fatal injuries,	56
Number of wives made widows by above fatalities,	14
Number of orphans from same cause,	30
Number of tons of coal produced per life lost,	235,918
Number of persons employed per life lost,	425
Number of tons of coal produced per person injured,	105,320
Number of persons employed per non-fatal injury,	190
Number of horses and mules employed,	671
Number of steam boilers in use,	132

DESCRIPTION OF GENERAL CONDITION AND IMPROVEMENTS MADE IN THE MINES OF THE SEVENTH DISTRICT DURING THE YEAR 1892.

Mines on the Monongahela and Youghiogheny Rivers.

Castle Shannon.—The ventilation in this mine during the past year has been far below the requirements. I have on several occasions called the attention of the superintendent to the subject, and requested that

he provide artificial means to produce a sufficient volume of air-current to keep the workings in a safe, healthful condition. Finally, after serving upon him a legal notice he consented (under protest) to take action with a view to its improvement, but we fail to see any reason for a protest against the request made when we consider the fact that we are dealing with a mine employing 84 men inside and producing 55,000 tons of coal during the year, and for the greater portion of which time there was not sufficient air current in the body of the mine to work the anemometer, and the only reason we can assign for any protest being made against such a reasonable request is to assume that the gentleman knew nothing whatever about the merits of the case at issue, and was not willing to accept the statements of others who did know.

Ormsby.—The ventilation in this mine has also been inadequate for some time past, but they have now sunk an air-shaft about 260 feet in depth, and will place at the bottom thereof steam boilers for the purpose of running the pumps. A new ventilating furnace will also be erected. After this is done there is no reason why there should be any further complaint about an insufficient supply of air, although the arrangements are just the opposite of what I advised. This mine generates fire-damp very freely, and the boilers should by all means have been placed at the top of the shaft, together with a good ventilating fan, and a hoist provided to raise slack to generate steam, then there need have been no fear of any trouble in the future. Quantity of air in circulation, 12,500 cubic feet.

Becks Run and Hays Streets Run, No. 2 and 3 Mines, were all three in favorable condition when last visited, but have been idle most of the year and shut down at the present time. These mines are supplied with first-class ventilating furnaces, and the health and safety of the employes are regarded as a factor of prime importance.

Streets Run.—The ventilation in some parts of the mine was defective at the time of my last visit, but they had only just commenced operations in this part of the mine after a long stoppage, and had not put the ventilating furnace in operation; this I ordered them to do at once and also to place the doors in proper position and clean up the airways so as to allow a sufficient volume of air to flow through the workings. I have since been informed that my instructions were acted upon and the ventilation made equal to the requirements.

Walton.—This mine when last inspected was in a favorable condition, with a volume of air passing at the outlet equal to 45,000 feet per minute. On my last visit the mine was idle and the ventilation partially suspended, and I did not make any examination of the workings.

First Pool was in good order when last inspected. There was at that time a volume of 29,680 cubic feet of air passing at the outlet, the same being well distributed through the working parts of mine. The drainage is also well provided for.

Bellwood.—We have no complaints to make about this mine, everything pertaining to the health and safety of the employes being found fully up to the requirements; air in circulation, 33,600 feet per minute.

Boston Nos. 1 and 2.—In pretty good order. It is the intention to provide a large ventilating fan for No. 1 mine in the near future. The furnace of No. 2 mine is now used to ventilate part of No. 1 workings, but after the fan is provided this will be changed, and the whole of No. 1, or, if necessary, both of the mines can be ventilated with the one fan. Aggregate volume of air produced for both mines is about 73,000 feet per minute.

Dravo.—They are opening into a new field of coal which adjoins the present workings, and in order to produce ventilation it will be necessary to sink a new shaft and build a new furnace. The present arrangement has for some time past been used as a make-shift, but the time has now arrived when something permanent and effective must be provided. At the time of my last visit the quantity of air in circulation was below the requirements. I at once requested the superintendent to take immediate action to improve the same by providing a suitable ventilating apparatus, which he promised to do after some little demur on his part. Quantity of air at inlet 8,500 feet, but very little of it was passing through the part of the mine where it was most needed.

Painter, Sarah and Forest Hill Mines are all new operations, neither of which is sufficiently developed to admit of a general description. The Painter and Forest Hill mines will be large producers, but the area of territory controlled by the parties operating the Sarah mine is limited.

Ocean No. 4 and South West Mines.—Have only been in operation about one-third of the past year and during that time the full complement of men was not employed. Quantity of air passing through the workings when last inspected was 25,200 cubic feet per minute, which was sufficient for the number of men employed at that time.

Ocean Nos. 2 and 5.—The No. 5 mine is in good condition in all respects with an average volume of about 55,000 feet of air per minute passing through the workings. The volume of air passing at the outlets in No. 2 mine, when last inspected, was 52,000 feet per minute. This is a very large operation containing a very large area of old workings and the time is close at hand when the ventilating power will need to be increased very materially. The probabilities are that a shaft will be sunk at the face of the mine and a pumping plant and a powerful fan placed thereat, which is the best and most satisfactory arrangement which can be made.

Pacific.—The ventilation in this mine is and has been for some time in a very unsatisfactory condition. I called the attention of the superintendent to the matter some nine months ago, at which time he ordered that an entry be driven to connect with the No. 5 mine, so as to

ventilate one part of the mine with the No. 5 furnace, which arrangement would have removed the difficulty for some time to come. When the entries were only wanting of a few feet of being connected, the parties from whom the coal was leased stepped in and raised some legal objection which prevented its accomplishment, which quibble is still unsettled, notwithstanding the fact that the men are in the meantime working in an impure atmosphere.

West Newton is in good order in all respects with a volume of 44,280 feet of air per minute passing through the workings.

Port Royal No. 2.—This mine is also in good condition. The circulation of air to all parts of the workings was satisfactory when last inspected. A copious amount of fire-damp is generated, requiring a very brisk ventilating current to carry it away and keep the mine in a safe, healthy condition. Quantity of air passing at inlet when last measured was 82,110 feet and I usually find about 20,000 feet passing at the face of each entry.

Darr.—They have during the year erected two small fans which may answer the purpose for a short time, but they are not of the kind to produce any permanent results. When last inspected the mine was in pretty good order. Quantity of air passing at the outlet 35,000 feet.

MINES ON THE LITTLE SAW MILL RUN RAILROAD.

Enterprise is in first class condition in all respects. A new twenty-five foot fan of the Guibal pattern, made by the Vulcan Iron Company is now in operation and giving good results. Both the fan and everything connected with it is substantially built, being completely enclosed with solid masonry. The quantity of air passing, when last measured, was 130,000 cubic feet per minute (with one inch of water gauge). Speed of fan forty-three revolutions showing that the horse power expended on the ventilation was equal to 20.5—an excellent result which speaks well for the air-ways and system of distribution of the air-current adopted; especially so when we take into consideration that the mine is one of the largest and most extensive in the district, and the owners are deserving of commendation for the energy and tact displayed in making their mine a model one.

Venture.—The ventilation in this mine is far below the requirements. I have on several occasions requested the operator to provide a more powerful apparatus, but so far my requests have been unheeded, or at any rate have not been acted upon; but it is absolutely necessary that something be done to increase the flow of air in and through the mine in the immediate future. Quantity of air in circulation, when last measured, was 22,770 feet per minute.

Fox.—They have made some improvements upon the stack of the old furnace shaft, but the increase to the ventilating current caused thereby is very slight and will prove only a make-shift at the best. At the time

of my last visit I found several of the entries being driven a long distance in advance of the air-current and the men, as a result, were compelled to work in a very impure atmosphere. Quantity of air at the outlet 12,600 feet.

MINES ON THE PAN HANDLE RAILROAD.

Idlewood.—At each visit to this mine I found the crop of mud and water to be very prolific, but ventilation was not over abundant in any part of the mine. If the doors, air-ways and furnace were properly attended, a fair amount of air could be carried forward to face of mine, but the condition of things, as observed at each of my visits leads me to believe that everything pertaining to health, safety and comfort is usually left to take care of itself. Quantity of air in return air-ways when last measured, 15,000 feet.

Grant.—On my last visit I found the air of the main tunnel in the third hill to be so heavily charged with black-damp, as to nearly put out my light. I requested the mine-boss to erect bulk heads in the openings leading to the old abandoned workings so as to prevent the escape of the black-damp from such old workings into the hauling road. The air-current from the main tunnel has no connection with the current which is propelled through the working parts of the mine. All the coal is being mined from the fourth hill, which was found in reasonably good condition with a volume of 25,000 feet of air at the outlet per minute.

Fort Pitt was found in good order, all parts well ventilated. Quantity of air in circulation, 22,000 feet.

Cherry was also in fairly good condition, with a volume of air equal to 12,000 feet passing through the workings, and 5,000 feet passing from pit mouth direct to the furnace; this amount being necessary to keep the main tunnel free from black damp.

Champion.—This is a new operation. They have erected a small furnace to produce the ventilation until such times as arrangements can be made to provide a permanent apparatus. The mine at the present time is in fairly good order. Quantity of air at outlet, 17,150 feet. This mine is opened in the centre of a large coal field and is likely to become very extensive in the near future.

Nickel Plate.—This mine is still in the same condition as it was at the time of my last report, namely, "is perforated in all directions with oil wells," and to my way of thinking cannot be considered as being in a safe condition. Oil is still leaking into the mine from the solid coal and through the broken strata. I have at each visit repeated my previous instructions to keep a close watch daily upon all points of the mine and to use every precaution to prevent disaster. Quantity of air passing, 44,000 feet. The Brier Hill mine, operated by the same company, is now in the same condition as the Nickel Plate mine as regards danger from the oil wells, a number of which are drilled through the

working chambers and other parts of the mine. In fact in one place we found a well directly in the centre of the main air-way, and the gas could be heard rushing up through the casing of the well, making a sound similar to that of high pressure steam when escaping from a boiler. A new shaft has been sunk at the face of the mine and a steam boiler placed in position to generate steam to run the pump. A new ventilating furnace will also be erected at the bottom of this shaft, after which the old furnace will be abandoned. Quantity of air in circulation when last inspected was 40,000 feet.

Mansfield and Erie.—At the time of my last visit to this mine I found most of the rooms were turned away from the entries in advance of the air current, consequently the men were working in a very impure atmosphere. Besides this, the poisonous fumes from an impure oil used by the miners for lighting purposes, together with large volumes of powder smoke produced by the excessive blasting of the coal, rendered the atmosphere in the working parts of the mine unfit for the men or animals to breathe. Quantity of air at outlet, 10,500 feet.

Boyd.—During the early part of the year the condition of this mine was not of the best, but at the time of my last visit it was much improved, and all parts of the mine were found to be in reasonably good order. Quantity of air in circulation, 20,000 feet.

Oak Ridge.—The ventilation in this mine is somewhat improved since the early part of the year. but it is now no better than it should be; in fact, the volume of air in circulation is below the requirements. Quantity of air passing in the return air-way at the time of last inspection was 9,000 feet per minute.

National is in reasonably good order, excepting that the mine atmosphere is vitiated by the fumes of impure oil, and by large volumes of powder smoke produced by the excessive blasting of the coal. They have sunk a shaft at the face of the mine for pumping and ventilating purposes. A furnace will be erected at the bottom of this shaft which will produce ample ventilation for all purposes. Quantity of air in circulation when last measured, 12,160 feet.

Star.—This mine is idle at the present time and has been for some time past. During the early part of the year, when it was in operation, its condition was not by any means satisfactory. This is one of the places where the iron hand of a stringent mining law will have to be felt before the health and safety of the men will be properly cared for. It has always been run on the make-shift system, which generally means no system at all, and especially so in regard to ventilation. The fumes from impure oil and from excessive blasting, together with the fact of an insufficient ventilating current, all combine to make the condition of the mine atmosphere intolerable.

Willow Grove.—This mine is in fairly good order. Quantity of air in circulation when last measured was 30,200 feet per minute, but in some

parts of the mine the current was heavily charged with powder smoke and the fumes from impure oil.

Laurel Hill Nos. 1, 2 and 4.—Nos. 1 and 4 are ventilated by a 25′ Brazil fan of the Guibal type, excepting a new division opened west of No. 1 workings, which is ventilated by a small Champion fan, placed near the pit mouth, and taking its inlet from a shaft which has just been sunk at the face of the new workings. Total quantity of air passing in both divisions of Nos. 1 and 4 combined when last measured was 87,800 feet. The ventilation in No. 2 is produced by two small fans which were when last measured, passing,an aggregate volume of air equal to 36,300 feet per minute, but this amount is hardly sufficient for this mine wherein explosive gas is at times generated very freely. The atmosphere of each of these mines is excessively vitiated by the poisonous vapors produced by excessive blasting, and by the miners burning crude petroleum oil, and as no amount of persuasion will induce them to give up this pernicious habit, we can only hope that a law will be enacted that will put a summary stop to it.

Jumbo No. 1.—A 20′ fan of the Guibal pattern has been provided at this mine. At the time of my last visit it was producing 53,670 feet of air, with 0.75 of an inch water gauge. The air at present is coursed around the workings in one current, but the intention is to ventilate the mine on the split system in the near future, after which it is to be expected that the fan will give much better results. All parts of the mine are in good condition. The fan formerly in use at this mine was removed to No. 2 mine, where it is now in operation and giving very fair results. Quantity of air produced in No. 2 mine, when last measured, was 31,000 feet. This mine is also in very fair condition.

Black Diamond.—There is nothing about this mine to be commended, as everything is on the make-shift system, or rather no system at all. The only thing that seems to be done methodically is the evasion of the requirements of the law.

MINES ON THE CHARTIERS VALLEY RAILROAD.

Mansfield No. 2.—The manager of this mine has been busy all through the year driving air-ways to improve the ventilation, which are now near completion. Two airway shafts will be sunk at the face of the mine in the near future, and a more powerful ventilating apparatus provided. After this is done I think the ventilation of the mine will be brought up to a proper state of efficiency. Quantity of air passing in the return airway, when last measured, was 37,500 feet per minute.

Nixon is in very fair condition, all parts of the mine being well supplied with air. They have a good ventilating furnace, which was producing 60,000 feet of air-current per minute when last measured.

Leasdale.—The ventilation in this mine during the early part of the year was very defective, but they have since made a connection with the

Summer Hill mine which has greatly improved matters for both mines. Quantity of air passing through this mine to the Summer Hill mine, when last measured, was 20,000 feet per minute.

Summer Hill is in very fair condition. All parts of the mine are reasonably ventilated, excepting that the air-current is polluted by powder smoke and the fumes from the black strap and other impure oils used by the miners for lighting purposes. Quantity of air passing at the inlet, when last measured, was 33,500 feet per minute. The drainage is also reasonably good.

Bower Hill.—The condition of this mine as regards drainage and the amount of air produced is fully up to the requirements. On each inspection I found all parts of the mine to be well ventilated. Average volume of air at face of entries 10,000 feet, and 45,000 feet was passing at the outlet.

Bridgeville.—They are opening into a new coalfield in the third hill. The workings in the first and second hills are nearly finished. I found that they were driving entries for a long distance in the new coalfield without ventilation; in fact, making provision for a supply of air-current seems to have been a matter not seriously considered in relation to the new developments. Quantity of air passing through the workings in the second hill 11,000 feet.

Hastings' Slope.—As a rule the distribution of the air-currents in this mine is more or less defective. The entries are also usually driven too far in advance of the air. At the time of my last visit the condition of the mine was better than for some time past. Quantity of air at outlet 12,000 feet.

Boon.—The ventilation in this mine is polluted by the fumes produced by the burning of impure oil for lighting purposes. If this could be prevented, then the quantity of air in circulation, which is equal to 20,790 cubic feet per minute, would be sufficient to maintain a pure atmosphere in all parts of the workings.

Allison is in much better condition than formerly. Quantity of air passing through the mine, when last measured, was 27,000 feet per minute, which is a large increase over the quantity previously produced. They have enlarged the air shaft and erected a new stack on top of the same, which is the cause of the improvement.

Enterprise No. 2.—The general condition of this mine is favorable. All parts of the workings are very well ventilated. The main entries are being driven to the dip, on which account it is difficult to keep them free from water. Quantity of air in circulation, when last measured, 21,180 feet per minute.

Morgan, Standard, and Creedmore Shaft are all new openings, neither of which is sufficiently advanced to admit of a general description.

Ridgway Bishop.—This is also a new opening. The coal is reached

by a slope being sunk through the strata at an angle of about 11° descent for a distance of 700 feet. A shaft is also sunk for ventilation, on top of which they are at the present time erecting a large ventilating fan. All appliances provided for hoisting and dumping the coal, likewise the ventilating apparatus, are of a very substantial character, far in advance of any other operation in the immediate vicinity, and judging from present indications, the mine is to be made a model one. Hitherto locked safety lamps have been exclusively used, but as the airways are now all connected, it is considered safe to use open lights for the future.

MINES ON THE P. C. & Y. RAILROAD.

Essen was in reasonably good condition when last inspected. Quantity of air in circulation 30,000 feet per minute, but a large percentage of this was lost by leakage through doors and stoppings before it reached the face of the mine. The current in parts of the mine was also polluted by powder smoke and fumes from impure oil.

Beadling.—The quantity of air passing through the mine workings, when last measured, was 32,500 feet, but in some of the entries the current was vitiated to such an extent by powder smoke and poisonous fumes, caused by the excessive blasting of the coal, and the burning of impure oil, as to make it very oppressive to breathe and extremely injurious to health.

O. I. C.—They have built a small ventilating furnace during the year, which was at time of last inspection, producing 20,000 feet of air per minute. The mine was at that time found to be in reasonably good condition.

Powers.—The ventilation at the face of the mine is slack. Total quantity of air in circulation at the time of my last visit was 30,500 cubic feet per minute, which I do not consider sufficient for this mine; besides which, a considerable portion of the total volume is lost from leakage which cannot be considered as part of the effective ventilating current. A more powerful apparatus is needed in order to ventilate the workings sufficiently. On each visit I found a number of places on the main, and some of the cross entries, in a dangerous condition showing that the officials were lax in their management of essential details.

Federal Spring was in reasonably good order, when last inspected. Quantity of air in the return airway 22,400 feet per minute, the same being well distributed to face of mine. If the furnace is properly attended to, the above quantity of air can be maintained, which will keep the mine in a reasonably healthful condition.

Beach Mount is in much better condition than formerly, but the air-current at face of mine is still rather slack. Quantity of air at return airways when last measured, 18,000 feet per minute.

Federal is in very fair condition. All parts of mine are pretty well supplied with fresh air. Quantity of air in circulation 40,000 feet per minute.

MINES ON THE MONTOURS RUN RAILROAD.

Beach Cliff and Montour are the only mines opened on the above railroad. Both mines, when last visited, were found in a very fair condition. Quantity of air passing in each mine was 33,000 and 40,000 feet per minute respectively, the same being in each case pretty well distributed.

Moon Run Mine.—This is the only operation on the Moon Run railroad. The mine is worked in three divisions, all the coal being dumped at the same tipple. Three furnaces are used to produce the ventilation, but they are at the present time sinking a shaft and will build a large furnace to ventilate the first and second divisions which will soon be connected. Aggregate volume of air in circulation, when last measured, 73,900 feet per minute.

The mines west of the Allegheny river are five in number, namely: Natrona, Brakenridge, Hites, Pine Creek, and Glenshaw. At the time of my last visit the three first named were in fair condition, but in the other two the ventilation at the face of the workings was not satisfactory, a large quantity of the air being allowed to pass direct to the return airway through imperfect stoppings and by reason of the door being left open. Quantity of air passing in each mine, in the order given above, was, when last measured, 9,000 feet, 15,980 feet, 10,000 feet, 25,000 feet and 5,000 feet, respectively.

DESCRIPTION OF FATAL ACCIDENTS FOR THE YEAR 1892.

Andy Burgman, miner, was killed by a fall of coal and slate in the West Newton mine, on January 2. This man had just cut through the pillar at the face of his room in order to work back on the rib. He had worked back about eight feet, but had not taken the slate down, neither had he set any props to it for protection. He had, just previous to the accident, fired a blast in the coal which loosened both coal and slate, but did not dislodge it. He then went back to work under the loose slate and in front of the broken coal, with the intention of taking down a small quantity of coal to finish loading a car which was standing in his room nearly loaded, and this careless act, on his own part, cost him his life, for he had only just stepped in front of the broken coal when both the slate and coal fell upon him with fatal results.

Michael Andurski, a Hungarian miner, died on January 23, from injuries received in the Laurel Hill No. 2 mine on December 14, 1891. This accident was not reported to me for some time after its occurrence, but from what I could learn, it was caused by the man having failed to set props under a dangerous piece of slate. He was a stranger to coal mining and was not competent to protect himself.

John McIntire, miner boy, was killed by the dilly trip on January 23, in the Mansfield No. 2 mine. The boy, with a number of other persons, was riding from work on the truck connected to the back end of the dilly-trip, and a lump of coal fell from one of the full cars on to the track and threw the truck from the rails while it was traveling at a high rate of speed. The boy was thrown from the truck and dragged for some distance and was dead when picked up. (The mine rules forbid any person to ride on the full trips.)

Mike Seabo, a Hungarian miner, was killed by fall of coal and slate in the Darr mine, on February 11. The deceased, with another man, was working in a room. They had fired a blast which brought down the coal that was undermined, and also broke other coal and slate which was not undermined, and the deceased was mining this broken coal, when both the coal and slate fell upon him with the above result. If a sprag had been set under the coal, and a prop set to the slate for protection, as should have been done, the accident would not have occurred, but neither of the men were skilful miners, and were ignorant of the danger and of the proper safeguards to be used for self protection.

Ludwig Catcher, miner, was fatally injured by a premature blast on March 28, in Beach Cliff mine. He died one week after the accident. The deceased was engaged, with several other men, in blasting down the roof in one of the entries, and the evidence of the parties working near him went to show that after charging the blast, he either bent or broke off the end of the squib before lighting it, and consequently had not time to retreat to a safe place before the discharge of the shot. The matter of bending or breaking the match end of a squib so as to cause the shots to explode little sooner, is a very dangerous practice, but it is often indulged in by a large number of miners.

Peter Deliant, miner, was killed by a fall of slate in the Brier Hill mine on April 14. This man's working place was found to be well timbered and the slate which fell upon him broke from over the prop which was set under it. The occurrence was purely accidental.

Thomas Shank, miner, was killed in the Powers mine on April 15. It would appear from an examination of his room that he had set a sufficient number of props for protection, but by some means while throwing coal across his room to load his car, he struck one of the props with a lump of coal, knocking it down and liberating a large piece of slate which fell upon him, causing instant death.

James Stoker, mule driver, was fatally injured by being struck on the temple by a flying fragment of a broken hook which was used to connect part of the empty trip to the full dilly-trip. The whole of the empty trip is run by gravity from the pit mouth to No. 6 flat. A part of the empty trip is then coupled to the full trip and pulled back up grade to No. 5 flat, a hemp rope with iron hooks attached being used

for coupling. It would appear that the deceased failed to make the proper connections and that the extreme point of the hook only was connected to the drawbar of the car and that the sudden strain put upon the coupling when the trip moved forward caused the hook to spread and break, the broken part striking the deceased as above described. The man did not appear to be seriously injured and continued at his work for several hours after being struck when he went home complaining of a severe pain in the head, and in spite of all that could be done for him he died in about eighteen hours after. This accident occurred in the Boston No. 1 mine, on April 28.

Paul Putt, mule driver, was fatally injured in the Laurel Hill No. 1 mine on May 7, and died the next day. Was injured by being crushed between a coal car and a post which was set on the side of roadway leading into a room. No one saw the accident and it is rather uncertain how it occurred, but it is supposed that he was riding on the front end of the full car with his body partly projecting beyond the side, and he came in contact with the post with such violence as to cause death.

Andy Black, a Hungarian miner, was fatally injured by fall of slate in the Darr mine on May 7. The piece of slate which fell upon him would weigh about 500 pounds, and was partly surrounded by a "slip" or natural separation from the surrounding strata. The man had evidently not examined or sounded the slate, or he would have perceived that it was unsafe, but the probability is that he was not competent to detect the danger; this view of the matter being borne out by the condition of his room in general. The man died in about two months after being injured.

Edward Chadwick, door boy, was killed by being crushed between empty cars and side of entry, in the Federal mine, on May 13. This boy, instead of remaining at his door, was going about the mine with the driver, and at the time of the accident was riding on the front end of the empty trip and when passing over a room parting, the cars jumped the track, throwing the boy against the side of the entry with such violence as to cause his death. The practice of the door boys leaving their doors to wait upon the mule drivers is very often indulged in, but the drivers are principally to blame for allowing them to do so.

Joseph Kerey, a Hungarian miner, was killed by fall of slate in his room on May 20, in the Ocean No. 2 mine. It would appear from my investigation that the man had made an effort to take the slate down, but failing to do so, he had either sat down or commenced to work under it without having taken the precaution to set a prop for safety; but the man had only been in the mine for a very short time and did not know whether he was in danger or not, and had no idea how to protect himself.

John Fredary, a Hungarian miner, was killed by fall of slate in the Beach Cliff mine on May 21. This man was carelessly working under a

large mass of loose slate beside a clay vein, without having set any props under it for a safeguard. The fact of the slate being liberated to the clay vein should have been sufficient warning to have put him on his guard, but he seems to have worked along heedless of the danger.

Thomas J. Price, fire-boss, aged 27 years, was killed by explosion of gas in the Ridgway Bishop mine, on the morning of August 1, while making his examination of the workings before the miners went to work. It is unknown how the explosion occurred, as there was very little evidence from which to draw conclusions. This mine at this time was generating explosive gas very freely and no open lights were allowed in the mine. The deceased was in the habit of taking with him during his rounds of examination both the Clanney and Davy safety lamps and he had both lamps with him on this occasion. It is generally supposed that either a piece of slate fell and broke the Clanney lamp, bringing the gas down with it, or that he lifted one of the lamps into a body of gas and accidentally fell it, causing the flame to pass through the gauze and ignite the gas by reason of the lamp passing through the explosive mixture at a high velocity. Both lamps were badly broken by the concussion, but both parts of each lamp were found to be firmly screwed together. The inside gauze of the Davy lamp, although disconnected from the other parts, was found to be without any defect in its apertures or construction. The gauze of the Clanney lamp could not be found. I found upon investigation that the deceased had spent nearly a half hour taking both lamps apart and examining and cleaning their several parts before he went into the mine on the fatal morning. At this time the entry from the airshaft was not connected with the main slope and the ventilation was conducted forward by means of wooden boxes and a small force fan.

Joseph Howark, a Hungarian miner, was killed by fall of coal and slate in the Ocean No. 2 mine on August 2. This man had fired two shots in the coal on the previous evening which dislodged part of the coal and left part of it standing in a broken condition. It would seem that he was engaged sheering the broken coal on the roadside of his room when both coal and slate fell upon him, causing injuries which proved fatal in about one week afterward. A sprag set under the broken coal while mining the same would probably have prevented the accident.

William Mulbridge, miner, was killed by fall of slate in the Laurel Hill No. 1 mine, on August 3. This man in company with another miner was blasting and loading the coal, after it was undermined by the mining machine. It was shown at the investigation that they both knew of the danger and had spoken to each other in regard to it, but the deceased either forgot himself, or carelessly went under the loose slate for some purpose, when it fell upon him, and his butty, when returning to the room after a few minutes' absence, found him

under the slate, dead. The men made a fatal blunder in not taking the slate down or securing it with props upon the discovery of the danger.

Piero Ambrosio, an Italian miner, was fatally injured in the Beadling mine on August 6. This man was crushed between a full car and a prop on the main change parting, while trying to jump on a full trip while in motion. He had been warned by the driver not to attempt to ride on the full cars, and he (the driver) had actually prevented him from doing so on two occasions; but he made a third attempt to jump on the trip, unknown to the driver, the result being that he lost his life, dying two days after the accident. The man had only worked in the mine a few days and had no conception of the danger.

Chales Jeraff, miner, was killed by fall of slate in the O. I. C. mine on October 18. The slate had enough props set under it, but they were imperfectly set, without cap pieces, and the result was that the props, three in number, were thrown out by the weight of the slate. If the man had been provided with proper cap pieces to place on top of the props the probability is that he would not have been killed; for it is an utter impossibility to set props in a safe manner under the draw slate unless a suitable cap piece is placed on top of the prop. The fault did not lie with the deceased, for he could only make use of what he had, but if the operator had provided the necessary timber supplies we must suppose that the miners would make use of them for their own protection, or at least those of them who know how to do so.

Alfred Ashman, miner, was killed at the Forest Hill mines on October 22 under the following circumstances: A water drain had been blasted about 5 feet deep and several hundred feet in length, from the drift mouth into the mine, and pipes put in the bottom of the ditch, after which it was filled up with dirt and rock. When this was done it was found that the drain was not deep enough to take the water from the mine, and in order to make it deeper they placed scantlings covered with boards on top of the ditch and cleaned the loose dirt from said drains and placed it on top of the boards so that the men could work underneath to blast the ditch deeper, and while so engaged some of the scantling, which had been displaced or broken by a blast, gave way, allowing a quantity of loose debris to fall upon the deceased, completely burying him, and before he could be extricated death had resulted from suffocation. The other person working with him was outside of the mine eating his dinner at the time, consequently the man had been under the debris for some time before any one knew of it.

John Kingsley, general helper, was assisting the engineer to tighten a bolt on the bed of the air compresser while the engine was in motion, and while so engaged the wrench slipped and Kingsley fell against the fly wheel and was drawn through the wheel pit, death being instantaneous. This accident occurred at the Laurel Hill mine, October 22.

Scrill Boqullion, miner, was fatally injured in the Brier Hill mine, on August 16, by being run over by the dilly-trip. There was plenty of room to get off the road a short distance either way from the point of accident, but it would appear that the man made no effort to reach a place of safety, but stood still on the track while the trip was approaching at a high rate of speed. Knowing the trip was approaching he should have stepped into a refuge hole (of which there were plenty) before the cars were so close to him, but he was a stranger in the country and had probably never seen a dilly in operation before, and had no idea of the danger.

Andy Borafskie, miner boy, aged 14 years, was killed by a fall of slate in the Oak Ridge mine, November 22. This boy was working with his father in a room. They were working under a large mass of loose slate (measuring 12′×16′×11″) without any props whatever being set under it for protection. An accident under such circumstances was inevitable. The father was either incompetent to recognize the danger, or otherwise he was grossly careless (probably the former). It is my private opinion that instead of the boy being 14 years of age he was not more than 10, but the class of people working in most of the mines in this section will swear to anything in regard to the age of their boys when they wish to take them into the mines.

Guby Carey, miner, was fatally injured by fall of slate in the Brier Hill mine, on December 3, but lived until December 13. He was struck on the hip by a small piece of slate while working in his room. This man had been seriously injured in the lower part of the body some years before, and he had never quite recovered from its effects, and the second injury occurring to the same parts of the body, although slight in itself, was sufficient to cause death.

George Austen, a colored miner, was killed by fall of slate in the Nickle Plate mine, on December 21. It appears that Austen, with his butty, had fired a blast in the coal on the previous evening, which had knocked out a prop from under a large piece of slate, leaving it unsupported, and on the morning of the accident, instead of resetting the prop or taking the slate down, he went under it to work, when it fell upon him, causing instant death.

TABLE 1.—*Showing Location of Collieries in the Seventh Bituminous Mine District.*

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Allison,	J. V. H. Cook & Son,	Washington,	J. V. H. Cook,	Canonsburg.
Bower Hill,	Imperial Coal Company,	Allegheny,	William Bald,	Imperial.
Beach Cliff,	do. do.	do.	do. do.	do.
Bellwood,	Munhall Brothers,	do.	John Munhall,	Munhall.
Beck's Run,	H. G. Burghman, as trustee,	do.	Julius Esmiol,	Redman Mills.
Beadling,	Beadling Brothers,	do.	William Beadling,	Beadling.
Bridgeville,	A. J. Shulte,	do.	A. J. Shulte,	Bridgeville.
Boyd,	Boyd Coal Company,	do.	Jesse H. Sanford,	Walker's Mill.
Boston Nos. 1 and 2,	W. H. Brown's Sons,	do.	Adam Kell,	McKeesport.
Beachmount,	Beachmount Coal Company,	do.	J. C. McMichael,	Hickman.
Boon,	Canonsburg Coal Company,	Washington,	E. A. Upstill,	Canonsburg.
Brier Hill,	Patterson & Sauters,	do.	J. D. Sauters,	McDonald.
Black Diamond,	Thomas Taylor,	do.	Thomas Taylor,	Midway.
Brakenridge,	Brakenridge Coal Company,	Allegheny,	Alfred Hicks,	Leechburg.
Castle Shannon,	Castle Shannon Railroad Company,	do.	O. A. Rodgers,	50 Carson street, Pittsburg.
Champion,	Robbins Coal Mining Company,	do.	F. L. Robbins, gen. man.,	Penn Building, Pittsburg.
Cherry,	Heirs of Morris McCue,	do.	—— Boyle,	Third avenue and Fry street, Pittsburg.
Creedmoor shaft,	Ohio and Pennsylvania Coal Company,	Washington,	John Nixon,	Cecil.
Dravo,	Lake Shore Gas Coal Company,	Allegheny,	C. Wisser,	Robbins.
Darr,	Osborne, Saeger & Co.,	Westmoreland,	A. W. Osborne,	West Newton.
Enterprise,	Hartley & Marshall,	Allegheny,	Roger Hartley,	South Side, Pittsburg.
Essen,	Essen Coal Company,	do.	Thomas Renshaw,	Essen.
Enterprise No. 2,	Pittsburg and Belle Vernon Coal Company,	Washington,	Charles Jenkins,	Arden.
Federal,	Federal Coal Company,	Allegheny,	Wilfred Stewart,	Federal.
Fox,	Thomas Fox,	do.	H. McMurray,	Thirty-fifth ward, Pittsburg.
Federal Spring,	E. W. Powers,	do.	E. W. Powers,	Hickman.
First Pool,	F. P. M. Gas Coal Company,	do.	F. L. Robbins, gen. man.,	Penn Building.
Fort Pitt,	Fort Pitt Coal Company,	do.	A. McCrickart,	1010 Penn avenue, Pittsburg.
Forest Hill,	James W. Ellsworth & Co.,	do.	D. E. Lewis,	Suterville.
Glenshaw,	Glenshaw Coal Company,	do.	S. W. Spencer,	Glenshaw.
Grant,	Grant Coal Company,	do.	James Matthews,	Central Hotel, Pittsburg.
Hays Street Run Nos. 2 & 3,	H. G. Burghman, as trustee,	do.	J. Watson,	Hope Church.
Hastings slope,	Slope Mine Coal Company,	do.	W. J. Morgan,	Bridgeville.
Hites,	McFetridge Brothers,	do.	George McFetridge,	Hite.
Idlewood,	Steen Brothers,	do.	T. D. Steen,	Chartiers.
Jumbo,	Pittsburg Consolidated Coal Company,	Washington,	F. L. Robbins, gen. man.,	Penn Building, Pittsburg.
Laurel Hill Nos. 1 and 4,	W. P. Rend & Co.,	Allegheny,	John Rend,	McDonald.
Laurel Hill No. 2,	do. do.	Washington,	do.	do.
Leasdale,	Gregg Brothers,	Allegheny,	Stephen Gregg,	Woodville.
Montours,	Imperial Coal Company,	do.	William Bald,	Imperial.
Mansfield No. 2,	Mansfield Coal and Coke Company,	do.	Daniel Boden,	Mansfield Valley.
Mansfield and Erie,	Chartiers Creek Coal Company,	do.		Hamilton Building, Pittsburg.
Midway,	Robbins Coal Mining Company,	do.	F. L. Robbins, gen. man.,	Penn Building, Pittsburg.
Moon Run,	Moon Run Coal Company,	do.	N. F. Sanford,	Moon Run.
Morgan,	Miller's Run Coal Company,	do.		Hamilton Building, Pittsburg.
National,	National Coal Company, Limited,	do.	A. A. Hadden,	Noblestown.
Nixon,	Alex. Black Coal Company,	do.	W. H. Linsley,	Joint.

Natrona	Pennsylvania Salt Manufacturing Company	do	R. G. Ewer	Natrona.
Nickel Plate	J. D. Sauters	do	J. D. Sauters	McDonald.
Old Bower Hill	A. J. Shulte	do	A. J. Shulte	Bridgeville.
Ormsby	Birmingham Coal Company, Limited	do	Joseph Keeling	South Side, Pittsburg.
Oak Ridge	Oak Ridge Coal Company, Limited	do	C. W. Schluederberg	Fourth avenue, Pittsburg.
O. J. C.	W. J. Steen	do	W. J. Steen	Chartiers.
Ocean Nos. 2, 4 and 5	Youghiogheny River Coal Company	do	John F. Hoosack	Scott Haven.
Pacific	Lake Erie Gas Coal Company	do	do	do.
Powers	Chartiers Block Coal Company	do	William Baldwin	Federal.
Pine Creek	Robbins Coal and Coke Company	do	F. L. Robbins, gen. man	Penn Building, Pittsburg.
Port Royal No. 2	Port Royal Coal Company	Westmoreland	Isaac Brown	Fitz Henry.
Primrose	Pittsburg Consolidated Coal Company	Washington	F. L. Robbins	Penn Building, Pittsburg.
Ridgway Bishop	Ridgeway Bishop Coal Company	do		Lewis Block, Pittsburg.
Streets Run	Harrison Gas Coal Company	Allegheny	W. L. Nunemarrow	Hope Church.
Summer Hill	Frank Armstrong	do	Frank Armstrong	Pittsburg.
Southwest	Youghiogheny River Coal Company	do	John F. Hoosack	Scott Haven.
Star	Francis Mankedick	do	Francis Mankedick	Sturgeon.
Standard	Standard Coal Company	do	George Corde	Third and Wood street, Pittsburg.
Sarah	Douglas Coal Company	do	Edward Bell	Blythdale.
Venture	Saw Mill Run Coal Company	do	E. N. Wildman	818 Carson street, Pittsburg.
Walton	Joseph Walton & Co.	do	Morris Capp	Carrie.
Willow Grove	Willow Grove Mining Company	do	F. L. Robbins, gen. man	Penn Building, Pittsburg.
West Newton No. 2	West Newton Coal Company	Westmoreland	M. F. Allison	West Newton.

TABLE NO. 2.—*Giving the total number of tons of coal mined and tons of coal produced in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the Seventh Bituminous District for the year ending December 31, 1892.*

NAMES OF COLLIERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Allison	Washington	37,687	.....	37,687	201	84	...	...	25	1	8	...	.....
Bower Hill	Allegheny	92,246	.....	92,246	200	165	...	1	100	...	10	...	.....
Bellwood	do.	79,000	.....	79,000	120	191	...	...	...	1	12	...	.....
Beck's Run	do.	22,584	.....	22,584	32	172	...	...	...	4	14	...	.....
Beadling	do.	165,645	.....	165,645	243	274	1	...	600	1	11	...	.....
Beach Cliff	do.	92,067	.....	92,067	205	165	2	3	100	2	8	...	.....
Bridgeville	do.	73,465	.....	73,465	230	93	...	1	14	...	4	...	.....
Boyd	do.	41,293	.....	41,293	.....	91	...	...	...	2	7	...	.....
Boston No. 1	do.	99,821	.....	99,821	111	206	1	...	...	5	16	...	.....
Boston No. 2	do.	63,109	.....	63,109	113	179	...	...	...	3	10	...	.....
Beachmount	do.	73,000	.....	73,000	300	121	...	...	...	1	5	...	.....
Boon	Washington	47,841	.....	47,841	160	117	...	2	4	1	6	...	.....
Brier Hill	do.	113,829	.....	113,352	265	193	3	1	...	2	10	...	.....
Black Diamond	do.	10,234	.....	10,234	200	9	...	...	20	1	2	...	.....
Brakenridge	Allegheny	22,750	.....	22,750	301	26	...	...	250	...	1	...	.....
Castle Shannon	do.	55,056	.....	55,056	280	97	...	...	...	...	7	...	.....
Champion	do.	73,320	.....	73,320	222	152	...	2	...	2	10	...	.....
Cherry	do.	47,000	.....	44,746	247	77	...	...	...	...	8	...	.....
Creedmoor shaft	Washington	1,600	.....	1,600	75	39	...	...	3	2	2	...	.....
Dravo	Allegheny	47,290	.....	47,290	216	96	...	...	...	...	5	...	.....
Darr	Westmoreland	171,200	.....	171,200	.....	163	2	2	...	5	7	...	.....
Enterprise	Allegheny	185,927	.....	185,927	238	315	...	1	260	3	15	1	.....
Essen	do.	139,526	.....	138,815	216	235	...	2	...	2	10	...	.....
Enterprise No. 2	Washington	44,519	.....	44,519	.....	108	...	1	...	2	4	...	.....
Federal	Allegheny	47,865	.....	47,865	244	136	1	...	5	...	10	...	.....
Fox	do.	20,404	.....	20,404	275	□ 32	...	...	...	1	2	...	.....
Federal Spring	do.	80,000	.....	80,000	.....	□ 172	...	2	...	...	9	...	.....

First Pool	do.	174,725		174,725	2483	224		2	400	1	12		
Fort Pitt	do.	42,532		42,532	180	78					11		
Forest Hill	do.	2,000		2,000		18	1		30	1	1		
Glenshaw	do.	11,500		8,500	292	28			75		4		
Grant	do.	58,643		58,643	182	107	1				16		
Hays Street Run Nos. 2 and 3	do.	68,885		68,885	72	279				2	27		
Hasting's slope	do.	48,950		45,245	166	60				2	6		
Hites	do.	68,921		68,921	265	76			900		12		
Idlewood	do.	42,145		42,145	250	95		1		1	9		
Jumbo	Washington	186,603		186,603	255	318		1		8	14		
Laurel Hill No. 1	Allegheny	180,000	12,000	180,000	290	294	2	5		14	16		31
Laurel Hill No. 2	Washington	134,000		134,000	275	214	2	4		8	22		
Laurel Hill No. 4	Allegheny	84,000		84,000	230	107		1		1	8		
Leasdale	do.	14,300		14,300	215	35					2		
Montours	do.	79,208		79,208	205	146			100	2	18		
Mansfield No. 2	do.	231,900		231,900	231	320	1	4		2	18		
Mansfield and Erie	do.	24,337		24,337	217	72		1			7		
Midway	Washington	7,196		7,196	75	50				2	3		
Moon Run	Allegheny	196,917		196,840	240	314		1			21		
Morgan	do.	15,000		15,000	150	37				1	1		
National	do.	56,571		56,571	233	91				2	4		
Natrona	do.	45,856			300	65			398	1	12		
Nixon	do.	70,000		70,000	203	148		3	55		12		
Nickelplate	do.	94,843		93,821	236	200	1	2		2	12		
Old Bower Hill	do.	2,729		2,729	45	17					1		
Ormsby	do.	98,984		98,984	279	193		2		4	13		
Oak Ridge	do.	74,090		74,090	265	100	1			1	5		
O. I. C.	do.	44,300		44,300	200	74	1	1			3		
Ocean No. 2	do.	243,102		243,102	300	366	2		397	2	17		
Ocean No. 4	do.	39,375		39,375	87	189			100	1	10		
Ocean No. 5	do.	148,217		148,217	270	202		1	280		10		
Pacific	do.	145,035		145,035	276	208			300		15		
Powers	do.	127,411		127,211	203	211	1			2	12		
Pine Creek	do.	71,990		71,990	214	105			484	2	9		
Port Royal No. 2	Westmoreland	155,856		155,856	246	196		5	680	6	14	1	
Primrose	Washington	119,325		119,325	191	216		1		3	10		
Ridgway Bishop	do.	11,921		11,921	83	57	1	2	1,703	3	2		
Sarah	Allegheny	1,508		1,383	33	18					1		
Streets' Run	do.	45,866		45,866	168	79		1	5	1	5		
Summer Hill	do.	140,908		140,908	228	223				1	10		
Southwest	do.	5,161		5,161	50	33			57	1	2		
Star	do.	37,360		37,360	185	65					6		
Standard	do.	2,375		2,375	50	29				1	1		
Venture	do.	118,560		118,560	231	193				3	11		
Walton	do.	180,988		180,070	170	312				4	16		
Willow Grove	do.	112,671		112,671	218	243				2	10		
West Newton	Westmoreland	81,900		81,900		116	1			4	4		
Total		5,897,942	12,000	5,838,597	13,677	10,619	25	56	7,345	132	671	2	31

TABLE No. 3.—*Showing the number of each class of employes at each colliery in the Seventh Bituminous Mine District during the year 1892.*

NAMES OF COLLIERIES.	Location	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand total inside and outside.
		Inside foreman or mine-boss.	Miners.	Miners' boys under 16 years of age.	Day men.	Drivers and runners.	Doorboys.	Total inside.	Outside foremen.	Blacksmiths and carpenters.	Engineers and firemen.	Day men.	Superintendents, book-keepers and clerks.	Total outside.		
Allison	Washington	1	70	.	1	6	.	78	.	1	.	3	2	6		84
Bower Hill	Allegheny	1	140	5	3	4	2	155	.	2	.	4	1	7		162
Bellwood	do.	1	150	10	2	12	.	175	2	1	2	10	1	16		191
Beck's Run	do.	1	150	.	3	14	2	170	.	1	1	15	2	19		189
Beadling	do.	2	225	12	4	11	5	262	1	2	1	6	2	12		274
Beach Cliff	do.	1	125	8	3	7	1	145	1	2	1	15	1	20		165
Bridgeville	do.	1	75	.	3	5	1	85	1	2	.	4	.	7		93
Boyd	do.	1	175	2	1	6	1	86	.	2	.	3	.	5		91
Boston No. 1	do.	1	225	10	6	14	2	258	.	2	1	25	.	28		286
Boston No. 2	do.	1	137	4	1	11	.	150	.	3	.	12	.	15		165
Beach Mount	do.	1	95	10	1	5	.	112	1	3	1	15	.	20		132
Boon	Washington	1	99	4	1	5	.	110	1	3	1	9	1	15		125
Brier Hill	do.	1	150	10	6	10	1	178	1	2	1	2	1	7		185
Black Diamond	do.	.	7	.	1	.	.	8	.	.	.	.	.	.		8
Brakeridge	Allegheny	.	20	2	.	1	.	24	.	.	.	1	.	1		25
Castle Shannon	do.	1	70	4	3	6	.	84	.	2	.	9	1	12		96
Clairton	do.	2	100	14	9	10	1	136	1	2	1	10	1	15		151
Cherry	do.	1	58	3	2	5	.	69	1	2	.	4	.	7		76
Creedmoor shaft	Washington	1	90	1	2	.	.	93	.	2	.	6	1	9		102
Davis	Allegheny	1	75	4	2	6	1	89	.	1	.	4	.	5		94
Darr	Westmoreland	1	140	.	5	6	.	152	1	1	.	6	1	9		161
Enterprise	Allegheny	1	255	30	25	11	1	323	1	5	4	8	3	21		344
Essen	do.	1	200	8	2	9	2	222	1	3	2	5	1	12		234
Enterprise No. 2	Washington	1	90	.	4	4	1	100	.	2	2	2	.	6		106
Federal	Allegheny	1	120	.	2	5	3	131	1	2	1	4	1	9		140
Fox	do.	1	55	.	1	2	.	58	.	1	.	2	.	3		61
Federal Spring	do.	1	150	.	4	8	3	166	1	1	.	4	.	6		172
First Pool	do.	1	173	19	2	9	.	206	.	1	.	13	4	18		224
Fort Pitt	do.	1	62	.	2	4	.	69	1	1	.	4	1	7		76
Forest Hill	do.	1	12	.	.	.	.	13	1	1	.	3	.	5		18
Glenshaw	do.	1	18	2	1	4	.	26	1	1	.	.	1	2		28

Grant,	do.	1	75	10	2	9	2	99	....	1	....	6	1	8	107
Hays Street Run Nos. 2 and 3,	do.	2	225	....	2	22	1	252	1	2	2	20	2	27	279
Hastings' slope,	do.	1	45	....	1	4	....	51	1	1	1	5	1	9	60
Hites,	do.	2	50	6	3	5	2	68	1	1	....	5	1	8	76
Idlewood,	do.	1	75	2	1	7	2	88	....	3	1	3	....	7	95
Jumbo,	Washington,	2	225	26	13	20	6	292	1	4	6	15	....	26	318
Laurel Hill No. 1,	Allegheny,	1	200	12	12	15	5	245	2	5	10	30	2	49	294
Laurel Hill No. 2,	Washington,	2	150	14	9	15	5	195	....	3	7	8	1	19	214
Laurel Hill No. 4,	Allegheny,	1	80	3	5	8	2	99	....	1	1	5	1	8	107
Leasdale,	do.	1	25	....	4	2	....	32	1	1	....	1	....	3	35
Montours,	do.	1	105	15	3	8	1	133	....	2	2	8	1	13	146
Mansfield No. 2,	do.	1	250	15	9	12	5	292	1	9	5	12	7	28	320
Mansfield and Erie,	do.	1	60	....	1	4	1	67	1	1	....	2	1	5	72
Midway,	Washington,	1	40	....	1	3	....	45	1	1	1	2	....	5	50
Moon Run,	Allegheny,	1	270	....	5	14	4	294	1	4	....	13	2	20	314
Morgan,	do.	1	30	....	1	1	....	33	....	1	1	2	....	4	37
National,	do.	1	70	....	1	5	3	80	1	2	1	6	1	11	91
Nixon,	do.	1	125	8	....	6	....	140	1	3	....	3	1	8	148
Natrona,	do.	1	39	5	4	6	1	56	1	1	2	5	....	9	65
Nickel Plate,	do.	1	150	12	8	9	4	184	1	1	2	10	2	16	200
Old Bower Hill,	do.	1	10	1	1	1	....	14	....	....	....	2	1	3	17
Ormsby,	do.	1	130	15	7	11	2	166	2	3	6	14	2	27	193
Oak Ridge,	do.	1	80	3	2	5	1	92	....	2	1	4	1	8	100
O. I. C.,	do.	1	65	....	2	2	....	70	1	1	....	2	....	4	74
Ocean No. 2,	do.	1	299	25	8	13	1	347	1	3	1	13	1	19	366
Ocean No. 4,	do.	1	152	14	3	9	1	180	1	1	2	5	....	9	189
Ocean No. 5,	do.	1	166	15	3	8	1	194	1	2	....	4	1	8	202
Pacific,	do.	1	169	17	3	8	1	199	1	2	....	6	....	9	208
Powers,	do.	1	175	10	2	10	4	202	1	2	1	5	....	9	211
Pine Creek,	do.	1	75	5	4	7	....	92	....	2	2	8	1	13	105
Port Royal No. 2,	Westmoreland,	1	149	....	11	14	9	184	....	....	3	9	....	12	196
Primrose,	Washington,	1	175	8	7	9	2	202	1	2	1	9	1	14	216
Ridgway Bishop,	do.	2	40	1	2	2	1	48	1	2	2	3	1	9	57
Sarah,	Allegheny,	1	15	....	1	1	....	18	....	....	....	....	....	....	18
Streets' Run,	do.	1	55	4	2	5	1	68	....	2	1	8	....	11	79
Summer Hill,	do.	1	205	....	2	7	2	217	....	3	1	1	1	6	223
Southwest,	do.	1	25	2	....	2	....	30	1	....	....	2	....	3	33
Star,	do.	1	50	4	2	3	....	60	....	1	....	3	1	5	65
Standard,	do.	1	20	....	2	1	....	21	1	1	1	2	....	5	29
Venture,	do.	2	135	6	16	10	4	173	....	2	4	12	2	20	193
Walton,	do.	2	250	....	24	13	....	289	1	3	4	14	1	23	312
Willow Grove	do.	2	185	20	7	10	3	227	1	2	3	10	....	16	243
West Newton,	Westmoreland,	1	95	4	2	5	1	108	....	2	3	3	....	8	116
Total,		83	8,290	434	316	531	106	9,760	50	138	120	491	60	859	10,619

TABLE NO. 4.—*List of fatal accidents which occurred in and about the mines of the Seventh Bituminous Mine District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident
Jan. 2.	Andy Burgman.	Miner.	45	1	7	West Newton.	Westmoreland.	Killed by a fall of coal and slate.
23.	Michael Anduski.	do.	38	1	1	Laurel Hill No. 2.	Washington.	Died from injuries received December 14, 1891, by fall of slate.
23.	John McIntire.	Miner boy.	17	. .	. .	Mansfield No. 2.	Allegheny.	Killed by dilly-trip; was riding out on full trip.
Feb. 11.	Mike Seabo.	Miner.	38	1	4	Darr.	Westmoreland.	Killed by fall of coal and slate.
Mar. 12.	Winceny Trolisk.	do.	30	. .	. .	Grant.	Allegheny.	Fatally injured by fall of slate; died April 8.
28.	Ludwig Catcher.	do.	21	1	. .	Beach Cliff.	do.	Killed by slate from a powder blast.
Apr. 14.	Peter Deliant.	do.	. .	1	4	Brier Hill.	Washington.	Killed by a fall of slate.
15.	Thomas Shank.	do.	42	1	2	Powers.	Allegheny.	Killed by a fall of slate.
28.	James Stoker.	Mule driver.	25	1	1	Boston No. 1.	do.	Killed by the breaking of a coupling hook on dilly-trip.
May 7.	Paul Putt.	do.	15	. .	. .	Laurel Hill No. 1.	do.	Killed by being crushed between car and prop.
7.	Andy Black.	Miner.	38	1	4	Darr.	Westmoreland.	Fatally injured by fall of slate; died about two months after the accident.
13.	Edward Chadwick.	Door boy.	14	. .	. .	Federal.	Allegheny.	Killed by being crushed between car and side of entry.
20.	Joseph Kerey.	Miner.	35	1	3	Ocean No. 2.	do.	Killed by fall of slate.
21.	John Fredary.	do.	35	1	. .	Beach Cliff.	do.	Killed by fall of slate.
Aug. 1.	Thomas Price.	Fire-boss.	27	. .	. .	Ridgeway Valley.	Washington.	Killed by explosion of fire-damp.
2.	Joseph Honrak.	Miner.	24	. .	. .	Ocean No. 2.	Allegheny.	Killed by fall of slate.
3.	William Woolridge.	do.	. .	. .	. .	Laurel Hill No. 1.	do.	Killed by fall of slate.
6.	Pero Ambrosio.	do.	28	. .	. .	Beadling.	do.	Killed by being crushed between car and prop.
16.	Scull Boquillion.	do.	56	1	. .	Brier Hill.	Washington.	Fatally injured by being run over by a dilly trip; died next day.
Oct. 18.	Charles Jeraff.	do.	45	. .	. .	O. I. C.	Allegheny.	Killed by falling slate.
20.	Alfred Ashman.	do.	34	1	3	Forest Hill.	do.	Killed by loose debris falling upon him while working in a ditch.
28.	John Kingsly.	General helper.	30	1	1	Laurel Hill No. 2.	Washington.	Lost his life by falling against fly wheel of air compresser.
Nov. 22.	Andy Borafski.	Miner boy.	14	. .	. .	Oak Ridge.	Allegheny.	Killed by fall of slate.
Dec. 3.	Guly Carey.	Miner.	53	1	. .	Brier Hill.	Washington.	Fatally injured by fall of slate; died December 13.
21.	George Austin.	do.	30	. .	. .	Nickel Plate.	do.	Killed by falling slate.

TABLE No. 5.—*List of non-fatal accidents which occurred and about the mines of the Seventh Bituminous Mine District for the year ending December 31, 1892.*

Date of accident.	Name of Person.	Occupation.	Age.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Jan. 12.	Julius Carrem,	Miner.	23	Champion,	Allegheny,	Injured by fall of slate in his room.
11.	William Manville,	Miner boy,	16	Ocean No. 5,	do.	Leg broken, by falling on rail on the room parting
Feb. 3.	Charles Baley,	Miner.	25	Darr,	Westmoreland,	Hip broken by fall of slate.
13.	Wallace Weird,	do.	45	Champion,	Allegheny,	Two fingers cut off.
Mar. 1.	John Meredith,	do.	50	Idlewood,	do.	Back injured by lifting full car on the track.
8.	Jacob Flure,	do.	52	Nixon,	do.	Injured by fall of slate.
8.	George Bersick,	do.	..	Port Royal No. 2	Westmoreland,	Ankle-bone broken by fall of slate.
22.	———	do.	..	Brier Hill,	Washington,	Injured by explosion of fire-damp.
23.	T. Junski,	do.	35	First Pool,	Allegheny,	Leg broken by fall of slate.
April 4.	Peter Colling,	do.	25	Jumbo,	Washington,	Injured by fall of slate.
8.	John Weskemper,	do.	19	Laurel Hill No. 1,	Allegheny,	Three ribs broken by fall of slate.
8.	John Musco,	do.	31	Port Royal No. 2,	Westmoreland,	Leg broken by fall of coal.
14.	Pan. Kraus Kunder,	do.	25	Beach Cliff,	Allegheny,	Leg broken by fall of slate.
22.	Smith Huxby,	do.	32	Port Royal No. 2,	Westmoreland,	Burned by gas and powder.
27.	Hantney Cooney,	do.	56	Bower Hill,	Allegheny,	Leg broken by fall of slate.
29.	John Long,	do.	54	Nixon,	do.	Leg broken by fall of slate while drawing props in a pillar.
29.	John Aspinall,	Door-boy.	15	Mansfield No. 2,	do.	Arm broken by fall of slate while riding on full trip.
May 2.	Constant Bock,	Miner.	49	Laurel Hill No. 1,	do.	Jaw-bone broken and head injured by being kicked by mule.
3.	Amer Hands,	do.	..	Moon Run,	do.	Leg broken by fall of slate.
7.	R. Cook,	Mule driver.	19	Laurel Hill No. 1,	do.	Leg hurt by coal cars passing over him.
20.	Loiggi Vicentini,	Miner.	24	Primrose,	Washington,	Hip dislocated by fall of slate.
June 1.	Joseph Colburn,	do.	30	Port Royal No. 2,	Westmoreland,	Injured by fall of slate; died shortly afterwards, but not from the accident.
11.	Campbell Neil,	Mule driver,	23	Mansfield No. 2,	Allegheny,	Breast-bone broken and otherwise injured between car and entry pillar.
15.	Thomas Wollman,	do.	28	Nickel Plate,	do.	Legs injured between coal cars.
22.	William Wertmeir,	Miner.	42	Enterprise,	do.	Thigh broken by fall of slate.
July 2.	Jacob Bockarall,	do.	29	Boon,	Washington,	Leg brokeen by fall of coal and slate.
8.	Joseph Johnson,	do.	52	Mansfield No. 2,	Allegheny,	Collar-bone and several ribs broken (was jumping on full trip to ride out).
13.	John Thustzer,	do.	35	Ridgway Valley,	Washington,	Slightly burned by explosion of gas (was lighting his pipe through lamp-gauze).
16.	Paul Oblock,	do.	42	Boon,	do.	Leg broken by fall of slate.
26.	Mike Kolisky,	do.	40	Ridgway Valley,	do.	Head injured by fall of slate.
28.	Thomas Bierd,	do.	22	Laurel Hill No. 2,	do.	Injured by fall of slate.
30.	H. Delock,	do.	32	Laurel Hill No. 1,	Allegheny,	Back seriously injured by fall of slate.
Aug. 2.	Valentine Pastorious,	do.	19	Ormsby,	do.	Back injured by fall of horse-back roof
5.	James Peach,	Mule driver,	22	Essen,	do.	Arm broken by falling under dilly-trip.

TABLE NO. 5—*Continued.*

Date of accident	NAME OF PERSON.	Occupation	Age.	Name of Colliery.	Location County.	Nature and Cause of Accident
Aug. 8.	Thomas Skidmore.	Mule driver.	24	Laurel Hill No. 2.	Washington.	Injured by coal cars.
8.	Samuel Johnson.	Miner.	. .	Laurel Hill No. 4.	do.	Leg broken by fall of slate.
9.	John Nazilanik.	do.	28	Laurel Hill No. 2.	do.	Injured by fall of slate.
9.	Jos. Kalkstine.	Mine boy.	19	Mansfield No. 2.	Allegheny.	Leg broken by being kicked by a mule.
Sept. 6.	Henry Craze.	Miner.	30	Federal Spring.	do.	Leg broken by fall of coal and slate.
6.	Andrew Zentko.	do.	39	Beach Cliff.	do.	Leg broken and seriously injured otherwise by fall of slate
13.	James Richards.	do.	22	Streets' Run.	do.	Leg crushed by fall of coal and slate.
15.	John Krieger.	do.	20	Bridgeville.	do.	Leg broken by fall of slate.
17.	Dennis Devoney.	Mule driver.	14	Mansfield and Erie.	do.	Head hurt by fall of slate.
25.	Gable Zerio.	do.	25	Essen.	do.	Hip dislocated by being crushed between full car and side of entry.
26.	Robert Peach.	do.	14	Ormsby.	do.	Foot injured while trying to ride on dilly-rope.
26.	Wellington Fentil.	Miner.	40	Beach Cliff.	do.	Leg broken and otherwise injured by fall of slate.
30.	Charles Duchester.	do.	40	O. I. C.	do.	Leg broken; was run over by coal car.
Oct 10.	James Fleming.	Laborer.	16	Laurel Hill No. 1.	do.	Finger cut off by dilly-rope.
18.	George Boliver.	Miner.	20	Nixon.	do.	Leg crushed; fell under cars while riding on full trip.
20.	Earnest Hammond.	do.	14	Enterprise No. 2.	Washington.	Arm injured by falling under coal cars.
25.	Philip Datdz.	do.	33	First Pool.	Allegheny.	Received a concussion of the brain. His arm became en tangled in the belting of the machinery outside of the mine.
Nov. 3.	Andrew Zesinka.	do.	37	Darr.	Westmoreland.	Leg broken by a fall of slate.
8.	Jos. Roman.	Mule driver.	15	Port Royal No. 2.	do.	Arm injured by coal cars.
17.	Fred. Beardman.	Miner.	45	Federal Spring.	Allegheny.	Arm broken and hip dislocated by fall of slate.
Dec. 6.	Leon Suppy.	do.	28	Nickel Plate.	do.	Back injured by falling slate.
17.	Daniel Myers.	do.	23	Ridgway Bishop.	Washington.	Leg and back injured by cars running on him.
25.	Amety Employ.	do.	33	do.	do.	Burned by an explosion of gas.
25.	Louis Delestena.	do.	34	do.	do.	Burned by an explosion of gas.
30.	A. Savage.	Cager.	35	Laurel Hill No. 2.	do.	Slightly injured by coal cars.

EIGHTH BITUMINOUS DISTRICT.

(BEDFORD, CENTRE, CLEARFIELD AND HUNTINGDON COUNTIES.)

HON. THOMAS J. STEWART,
Secretary of Internal Affairs.

SIR: I have the honor of submitting to you my report of the inspection of the mines of the eighth bituminous district, for the year ending December 31, 1892.

I made 335 visits during the year to 126 mines, or an average of about 2.6 to each mine. Some of the mines were visited several times, while a few were visited but once; these, however, are among the best cared for in the district and require less attention than the others. Of the mines of this district eight are in Bedford, eight in Centre, nine in Huntingdon, and 101 in Clearfield county. Four mines have been worked out and abandoned during the year and several new ones have been opened and are ready to add to the shipments for 1893. One hundred and twenty-eight mines are subject to inspection at present writing, February 1, 1893, probably half a dozen of which will be exhausted during this year, and it is likely that many new operations will be commenced. When the distance traveled in order to visit these mines, in addition to other work expected of the Inspector, is taken into consideration, it is evident that there ought to be a redistribution of districts, but whether some of the mines of the eighth district could be attached to some other, without overburdening its Inspector is questionable; the best way out of the difficulty would be the creation of two additional districts. Something ought to be done so that the Inspector could pay each mine a visit at least once in three months. There has been a slight increase of coal production over that of the year 1891, notwithstanding that last summer was an exceedingly poor season for work. Both the Beech Creek and Pennsylvania railroads had their bad seasons. At one time during the year there appeared to be no demand for coal, and when the demand came, then there was a scarcity of transportation facilities, but notwithstanding this, at the end, there was an increased production. The increase is principally from the Beech Creek and Broad Top regions; the prospects for the latter named are good. Several new openings are being made, and the car supply of the H. & B. M. R. R. is far better than that of the Pennsylvania and Beech Creek railroads.

The number of accidents I am pleased to say has been reduced. Twelve fatalities are reported for the year, while for 1891 there were 14. Fifty-five non-fatal for 1892, while for 1891 there were 65. Several of the non-fatal ones were hardly serious enough to require being reported. The causes of accidents are shown by the following table.

Fatal.

Falls of coal,	6
Falls of rock,	4
Explosion of powder,	1
Run over by mine cars,	1
	12

Non-fatal.

Falls of rock and bony coal,	18
Mine cars,	17
Falls of coal,	13
Explosion of powder,	6
Cut with an axe,	1
	55

By the above fatalities, 4 wives were made widows and 18 children were left fatherless.

Regarding nationalities of those killed and injured the record shows the following:

Nationality.	Fatal.	Non-fatal.
Hungarian and Slav,	6	16
American,	1	13
English,	3	9
Irish,	1	3
Belgian and French,	1	3
Scotch,		6
Swede,		3
Welsh,		2
	12	55

It will be seen from the foregoing that the crowding of our mines with what is called Hungarian labor, is responsible for 50 per cent. of the fatalities, and about 30 per cent. of the non-fatal accidents. One remarkable circumstance has come to my notice in this particular, namely, that we do not reap the harvest of death immediately on the entrance of these people into the mines, but after they have been working in them from one to five years. At first they are afraid, and are in consequence very careful but when they have earned money enough to by a suit of American clothes, and can afford to cast away their horse-hide boots and their homespun trousers, when they discard the black clay or wooden pipe, and

go along puffing an American manufactured cigar, when alcohol is no longer good enough for them, and they must have the 50 cents per quart "red eye" whiskey, then they become independent and saucy enough to say to the mine-boss or Inspector, "me know," "me dig coal for one year," "two year," "three year," "me take care myself," "he no come down," "me shoot him down" and many other such expressions, but the fact remains that they are not as capable of taking care of themselves as men who have been raised to the business of mining coal, neither are they as easily disciplined as other people.

Of the six men killed by falls of coal, four came to their deaths by their own carelessness, while in the other two cases, the casualties could not have been avoided. Each of the deaths by falls of rock were also unavoidable. The death by mine cars could have been prevented, with ordinary presence of mind, while the death from explosion of powder was the result of extreme recklessness and the violation of rule and law.

A life was lost for each 566,065 tons of coal produced, and a non-fatal accident occurred for each 121,705 tons.

Since none of the above accidents were traceable to the lack or want of supplies, it follows that the law in this particular is being well observed, while on the other hand, considering the large percentage traceable to negligence or carelessness, we would natually conclude that the subject of discipline does not receive the attention it deserves.

The rules of this district require that a sprag be set every seven feet, whether the case seems to need it or not, and this is frequently done, but generally after the most dangerous work has been completed. When two men, therefore, begin mining at the same time they usually take a piece no less than twelve feet long and mine this as far back as necessary, say from four to six feet under the coal, and when they have done this a sprag is put in, while the safe thing to do would be to set the spag in first and then mine on either side of it, and if instead of a wood sprag a coal stump is left in, it should be removed by mining from the inward end toward outward, so that when the last piece is taken out, the miner may be in an easy position to get out of the way of the coal in case it should fall.

I was in hopes that accidents from falls of coal would be lessened in proportion as the seams of coal worked became lower, but it appears that as the conditions for safety become better, the workmen become less careful. I find those that scorn the idea of a three-foot seam being heavy enough to break a limb, much less to crush the life out of a man. Notwithstanding this, three of the foregoing were killed by a seam less than three feet in thickness, while two others in a seam less than four feet thick.

I desire to call attention to mine rule No. 18 of this district: "The miner shall use great precaution in the care and handling of his powder,

and when making a cartridge or filling the same, he shall not keep his lamp on his head nor have a lighted pipe or cigar in his mouth, he shall place his lamp at least four feet away from him and at a point where the air will carry the spark away from him." Notwithstanding that this rule is posted at each mine, and is in the language of every nationality working therein, it is nevertheless often violated, as is evidenced by the number of accidents from explosions of powder, for in every case the accident resulted from having the lamp on the head. Such carelessness is inexcusable and the offenders should be prosecuted.

During the year I discovered 58 violations of the act of 1885, and served notice in each case. Many of these were not of a serious nature, and the matters complained of were at once attended to and made right. In a few instances, however, the dilatoriness with which my requests were complied with would try the patience of Job. In a half a dozen cases I was almost constrained to commence legal proceedings against the offenders. I did this only in one instance, however, namely, the United Collieries Company, James Denithorne, manager. In this case it was a violation of the second section of the mining act. I found more than fifty persons at work in a shaft mine 250 feet deep at Langdondale, Bedford county, and it was not in communication with two openings as required by law. Before entering proceedings I tried every means within my power to have the matter amicably adjusted but without avail. At first the company was disposed to let it go to trial as a test of the constitutionality of the act, being prepared to offer proof that they were discriminated against, in that the law would not permit them to work a sufficient number of men to make the operation profitable while the second opening was being made available, and desired that I should enter into an agreement permitting them to employ more than twenty persons at one time. I obtained legal advice as to the extent of my discretion in the matter and found that there was but one thing to do. I therefore entered suit, which was made returnable to the November sessions, it being one of the last cases on the list, and there being much work for court to do, it was postponed until the February sessions By this time the company was desirous of settling the case, and I offered to enter a *nolle prosequi* on condition that they pay the accumulated costs and enter into an agreement to push the work of making the second opening without delay and within the requirements of the law. This they gladly accepted, and so at present the work goes along smoothly and expeditiously. The costs at this stage amounted to $155.72. Aside from this failure on the part of the company, they are deserving of much credit for the advancement made at this operation. The plant here is a very complete one, and besides having a first-class arrangement for handling the product they have advanced far ahead of any other in this district, in that they have lighted all about the shaft head and its accompanying buildings with electricity, and have provisions to

carry light of the same kind to a distance of 1,000 feet from the foot of the shaft into the interior of the mine. A wash house has also been erected for the accommodation of those who work in wet places and others who desire to wash at the shaft. There are four bath tubs put in and so partitioned off as to form four distinct bath rooms supplied with hot and cold water, and the whole house comfortably heated by steam.

There are working within the mines of this district 8,255 men miners, 914 boy miners, 332 company men, 640 drivers, etc., and 213 door-boys, etc., a total of 10,351. Eight hundred and ninety-eight more are working in the offices and about the mines, and there are 112 mine foremen, a grand total of 11,622 persons. One hundred and twenty-three mines were operated during the year, with an average of 84 miners for each mine. Six million, eight hundred and eleven thousand seven hundred and thirty-five net tons of coal were mined, and an additional 49,000 tons were shipped from mines not under the provisions of the law. The 123 mines reported, worked an average of 201.3 days, making the earnings of drivers and company men (at the rate of $2.00 for 10 hours) $420.60 each for the year. The miners did not fare so well, as there are too many of them for the work to be done. The rate paid for mining is 50 cents for 2,240 lbs, or 45 cents per ton. Assuming the boys to be entitled to half a turn, we have 8,712 full turns, among which to divide the total production, giving to each turn 779.7 tons; allowing 3½ cents per ton extra to cover the yardage paid on headings and rooms when yardage is paid on rooms, we have the average earnings of the miners for the year to be $378.15, a trifle more than for 1891; a rate of nearly $1.88 for each day worked. This certainly is a meagre sum wherewith to maintain and educate a family.

Touching the question of ventilation, I am glad to state that the inefficient furnace is being gradually replaced by the fan ventilator. Seven fans were put in during the year, ranging in size from 12 to 16 feet diameter, the type of fan, with one exception, being what is known as the "Brazil," made by Crawford & McCrimon, of Brazil, Indiana. It is encouraging to note that the managers do not wait to work out the old mines with the make-shift furnace, but put in the fans although the mines may be over half worked out. They have discovered that it is still a matter of much saving, beside affording better ventilation. I wish many others would follow their example, and often wonder why they do not, for in fully half the mines of this district it is a difficult matter to ventilate them during the summer, for it requires nearly all the power of the furnace to overcome the natural pressure in the opposite direction. In such cases there should be two furnaces, one for warm and the other for cold weather. But when a fan is used the current can be reversed at pleasure.

During the year I have made several tests of the atmosphere of some of the deepest mines in Clearfield county, which are not over 200 feet

in depth, and although it is generally believed that there is no explosive gas given off in this region, such, however, is not the case, for while there is not enough accumulation to enable the detection of it by the ordinary means, yet, by careful manipulation of the Shaw gas testing machine, I have found a varying quantity, ranging from $\frac{2}{10}$ to $\frac{6}{10}$ per cent. This, however, is not the condition of the return air current, in any case, but of the air in places where I had suspicion of gas being given off. Judging from this I shall not be surprised to find gas in explosive proportions in some of the new and deeper mines now being opened.

Notwithstanding the fact that the Shaw gas tester receives now and then a cuff from one and a kick from another, I am a firm believer in its accuracy, particularly with explosive gases, and with the CO_2 standard test solution now prepared by Mr. Shaw, I see no reason why the black-damp test cannot be made nearly as accurate.

I have taken pleasure in showing the operation of testing to probably a hundred persons during the year, and all express astonishment at the accuracy of the machine in denoting the percentages of gas. As often as the machine is used does Mr. Shaw receive blessings for his clever invention. As stated before, there are in this district 112 mine foremen, 102 of whom hold certificates of competency under the act of 1885; the other ten hold certificates of service. The interest taken in the study of mining is wide-spread, and the number of applicants at each examination is many. At the examination held here in November last there were 80 applicants, 14 of whom succeeded in passing seventy-five per cent., and receiving certificates; nine have papers making them eligible for bosses where there is no explosive gas, while five are entitled to boss anywhere in the bituminous mines of the state. It is encouraging to see so many becoming bright, theoretical miners, but it is astonishing how rusty the mine-boss who is in practice allows himself to become. It too often appears that once in possession of a certificate the goal of their ambition is reached, and there seems to be no incentive to a continuation of the study. To overcome this lethargy a clause put in the proposed new mine law requiring the re-examination of mine-bosses every four years would be a step in the right direction, and would result in mines and miners being better looked after and cared for.

Accompanying this report I send photographic views of Mt. Vernon No. 8, better known as the Prospect or Houtzdale shaft. The Mt. Vernon No. 8 was sunk some two years ago by the citizens of Houtzdale and vicinity, but the supply of money failed before it was ready for operation. During the early part of 1892 arrangements were effected with the Houtzdale Coal Company, virtually the United Colonies Company, to have the stock which was held by individuals transferred, with the understanding that the company should finish and operate the shaft. The work is now complete, and some coal is being taken out, but only a limited number of men can work until the second opening

has been made. The prospective opening is a slope located 3,000 feet west of the shaft. The coal here is of excellent quality, being the lower Kittaning seam, but it is thin and will cost a little more per ton to mine. For the benefit of the town and its people, we hope the shaft will be a profitable operation. Hon. John F. Farrell is in charge which is a guarantee that the work will be properly done.

From a visit paid the Hospital for Injured Persons supported by the state at Phillipsburg, Centre county, I find that some needed additions have been made to the buildings, such as a laundry, ice house, etc. This elegantly kept and well managed institution is doing much good, as will be seen from the following record:

Total number of patients to date,	219
Deaths,	11
Miners treated,	108
Railroaders treated,	29
Other occupations,	82
Amputations, major,	19
Amputations, minor,	34
Operations, major,	20
Operations, minor,	48
Of the railroad men treated Beech Creek furnished,	24
Pennsylvania furnished,	5
Fractures of femur,	10
Fractures below knee,	25
Fractures of arm,	15
Fractures of pubis,	1
Fractures of skull,	4
Fractures of spinal column,	2
Fractures of ilcum,	1
Dislocations,	4
Strangulated hernia,	1
Indectomy for removal of steel from iris,	1
Other eye injuries,	6

At present there is no physician in chief for the hospital. Doctor Allport having died lately, and for the reason that the state does not pay anything for the chief's time and services, there is naturally some trouble in getting a doctor to assume the duties. Dr. Allport undoubtedly sacrificed much of his own practice to devote his attention to the hospital, for which he received nothing but a good name.

Miss Fisher, the superintendent, informs me that much of the prejudice that formerly existed in the minds of people against hospital treatment has been dispelled, and there is no further trouble in getting injured persons to go there for treatment.

Yours respectfully,

D. H. THOMAS.

BRISBIN, *February 13, 1893.*

ALPHABETICAL LIST OF THE MINES OF THE EIGHTH BITUMINOUS DISTRICT WITH A BRIEF DESCRIPTION OF THEIR CONDITION.

Acme.—This mine employs but a few men, but it is now intended to open up on a more extensive scale. There is a rope haulage of the endless system here. The amount of black-damp given off in portions of the mine is remarkable. On one occasion I found the men working inside of a place where so much of this gas was given off that it was with great difficulty I succeeded in reaching the men. I sent them out and ordered that they should not again return until a sufficient air current was in circulation to properly carry off the damp, which was subsequently done. Frank O'Rourke is now mining-boss.

Alexander.—This mine worked the early portion of the year with less than ten persons. I, however, visited it at one time and found 17 persons employed without the services of a certificated mine-boss. I notified the contractors to comply with the law, which was done. At first the mine was poorly ventilated, but afterwards was much improved. Thos. Blythe, mine-boss.

Ashland.—This mine has been well ventilated through the year by natural means. The whole work was being drawn back, and each cave fell to the surface. The mine is now finished. A. P. Isenberg, mine-boss.

Atlantic No. 1.—This is an extensive mine, working altogether on pillars, and on account of working into other large mines, also on pillars, a great quantity of black-damp is given off, which makes it necessary to keep the furnace going at night as well as by day, burning about six tons of coal in twenty-four hours and circulating about 50,000 cubic feet per minute. Early in the year I recommended the putting in of a fan so that advantage could be taken of the natural pressure. The fan is now being put in, and I expect to be able to report a much improved condition. At present about 22,000 cubic feet of this current is being thrown into the mine from the return of Atlantic No. 2, which is a great improvement over the condition which existed before this arrangement was made. Jonathan Hutchinson, mine-boss.

Atlantic No. 2.—This mine is always found in good condition. There being seven splits of air, which is a little too much divided, but it is creditable to the management, and proves that a mine can be kept in good shape if started on right principles. William Pollock, mine-boss.

Baltic No. 1.—This mine on the setting in of the warm weather was not as well ventilated by reason of the furnace being on a much higher elevation than the drift mouth. After arrangements had been effected to take in the air from a point higher than the furnace and nearer the place where the men were at work, the improvement was marked. W. J. K. Irwin, mine-boss.

Baltic No. 2.—This mine works about twenty persons, and is connected inside with No. 1, but has a separate system of ventilation by

natural means which is sufficient during cold weather, but in the spring of the year a stack had to be erected and a fire kept at foot of shaft. W. J. K. Irvin, mine-boss.

Baltic No. 3.—This mine dumping its output at the same tipple as No. 1, works the seam of coal overlying No. 1. The air here was well distributed but insufficient in volume. I ordered a larger furnace put in which was done at once, effecting a marked improvement. W. J. K. Irvin, mine-boss.

Belverne.—This mine has been worked very irregularly throughout the year. At one time the ventilation was bad, but by reversing the current an improvement was effected. The operators were retarded much by water in the mine. The crop coal having been worked first and caves falling to surface, admits a great quantity of water during heavy rains, which follows the workings to the dip. Robert Whitehead, mine-boss.

Bessemer.—On two visits to this mine it was found defectively ventilated. There is no possibility however of maintaining a regular system of ventilation as it is bordered on one side by old workings and on the other by crop line; the only means of ventilation being holes driven to the surface, which, if kept near face of workings will give sufficient air for the number of men at work. William Campbell, mine-boss.

Black Diamond.—A marked improvement has been effected in the ventilation of this mine by a connection made to an old working that became flooded some years ago. The water was taken out and a nice current of air coming into the workings from a higher point than the furnace, served a good purpose during warm weather, while for cold weather, the natural current will be sufficient.

Bloomington Nos. 1 and 2.—These mines were inspected but once during the year and were then idle. For some reason they were closed and Nos. 3 and 4 were rushed to their utmost capacity.

Bloomington No. 3.—This mine did not have a sufficient volume of air in circulation when first visited, and the current was heavily charged with powder smoke, and I ordered the current divided and pressure increased. On a subsequent visit the volume was increased but was still much vitiated; when I had to again insist on the overcast being made, and the furnace being better attended to. There are about 150 men at work in the mine, and the mine-boss assumes the care of the furnace himself. John Boag, mine-boss.

Bloomington No. 4.—This mine had an insufficient volume of air passing, but all there was, passed over the men, so that they did not suffer. Subsequently I found the volume increased, the management was trying to get along, and it was their intention to put in a large fan to ventilate Nos. 3 and 4 in the near future which can quite conveniently be done. R. M. Walker, mine-boss.

Brittanic.—I found this mine fairly ventilated except in the second heading, which was being driven single that resulted in carrying the air be-

hind the gob which in this case, like many other such, was a total failure. I consequently ordered an air course driven to follow the heading. George Rees, mine-boss.

Brown.—I have always found this mine well ventilated and otherwise well cared for. William Powell, Sr., mine-boss.

Benedict.—This mine was found poorly ventilated, the system being single headings, with canvas on rooms. But there was little need of canvas or doors for there was no current to conduct. With cold weather however, and but few men at work, it will be possible to get along. The attention of the operators was called to the defective ventilation as well as to other features of the law that were not being observed. Scott Reed, mine-boss.

Cambria No. 1.—This mine is old and extensive and defectively ventilated, because of the rotten condition of stoppings and brattices. The natural air current is astonishingly large here on account of great difference of elevation, but is difficult to conduct to working places; there are but few men here however, which makes it possible for them to work. John L. Miller, mine-boss.

Cambria No. 2.—This is a slope mine opened during the year and intended as a second opening for Cambria No. 3. No. 2 is located on Sandy run, while No. 3 is on Long's run, a distance of nearly a mile. There is a good plant here, and it is capable of bringing considerable coal to surface, but so far the inside work is a disappointment, the coal being very small and irregular. The ventilation for the present is by means of compressed air carried through a pipe, and is sufficient only for a few men. There will be no second opening here until the mine becomes connected with No. 3. John Carlin, mine-boss.

Cambria No. 3.—A shaft opening 250 feet deep into the "Kelly seam." Commenced shipping coal early in the year. There is a good plant here and an attempt is being made to outstrip anything in the district. The fact, however, that the second opening was located so far away has limited the output, for the reason that no more than twenty persons are allowed to work at one time. There is a fan fifteen feet in diameter placed on the pump-way, but it is not sufficient on account of the loose condition of the partition dividing the pumpway and hoisting shafts. The idea of connecting this with No. 2 for second opening has now been given up and a shaft is being put down midway between No. 2 and No. 3.

Cataract.—There are two drifts working here, and notwithstanding the great difficulties to contend with, in one, with great quantities of black-damp given off, in the other, with low coal and bad roof, I have found the work in good condition at each time visited. There is now in operation another drift, the coal being let down over a long and steep inclined plane to be dumped on the same tipple as the product of the other two drifts. The new plane, like the other, is well constructed, the

grade is uniform, and over 45° pitch and about 1,200 feet long. D. Paul Hyde, mine-boss.

Central.—This mine is not being worked very extensively. The coal here is large and of good quality. When visited the ventilation was natural and plentiful. W. S. Edwards was the mine-boss, Joseph Wheatly is now.

Champion.—On account of irregularity of work, I failed to find this mine running until late in the year and after it had been purchased by the United Collieries Company. It has always been in a bad condition. I found the drainage deplorable and the ventilation very little better. I made some recommendations for improvement which I think will be attended to. This mine has been so badly cut up that it will be a hard matter to improve it, so that it would be a blessing if it were finished. A. P. Insenberg is now mine-boss.

Clearfield, now Eureka No. 17.—This mine changed hands during the year, having been purchased by the Berwind-White Coal Mining Company. James Gatehouse is still in charge as contractor and mine-boss, and the mine will receive the same care that it always has.

Chevington.—This mine is dependent much on another for its ventilation, and in consequence I have not found it up to the requirements of the law. During very cold weather, however, it can be well ventilated. The roof here is very bad and the work progresses with difficulty in consequence. Francis Grimes is mine-boss.

Coaldale No. 3.—On one visit to this mine I found one portion of it very badly ventilated, any recommendations for improvement were, however, cheerfully complied with, and on the next visit I found a much better condition. The mine at one time was badly handled and the consequences will be further felt as long as it is being worked. James Dunsmore is mine-boss.

Coaldale No. 5.—The drift mine here I have found usually well cared for. On one occasion, after it had been idle, I found it being worked without the use of the furnace, and I found the slope in bad shape. I recommended the putting down of a larger furnace shaft, which was cheerfully complied with, and on a subsequent visit it was in good condition. James Scurfield is mine-boss at both places.

Colorado No. 1.—This mine I have always found in good condition, excepting the ventilation of a few rooms on one occasion which was caused by the failure to make a cross-cut, on account of large clay vein in pillar of one of the rooms. I have not seen as much effort anywhere to secure good drainage as in this mine. Thos. R. Pilkington, mine-boss.

Colorado No. 2.—This mine is well ventilated and drained. I found it without an escapeway early in the year, but on being notified to make second opening it was done at once. The coal is let down from this mine by a short plane to the tipple, where the No. 1 mine coal is being dumped; the same boss has charge, as in No. 1.

Columbia No. 5.—On two occasions when I visited this mine, I found two headings insufficiently ventilated, otherwise its condition was good considering the difficulties in overcoming the many rock rolls found here. B. Frank Smith, mine-boss.

Cook's—I visited this mine three times during the year and found it each time fairly well ventilated. It was operated about three months without a mine-boss, until the old boss came back again. John Byron is mine-boss having now succeeded Eli Townsend.

Crescent.—On one visit I found this mine insufficiently ventilated. It being then ventilated by natural means and at times had no current at all. I measured 3,600 feet at drift mouth, but the pressure being so low, the trip coming out would entirely stagnate the current. I recommended that a fan be put in, which was done, but on account of extreme scarcity of water at the time, it was not run until late in the fall. There is a difference of elevation between the openings of this mine, that sometimes as much as 30,000 feet is obtained by natural means with the fan in operation. If advantage of this natural pressure be taken there is no trouble to obtain plenty of air. James McIntyre is now mine-boss succeeding Lee Ott.

Cumberland.—This mine is now ventilated by a fan and the ventilation is all that can be desired. The mine otherwise is well cared for, and a rope haul is being put in to get the coal from the dip workings which are being developed, and to bring the coal from the other parts of the mine to the tipple. W. H. Speer, mine-boss

Cuba 1, 2, 3.—No. 1 has been worked on a small scale during the year, and is now finished. No. 2 is being worked by a few men, not requiring a mine-boss. No. 3 is on the same vein, with very little cover and is hardly workable.

Cunard.—This old shaft mine was reopened by the former owners, during the year, at a great cost. This mine shows too plainly the result of operating by people with neither skill or knowledge of mining. A map showing the actual workings of this mine would be worth a great deal of money to the proprietor of a dime museum. A fan has been erected and after awhile an air current will be carried to face of workings. There is a drift also in operation here, and its condition, like that of the shaft, was found deplorable, but the parties now in charge are doing all in their power to bring both places up to the legal requirements. A slope is being put down to the basin of the vein into which the drift is working and when completed will accomplish the desired result for the drift mine. Jas. Starford, mine-boss.

Decatur No. 1.—This mine is an example of the old methods of working, and is anything but creditable to the management. I have failed at any time to report the condition as good. The power generating the ventilation is a furnace, at the foot of a shaft about 15 feet deep. There is hardly a perceptible current anywhere in the mine and it would be

impossible for men to work in it if it were not for the reason that they are not grouped together but scattered over a large area. John O. Todd, Sr., mine-boss.

Decatur No. 2.—This mine is always found in good condition and is owned and operated by the same company as No. 1, but is worked on modern principles. David Patrick, mine-boss.

Derby.—On my first visit to this mine I had occasion to complain of the condition, but subsequently found it in better shape. Thomas Stephenson, mine-boss.

Drane.—This mine has always been kept in good condition; it is now worked out and will furnish work for 6 or 8 men, only for a short time. Jos. Wheatley was mine-boss.

Electric.—This mine has worked very little during the year, a dispute having arisen between the miners and operator in regard to working under the top coal. Work was suspended until beginning of winter. About 30 men are now at work and the mine is always found in good order. W. S. Edwards, mine-boss.

Eureka No. 2.—This mine is working entirely on pillars and is generally found in good condition. There was an exception however to the rule during the summer when I found one part of the mine in bad condition. A recommendation for improvement was made and complied with and the result was satisfactory. Jas. Blades, mine-boss.

Eureka No. 5.—I have always found this mine well ventilated; have measured 18,000 cubic feet in face of main heading 1,700 yards from mouth of slope. It was ventilated in one current, but during the year two overcasts have been put on the right side of the mine so that the headings having the greatest number of men are now ventilated by separate currents which is a marked improvement. Thos. D. Forsyth, mine-boss.

Eureka No. 7.—This is a shaft mine. On two occasions of inspection I failed to find the desired and expected result from the fan, and on inquiring into the cause of the trouble I discovered that the fan, being an exhaust, was throwing much of the air down the man-way which found its way back again to the fan-way through the defective partition dividing them. I ordered the man-way to be tightly closed which was immediately done and accomplished the desired result. Thos. A. Estep, mine-boss.

Eureka No. 8.—I found this mine in a bad condition for ventilation in the spring of the year. A furnace shaft was made for the affected side of the works with the desired result. On a subsequent visit I found the condition good. Jas. S. Kirkwood, mine-boss.

Eureka No. 9.—On my first visit to this mine I found the ventilating power entirely inadequate, being the exhaust from a steam pump. Subsequently, however, a furnace was put in and there was plenty of air

fairly distributed. The coal here is low and much troubled with rolls in the roof. The mine is generally well cared for. John Allen, mine-boss.

Eureka No. 11. This is a new mine having two drift openings. The coal is not as good as it was thought it would be, the ground over the coal seems much broken which tends to make the coal muddy. One side of the work is also much troubled with rolls. The ventilation was not yet much systemitized, the mine being in its prospecting period. A good shaft was put down with room for a good furnace. Charles Husted, mine-boss.

Eureka No. 12, formerly Muddy Run.—During one visit to this place it was far from being up to the standard in regard to ventilation; at a subsequent visit it was somewhat improved but drainage on the roads was neglected. The furnace shaft is shallow, and no furnace has been built as it is the intention to sink a deeper shaft in the future. Thomas Blythe, contractor. Richard Simpson is mine-boss now, having succeeded Wm. Todhunter.

Eureka No. 13, formerly Coal Run.—This is a new mine operated by two drifts each of them having a little "toy furnace" for ventilation, the furnace in one case being $2\frac{1}{2} \times 3$ feet having a grate area $7\frac{1}{2}$ feet; it serves the purpose for the few men at work. It is the intention in the near future to build one large furnace to ventilate the workings of both drifts. Hugh Dick, mine-boss.

Eureka No. 14 formerly Laurel Run—There are two drifts here; in the new drift the greater number of men are now at work. The ventilating power was inadequate during the summer, the furnace shaft being too shallow: during cold weather the ventilation will be sufficient and when warm weather returns it is intended to be connected with a deeper shaft in the old workings. J. E. Hawkins, mine-boss.

Eureka No. 16.—This mine was formerly Ramsey mine but during the year was bought by the B. W. C. M. Co.; it has always been in good condition under both ownerships John Robinson, mine-boss.

Excelsior No. 4.—Having for a long time been in a much troubled condition on account of faults, it is a pleasure to note a change for the better during the year; with better coal comes a better condition throughout. John Williams, mine-boss.

Fenrdale.—During the summer I had occasion to require a better state of affairs in this mine. The system of ventilation is by putting holes in the surface, and there being very little difference of level between drift mouth and any of the holes, the pressure was necessarily low. There was a change of ownership near the close of the year and the mine is nearly exhausted. George Gould is now mine-boss.

Fisher.—This mine has worked very irregularly, and sometimes is not under the provisions of the law. The mine, however, is in good condition for the number of men at work. John Lloyd, mine-boss.

Forest.—This mine is well arranged for ventilation, but I have failed to find it ventilated, for the reason that the total volume is not sufficient. I ordered the withdrawal of some of the men at one time until the volume was increased, which was effected by putting in another furnace. The winter season is much better than the summer in this mine for ventilation. John Hooton, mine-boss.

Fulton.—This mine has been exhausted during the year. It was worked for several months with less than ten persons.

Gazzam No. 1.—This is an extensive mine working very low coal. The headings here are large and roomy. The drainage is well looked after and the ventilation good. James Methven, mine-boss.

Gazzam No. 4.—There are but few men at work here. Coal is very low, and the mine a great distance from the workmen's homes. The ventilation and drainage are good. Samuel Green, mine-boss.

Ghem.—I found this mine deficient in ventilation at one visit. I advised the owners to put in a fan but they preferred putting in a new furnace, which was done, but it is much too small, for the reason that it is the intention to ventilate in splits, so that the total volume is likely to be large. In other respects the mine is well cared for. Samuel Pfoutz, mine-boss.

Gearhart.—I have found this mine well attended to, the only fault being that the current is continuous, and as much blasting is being done the men working on the return airway are compelled to breathe air heavily charged with powder smoke. I suggested that arrangements be made to have two currents of air, which will be done, for the management is interested in having a good mine. Richard Lobb, mine-boss.

Grassflat.—This mine has not been properly ventilated on account of the system of working requiring so many doors. I recommended a shaft to be put down in face of workings so as to avoid the necessity of returning the current to the furnace. Instead of sinking the shaft it was proposed by the management to drive one of the headings rapidly to connect with an old opening some 600 feet away. This is now about completed, when a new system of ventilation and working will be adopted. The readiness of the management to comply with the law, is a certain assurance of a better condition. John Charlton, Sr., mine-boss.

Grampian.—These mines have not been worked extensively and it has been a hard matter to secure trade. The mines were found in ex cellent condition. Rich Moran, mine-boss.

Guion.—This mine has only been under the provisions of the law for about three months of the year, and even then was worked irregularly. The ventilation has always been defective on account of the practice of building stoppings with dirt. Jas. R. Sommerville, mine-boss.

Hickes.—This is a small mine working about fifteen men. I found it without a mine-boss, and ordered the owners to engage one, which was done. Condition of mine, fair.

Highland Nos. 1 and 2.—These are small mines working about twenty persons in each. I found them badly ventilated on one occasion and ordered them to be placed into lawful condition, which was reported as having been done. Jas. Genick, mine-boss.

Huntingdon.—On one of my visits to this mine I found it very badly ventilated. I recommended some work to be done to better its condition and was pleased to find on my next visit a much better state of affairs. E. Gould, mine-boss.

Henderson.—This mine has been worked very irregularly. Sometimes, employing fewer than ten persons, so that it may hardly be considered as working under the law. The ventilation was not up to the standard when visited, indeed there is hardly a system of ventilation, as the workings are constantly breaking through into old workings of several years ago known as Ocean No. 1, from whence great quantities of black damp sometimes issue. Joel Delong, mine-boss.

Jefferson—This mine has given much trouble during the year. I visited it about eight times, and each time had occasion to complain to the owners. They have worked the mine until lately without an escapeway. Sometimes I found more than twenty persons at work, I was about to prosecute several times, but on my return would find some work being done to secure a second opening, or would find the mine stopped entirely. I had occasion to notify the operators more than once to engage the services of a certificated mine-boss, and each time I returned to see if my order had been complied with and I would find the mine either idle, or working with fewer than ten persons. During all this time the few men who worked there were suffering for ventilation. There is now, however, an escapeway, a mine-boss and prospects of better conditions. John C. Burns, mine-boss.

Karthaus—On one of my visits here I found a portion of the mine badly ventilated. The management, however, was aware of the deficiency and had the trouble remedied before I returned. It is rather difficult to have this mine in a first class condition, for the reason that it is mostly pillar work. A. G. Spears, mine-boss.

Kearney.—These mines, two in number, were idle during the first half of the year. The ventilation when visited was not up to the standard, but improvements were contemplated that would better their condition. Geo. Maxwell was mine-boss for awhile, now Ross Scheider is acting on the certificate of the superintendent.

Kentuck.—This mine has worked most of the year with fewer than ten persons. I visited it but once in consequence, and found it in fair condition. D. D. Jones, mine-boss.

Keystone.—This mine worked nine months during the year. It is a new mine and has all developments to make. Charlton Dixon is now mine-boss.

Knox Run.—A new mine having much water to encounter in opening. A good system for ventilation has been made, and I expect good results from it. William Creichton, mine-boss.

Kyler.—I have found this mine generally in good condition. On one occasion when the weather was very warm, the pressure was rather low. A good stone overcast was put in during the year, thus making two currents. I have had some trouble to have a mine-boss retained at this mine as the owner is particular in his choice, for being a practical man himself, he expects to find the same qualities in others. William Ednie, mine-boss.

Leland.—This is a new mine opened during the year, working a low seam of coal. The operator here is also hard to please in selecting a mine-boss, this, if persisted in, will work ruin to any mine, for frequent changes in mine-bosses are a bad thing. I found this mine badly ventilated on one side, resulting from an over-dose of economy. A Mr. Hahn is now mine-boss, being the third in a period of three months.

Lueder.—I found this mine badly ventilated on two visits and all for want of a fire in the furnace, which the boss took upon himself to keep up, but seemingly shirked his self-imposed duty. There are seldom more than twenty-five persons at work in the mine. George Maxwell is mine-boss at present.

Logan.—This mine is working from forty to sixty persons. I found it in good condition both for ventilation and drainage, except one ugly swamp on the hauling road. William Fitzgerald, mine-boss.

Loraine.—This mine is finishing rapidly on account of its broken condition. The ventilation was not up to the standard. Two new drifts are being opened here, one to recover a piece of coal lost years ago through the bad management of some ambitious mine-boss, and the other to take out the cap seam overlying the old workings. George Gould, mine-boss.

Lancashire No. 1.—I found this mine in bad shape for ventilation on the approach of warm weather. I ordered a shaft to be put down near face of workings to serve as intake which was done, resulting in great benefit to the mine. A furnace for the left side was also put in, and more than twice the former quantity of air is now circulated. Richard Ashcroft, mine-boss.

Lancashire No. 2.—I found this mine when warm weather had come in bad shape. The current was also being dragged from a low point to a higher one, while a shaft at a higher point than the furnace was kept closed, but I failed to convince the mine-boss of the practicability of taking the air through the shaft. It is the intention to take the most of the coal of this mine through the No. 1 drift so as to reach the Beech Creek railroad for transportation. Thomas Pilkington, mine-boss.

Mapleton.—This mine has been working probably less than half time, the work is on pillar coal. The ventilation was good when visited.

William Fitzgerald has charge of this mine together with the Logan mine.

Montana.—I found on my first visit to the new drift of this mine, poor ventilation and when I went back again, I found it working without a mine-boss, notwithstanding that about twenty persons were at work. I ordered that a second opening be made and a mine boss engaged which were done, but on a subsequent visit I found the second opening nearly filled with ice and the ventilation again bad. I gave instructions for improvement which, if complied with, will place the mine in good condition. Henry Byron, mine-boss.

Morrisdale.—My last visit to this mine was just before the setting in of cold weather, and I found it poorly ventilated. With cold weather and the attention of the management I find a better condition of affairs. John M. Click, mine-boss.

Mt. Equity.—This mine was not up to the standard for ventilation. A new addition to the mine was, however, being developed, and it is the intention to withdraw the men from the old as fast as room was found for them in the new portion. This will be the means of shortening the current and better results will be attained. The management also promised to put in a fan to replace the furnace, which I trust will be done. Jas. Allen, mine-boss.

Mt. Vernon No. 5.—On one of my visits to this mine I found the ventilation deficient. I recommended to the mine-boss the making of some changes which, when complied with will better its condition. There is a good furnace here and it is well attended to, so that it is an easy matter to remedy minor defects. John May, mine-boss.

Mt. Vernon No. 6.—At the beginning of this year the ventilation was bad and the second opening had not been completed, and it was after many importunities that it was brought to its present state. A stairway was put in from top to bottom, but the work of turning the water off so that it would not fall down the shaft was delayed from time to time on the pretense of being unable to get pipes for the purpose, until finally hard weather came on, thus hindering the work. A fan has been placed on the second opening as a propeller, thus aiding the frozen condition of the shaft, but it serves to keep the hoisting shaft in good shape. The ventilation is now good. Matt Morris, mine-boss.

Munson.—This mine has not been working under the provisions of the law this year.

Mabel.—At this mine I found the ventilation below the standard on one of my visits, but it was all right on a subsequent one. I had occasion to call the attention of the mine-boss to his duties as required by the act of 1885, and he cheerfully complied. M. H. Blythe, mine-boss.

Moravian.—I found this mine in good condition, there being two separate currents. There is, however, a bad system of working for the sake of ventilation, namely, a door for each two rooms on the heading.

The system is being modified, however, which will be beneficial to the mine. Wm. Fleming, mine-boss.

Ocean No. 1, Clearfield county.—This mine has given me much trouble during the year. On one occasion I was obliged to stop a portion of it, thus throwing forty persons out of work, for as the mine was being "robbed" there were no openings for the men. The mine was opened and worked on a very bad system, that of single heading, and when being robbed there is no chance for ventilation, but in an irregular manner. The current sometimes passing through the caves was astonishing in volume, but when it was coming from the caves it carried with it great quantities of black-damp. The approach of cold weather was a signal of assured ventilation. Thomas Marshal, mine-boss.

Ocean No. 2, Clearfield county.—During the year hundreds of yards of old workings have been worked out here which never were properly ventilated. While this was being done another portion of territory was being opened up, where about 175 men are now at work. This new portion is in first-class order, both for ventilation and drainage, notwithstanding that great quantities of water are being encountered. A new traveling way and escapement shaft are also just completed, which makes this mine well up in all legal requirements. Daniel Alsop, mine-boss.

Ocean Nos. 1 and 2, Huntingdon county.—These mines are working in close proximity to each other, and are being looked after by one mine-boss. The number of men at work in each is but few. On one of my visits I found the ventilation bad, but it was improved on a subsequent visit. One of them will ere long be finished, when better attention can be given the other. Daniel Ryan, mine-boss.

O'Shanter No. 1.—I have not found this mine in good condition once nor do I expect to, for there is no power in the furnace, with only a few feet of shaft, and the leakages arising from the method of working are numerous. This mine was idle for some time during the summer on account of a strike among the workmen. W. J. McDowell, mine-boss.

O'Shanter No. 2.—There are but few men at work here and they are on the main current. There is a surplus of air. W. J. McDowell, mine-boss.

O'Shanter No. 3.—A new mine opened far up on the hill, with a long steep plane to bring the coal to the tipple. It is much troubled with rolls and clay veins. In two visits I found it well ventilated. T. W. Barrett, mine-boss.

Ophir.—This mine has only been worked about two months of the year. It is well opened for ventilation and the hauling of coal. It is intended to be ventilated on the split system. Eli Townsend, mine-boss.

Pacific.—This mine is now nearly exhausted. Early in the year there was trouble with the great quantities of black-damp given off. This

was especially the case on Monday mornings, or after a suspension of work. I, therefore, required that the furnace be kept burning every day and night; since then there has been no complaint. Edward Lloyd, mine-boss.

Pardee No. 1.—This mine has always been well cared for and the ventilation is always good, except sometimes in advance places which are being driven through faults, many of which of large dimensions have been encountered, sometimes dislocating the coal twenty feet. D. R. Phillips, mine-boss.

Pardee No. 2 is working the same territory as No. 1, but taking the coal in the opposite direction. This is an extensive mine, working nearly or altogether 300 men. There are three distinct currents of air circulating, and but for this arrangement being made for last summer, it would have been impossible to work so great a number. There is but one furnace for both mines, passing 60,000 cubic feet and over, since these splits were made. D. R. Phillips is also mine-boss here.

Phœnix.—A small mine, working about twenty persons, furnishing coal for locomotives. A new piece of coal has been liberated during the year by the putting in of a steam pump (pulsometer). This coal is higher and cleaner than that which has been worked here for years. The ventilation is generally fair. David G. Lawther, mine-boss.

Pioneer.—A mine working about thirty persons. A second opening was made early this year and the ventilation was improved. The mine is in fair condition. David G. Lawther, mine-boss.

Pleasant Hill.—This is a new mine and is being opened on correct principles; although the ventilation was not good when visited, which was on account of the needed connection not yet having been made. I expect good reports from this mine. Robt. Spense, mine-boss.

Queen No. 1.—A new drift has been made to this mine and the coal is lowered by incline plane instead of over a long crooked outside tramroad. The mine is now in good condition. J. L. Nicholson, mine-boss.

Queen No. 2, now Mt. Vernon No. 7 is a small, undeveloped mine. It was bought late in the year by the United Collieries Company, and is contracted by one of the former owners. David Green, mine-boss.

Retort.—I find this mine generally in fair condition, the total volume of air is scarcely sufficient to dilute the great amount of powder smoke that arises from so much blasting of the coal. This mine is fast being limited by water on one side and crop-line on the other, and in order to keep up the demand for coal, a drift has been opened on the second vein above. Samuel Twigg, mine-boss.

Robertsdale.—On one of my visits to this mine, I found a deficiency of ventilation in the face, but discovered that it was on account of the fan having been slackened in speed to enable men who were making repairs to work in the fan drift. This mine is always found in first-class condition otherwise. The rope haul here now is a mile in length, the side

track being in the face of the work so that coal is being brought on it from all directions. Chas. Conner, mine-boss.

Rothrock.—This mine consisting of several drifts is now nearly exhausted, the prospects of a few years ago having been blasted by faults throwing the coal out in all directions. These mines have generally been in good condition. John C. McDermott, mine-boss.

Reading.—This mine is not being pushed very hard, a few men only being at work. The ventilation is fair, but the drainage not so good. Much difficulty is encountered by rolls in the roof, cutting the coal sometimes nearly out. Michael Cairns, mine-boss.

Shoff.—I found this mine fairly ventilated on each time visited, but the drainage was not so good; but it is a hard matter to keep roads in good condition for the reason that the bottom is very soft fire-clay and ihe roof, sand-rock. This mine will be exhausted during this year, 1893. J. J. McGonigal, mine-boss.

Sommerville Nos. 4 and 6.—I found these mines well kept during this year; the ventilation was maintained by two furnaces which furnished a sufficient quantity in circulation. The roads are also well drained. Daniel J. Campbell, mine-boss.

Sommerville Nos. 5, 7 and 8.—No. 5 and 7 are well ventilated and well drained mines. They are ventilated on the split system; they are not extensive mines and will be exhausted before long. No. 8 is a new mine opened on a good system for ventilation. George Dixon, mine-boss.

Staffordshire.—This mine has generally been in good condition, but it came to an abrupt end during the year, a fault having been encountered surrounding the workings entirely and cutting them off. It is being worked with a few men at present and it was the intention to abandon it but now a new drift has been opened into a piece of coal which will keep things moving for some time. Thos. Brown, mine-boss.

Sterling No. 1.—The slope mine here is about finished. The ventilation has been just fair. For some months the driving of the advance headings and rooms has been a matter of serious apprehension, for the reason that it was known to be in the vicinity of a large body of water situated in the old Franklin mines and at an elevation many feet above the "Sterling" workings. The management was very vigilant and often referred to the map for guidance and was glad to abandon the place notwithstanding that according to the map, there was yet from 100 to 150 feet of coal to be taken out. The drift mine has considerable coal to be taken out yet, and the mine is in better shape for ventilation than the slope. A new mine was opened here on the Cap seam which is proving in good condition, the coal however is low and is called "tickle back" in consequence. Geo. Cummings, mine-boss.

Sterling No. 2.—This mine is still working a few men and considering the lack of advantages the operators have, they kept it in good condition by putting holes through from the surface for ventilation. Michael Craig, mine-boss.

Sterling No. 7.—I had considerable trouble at this mine during the early part of the year. First on account of there being no second opening, while more than twenty persons were at work, and all the time on account of defective ventilation. The mine was suspended however during the very warm months and was started again with better results in the fall. John McGroty, mine-boss.

Troy.—This mine is generally in good condition. On my visit to the mine late in the year I found that the air was not distributed as well as it might be, and there was no surplus quantity, the fan usually passing about 32,000 cubic feet, while there were about 320 or more persons employed. As the coal is being rapidly worked out to the boundary line, the number of men will be decreased and the same quantity being obtained, the condition will again be as formerly. John McGonigal, mine-boss.

Transit.—A small mine, has been under the provisions of the law for just a month during the year and was found during that time in fair condition. A. E. Howe was then mine-boss.

Victor No. 1.—This mine was in very bad condition for ventilation. So on the approach of warm weather I ordered that a shaft be put down near the face of workings which greatly improved the condition. When cold weather came, however, I had to again order that a furnace be built in this shaft which was done. This mine is now in better condition than it has been for many years, but there is still room for improvement. Alex. Montieth is now mine-boss.

Victor No. 3.—About fifteen persons had been at work here until August, when the number was reduced to eight persons and the mine-boss taken to No. 1. This mine has been illy ventilated also. They are now connected, to the benefit of both.

Vulcan.—This mine after having been abandoned for some time was reopened during the year. Some months were spent in pumping the water out. On two occasions, when visited, the mine was idle. Cornelius Meaher, mine-boss.

Washington.—After repeated efforts I succeeded in having this mine placed in such condition that on my last visit it was reported good. The mine has been much neglected and it required considerable work to bring about the aforesaid condition. John C. Johnson, mine-boss.

Webster.—The rate of improvement in this mine is slow, but it is steadily being brought into better condition both for ventilation and drainage. John Stoker, mine-boss.

Woodvale.—I found this mine in good condition. Many difficulties were encountered in opening these works, but everything is being done in a practical and substantial manner. A fan was put in during the year which gives good results. George Mitchel, mine-boss.

Woodland Cannel Nos. 1, 2 and 3.—These mines employ from twenty-four to thirty persons in all, and they were about equally divided amongst

the three. I found them in fair condition. H. S. Overly, mine-boss and superintendent.

Woodridge.—A few men are at work here taking out a small piece of cannel coal. When visited there was no boss nor need of one. There is now however a mine-boss engaged and a few months will finish it. Charles Rodden, mine-boss.

TABLE No. 1.— *Showing Location of Collieries in the Eighth Bituminous Mine District.*

NAME OF COLLIERY.	Name of Operator.	Location—County.	Name of Superintendent.	Postoffice Address.
Acme	Jones & Walton	Clearfield	John Walton	Philipsburg, Pa.
Alexander	Thomas Blythe & Co.	do.	Thomas Blythe	Madera, Pa.
Ashland	Berwind White Coal Mining Company	do.	Peter Cameron	Houtzdale, Pa.
Atlantic No. 1	do. do.	do.	do.	do.
Atlantic No. 2	do. do.	do.	do.	do.
Baltic Nos. 1, 2 and 3	Baltic Coal Company	do.	Joseph H. Riley	Philipsburg, Pa.
Belverne	H. K. Myers	do.	Robert Whitehead	Houtzdale, Pa.
Bessemer	Henry Liveright	do.	J. S. Catherman	Osceola Mills, Pa.
Black Diamond	W. J. Jackson & Co.	Centre	Robert A. Jackson	do.
Bloomington Nos. 1, 2, 3 & 4	Bloomington Mining Company	Clearfield	John Dunsmore	Glenrichey, Pa.
Brittanie	George Rees & Co.	do.	George Rees	Karthaus, Pa.
Brown No. 2	Sweet & Brown	Bedford	W. H. Sweet	Saxton, Pa.
Benedict or Reed's	W. S. Reed	Huntingdon	W. W. Reed	Dudley, Pa.
Decatur Nos. 1 and 2	John Nuttall & Co.	Clearfield	G. W. McGaffey	Philipsburg, Pa.
Derby	Thomas Barnes & Bro.	do.	Thomes Barnes	do.
Drane	T. C. Hlems	do.	T. C. Hlems	Osceola Mills, Pa.
Cateract	Berwind White Coal Mining Company	do.	A. J. Cook	Bellefonte, Pa.
Chevington	Lambirth Coal Mining Company	Bedford	John Langdon	Hopewell, Pa.
Colorado Nos. 1, 2 and 3	Jackman & Ellsworth	Clearfield	Jackman & Ellsworth	Philipsburg, Pa.
Columbia No. 5	Mitchell Coal and Coke Company	do.	B. F. Smith	Osceola Mils, Pa.
Crescent	Lambirth Mining Company	Bedford	John Langdon	Hopewell, Pa.
Cumberland	H. and B. T. M. R. R. and Coal Company	do.	do.	do.
Central	T. C. Hiems	Centre	T. C. Hlems	Osceola Mills, Pa.
Champion	Denithorne & Rowland	Clearfield	C. H. Rowland	Houtzdale, Pa.
Coaldale Nos. 3 and 5	O. Perry Jones	do.	James R. Fleming	Philipsburg, Pa.
Cookes.				
Cunard.				
Cambria Nos. 1 and 3	The United Collieries Company	Bedford	James Denithorne	Huntingdon, Pa.
Electric	T. C. Hiems	Centre	T. C. Hlems	Osceola Mills, Pa.
Eureka No. 2	Berwind White Coal Mining Company	Clearfield	Peter Cameron	Houtzdale, Pa.
Eureka No. 5	do. do.	do.	do.	do.
Eureka No. 7	do. do.	do.	do.	do.
Eureka No. 8	do. do.	do.	do.	do.
Eureka No. 9	do. do.	do.	do.	do.
Eureka No. 11	do. do.	do.	do.	do.
Eureka No. 13	do. do.	do.	do.	do.
Eureka No. 14	B. W. C. M. Co., H. Liveright, contractor	do.	J. S. Catherman	Osceola Mills, Pa.
Eureka No. 16	Berwind White Coal Mining Company	do.	Peter Cameron	Houtzdale, Pa.
Eureka No. 17	B. W. C. M. Co., Jas. Gatehouse, contractor	do.	do.	do.
Eureka No. 18	Berwind White Coal Mining Company	do.	do.	do.
Eureka No. 19	do. do.	do.	do.	do.
Excelsior No. 4	do. do.	do.	do.	do.
Fairmount	Henry Liveright	do.	J. S. Catherman	Osceola Mills, Pa.
Ferndale	John Maurice now Ricket Bros.	do.	George Gould	Brisbin, Pa.
Fisher	E. Elchelberger & Co.	Huntingdon	E. Elchelberger	Saxton, Pa.
Forest Nos. 1 and 2	Jones & Walton	Clearfield	John Walton	Philipsburg, Pa.

Fulton,	Liveright, McCoy & Co.,	do.	J. S. Catherman.	Osceola Mills, Pa.
Gazzam Nos. 1 and 4,	Clearfield Bituminous Coal Corporation,	do.	Robert A. Shillingford,	Peale, Pa.
Gearhart,	Thomas Lee & Co., Limited,	do.	Thomas J. Lee.	Philipsburg, Pa.
Ghem,	Ghem Coal Company,	Centre,	George R. Good,	Osceola Mills, Pa.
Glenwood Nos. 1 and 2,	Williams, Morris & Co.,	Clearfield,	John M. Campbell,	Philipsburg, Pa.
Grampion,	R. C. Fishburn & Co.,	do.	R. C. Fishburn,	Munsons, Pa.
Grassflat,	Clearfield Bituminous Coal Corporation,	do.	Robert A. Shillingford,	Peale, Pa.
Gulon,	Sanford & Duncan,	do.		Philipsburg, Pa.
Hickes.				
Henderson,	Delong & Gould,	do.	Joel Delong.	Brisbin, Pa.
Highland,	Jones & Walton,	do.	John Walton.	Philipsburg, Pa.
Huntingdon,	E. F. Gould,	Huntingdon,	E. F. Gould,	Dudley, Pa.
Jefferson,	Adams & Co.,	Clearfield,	J. M. Sheppard.	Philipsburg, Pa.
Karthaus,	B. W. C. M. Co., Spears & Cowan, contractors,	do.	A. G. Spears,	Karthaus, Pa.
Kearney,	Joseph E. Thropp,	Bedford.	Thomas A. Jones,	Kearney, Pa.
Kentuck,		Clearfield.		
Keystone,	Hirsh & Reed,	do.	W. W. Reed,	Hontzdale, Pa.
Knox Run,	Clearfield Bituminous Coal Corporation,	do.	Robert A. Shillingford,	Peale, Pa.
Kyler,	R. C. Fishburn,	do.	R. C. Fishburn,	Munsons, Pa.
Lancashire Nos. 1 and 2,	Thomas Barnes & Bro.,	do.	Thomas Barnes,	Philipsburg, Pa.
Leland,	Lewis, Taylor & Williams,	do	D. D. Lewis,	Ramey, Pa.
Logan,	H. Liveright & Co.,	do.	J. S. Catherman,	Osceola Mills, Pa.
Loraine,	Reakirt Bro's. Co.,	do.	George Gould,	Brisbin, Pa.
Lueder,	A. B. & G. W. Lueder,	do.	George W. Lueder.	Munsons, Pa.
Mapleton,	B. W. C. M. Co., H. Liveright, contractor,	do.	J. S. Catherman.	Osceola Mills, Pa.
Montana,	J. W. Swires & Co.,	do.	J. Swires,	Philipsburg, Pa.
Mabel,	Thomas Blythe & Co.,	do.	Thomas Blythe,	Madera, Pa.
Morrisdale,	R. B. Wigdon & Sons,	do.	Charles E. Sharpless,	Philipsburg, Pa.
Moravian,	Clearfield Bituminous Coal Corporation,	do.	Robert A. Shillingford,	Peale, Pa.
Mt. Equity,	Kemble Iron Company,	Bedford,	William Lauder,	Riddlesburg, Pa.
Mt. Vernon No. 5,	The United Collieries Company.	Clearfield.		
Mt. Vernon No. 6,	do. do.	do.		
Ocean Nos. 1 and 2,	Berwind White Coal Mining Company,	do.	Peter Cameron,	Houtzdale, Pa.
Ocean Nos. 1 and 2,	W. H. Sweet,	Huntingdon,	W. H. Sweet.	Saxton, Pa.
Orient,	Blair Brothers,	Centre,	L. B. Beaver,	Tyrone, Pa.
O'Shanter Nos. 1, 2 and 3,	Beech Creek Cannel Coal Company,	Clearfield,	Kerr & Weaver, contr's,	Clearfield, Pa.
Ophir,	Hoyt & Ashman,	Centre,	A. V. Hoyt,	Philipsburg, Pa.
Pacific,	Berwind White Coal Mining Company,	Clearfield,	Peter Cameron,	Houtzdale, Pa.
Pardee Nos. 1 and 2,	George J. Magee,	do.	W. C. Lingle.	Philipsburg, Pa.
Pioneer,	Henry Liveright,	Centre,	J. S. Catherman,	Osceola Mills, Pa.
Phoenix,	do.	do.	do.	do.
Pleasant Hill,	Clearfield Bituminous Coal Corporation,	Clearfield,	Robert A. Shillingford,	Peale, Pa.
Queen No. 1,	Queen Coal Company,	do.	W. C. Duncan,	Philipsburg, Pa.
Queen No. 2.				
Reading,	Penn Iron Company,	do.	James P. Hale,	do.
Robertsdale,	Rockhill Iron and Coal Company,	Huntingdon,	Charles Connor,	Robertsdale, Pa.
Rothrock,	R. B. Wigdon & Sons,	Clearfield,	Charles E. Sharpless,	Philipsburg, Pa.
Sommerville Nos. 4, 5, 6, 7 and 8,	Sommerville & Buchanan,	do.	John L. Sommerville,	Winburne, Pa.
Shoff,	R. B. Wigdon & Sons,	do.	Charles E. Sharpless,	Philipsburg, Pa.
Staffordshire,	Thomas Barnes & Bro.,	do.	Thomas Barnes,	do.
Sterling Nos. 1 and 7,	Sterling Coal Company,	do.	Thomas E. McHugh,	Houtzdale, Pa.
Sterling No. 2,	Leonard & Craig,	do.	Michael Craig,	Brisbin, Pa.
Transit,	P. E. Womelsdorff,	do.	P. E. Womelsdorff,	Philipsburg, Pa.
Troy,	R. B. Wigdon & Sons,	do.	Charles E. Sharpless,	do.

TABLE 1.—*Continued.*

NAME OF COLLIERY.	Name of Operator.	Location--County.	Name of Superintendent.	Postoffice Address.
Victor Nos. 1, 2 and 3. . .	Bloomington Mining Company.	Clearfield, ...	Alexander Dunsmore, . .	do.
Vulcan, ...	R. B. Wigdon & Sons, ...	do.	Charles E. Sharpless, . .	do.
Washington, ...	Thomas & Co., ...	do.	J. M. Sheppard.	do.
Webster No. 4, ...	Beulah Coal Company, Limited, ...	do.	James H. Minds.	Ramey, Pa.
Woodland No. 1 and Keck's Nos. 2 and 3, ...	Woodland Canal Coal Company, ...	do.	H. S. Overly.	Woodland, Pa.
Woodvale shaft.	Rockhill Iron and Coal Company, ...	Huntingdon, ...	Charles Conner, ...	Robertsdale, Pa.
Woolridge, ...	A. E. Woolridge, ...	Clearfield, ...	A. E. Woolridge, ...	Woodland, Pa.

TABLE NO. 2.—*Giving the total number of tons of coal mined and tons of coke produced in each colliery, number of days worked, number of employes, number of persons killed and injured, number of kegs of powder used, etc., in the Eighth Bituminous Mine District for the year ending December 31, 1892.*

NAME OF COLLIERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Acme	Clearfield	8,115	.....	8,115	118	26	....	....	.....	1	3	1	....
Alexander	do.	19,440	.....	19,440	285	27	....	....	.....	....	3	....	....
Ashland	do.	18,442	.....	18,442	250	25	....	....	.....	....	3	....	....
Atlantic No. 1	do.	236,575	.....	232,779	244	331	....	4	529	5	25	2	....
Atlantic No. 2	do.	149,870	.....	147,063	198	191	....	1	367	6	20	2	....
Baltic Nos. 1, 2 and 3	do.	103,042	.....	103,042	204	191	....	....	440	....	19	....	....
Belverne	do.	18,746	.....	18,746	150	44	....	....	140	1	5	....	....
Bessemer	do.	24,654	.....	24,654	139	41	....	1	87	....	5	....	....
Black Diamond	Centre	26,880	.....	26,880	200	91	....	....	144	1	8	1	....
Bloomington No. 2	Clearfield	20,985	.....	20,985	94	39	....	....	160	1	4	....	....
Bloomington No 3	do.	108,484	.....	108,484	196	156	....	4	751	....	7	....	....
Bloomington No. 4	do.	51,701	.....	51,701	196	81	....	....	400	....	2	....	....
Brittanie	do.	15,326	.....	15,326	221	32	....	....	.....	....	4	....	....
Brown No. 2	Bedford	99,043	.....	99,043	217	189	1	1	350	1	18	....	....
Benedicts or Reeds	Huntingdon	30,000	.....	30,000	200	56	....	....	200	....	3	....	....
Chevington	Bedford	35,709	.....	35,709	280	48	....	....	.....	....	2	....	....
Decatur No. 1	Clearfield	107,162	.....	107,162	206	123	....	1	.....	....	6	....	....
Decatur No. 2	do.	46,731	.....	46,731	224	43	....	....	.....	....	2	....	....
Derby	do.	44,968	.....	44,968	185	73	1	....	450	....	4	....	....
Drane	do.	19,224	.....	19,224	182	38	....	....	85	....	4	....	....
Cataract	do.	98,785	.....	98,785	203	183	1	3	1,091	....	27	....	....
Colorado Nos. 1 and 2	do.	86,943	.....	86,943	266	109	....	3	870	....	20	....	....
Colorado No. 3	do.	21,355	.....	21,355	135	47	....	....	200	1	3	....	....
Columbia No. 5	do.	51,976	.....	51,976	168	113	....	1	361	....	7	....	....
Crescent	Bedford	96,944	.....	96,944	263	152	....	....	.....	2	13	....	....
Cumberland	do.	96,720	.....	96,720	263	131	....	3	.....	1	15	....	....
Central	Centre	10,629	.....	10,629	120	21	....	....	58	....	4	....	....
Champion	Clearfield	15,584	.....	15,584	105	48	....	....	25	....	....	....	....
Coaldale No. 3	do.	163,895	.....	162,215	207	217	....	....	.....	5	19	....	....

TABLE NO. 2 —*Continued.*

NAME OF COLLIERIES.	Location.	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Coaldale No. 5,	Clearfield,	103,846		102,782	190	172				3	21		
Cooks,	do.	22,100		22,100	200	35				1	5		
Cunard,	Bedford,	38,782		38,169	176	92		1	105	2	14	1	18
Cambria No 1,	do.	35,690		35,690	240	49			400		9		
Cambria No. 2,	do.	34,419		33,559	186	72		1	300	3	10		
Electric,	Centre,	6,473		6,473	85	28			36		2		
Eureka No. 2,	Clearfield,	126,781		126,781	231	172		7	395		19		
Eureka No. 5,	do.	105,150		102,668	181	181		3	315	6	34		
Eureka No. 7,	do.	123,676		121,867	250	166	1	5	695	3	15		
Eureka No. 8,	do.	104,636		104,334	159	174			564		16		
Eureka No. 9,	do.	42,911		42,771	192	75			242	3	4		
Eureka No. 11,	do.	46,042		45,999	112	60		3	221		10		
Eureka No. 12,	do.	33,246		33,246	260	40		2			3		
Eureka No. 13,	do.	9,481		9,481	106	29					2		
Eureka No. 14,	do.	97,945		97,945	221	141		1	760		18		
Eureka No. 16,	do.	32,588		32,493	142	89			119		6		
Eureka No. 17,	do.	57,054		57,054	194	114	1		300	1	5		
Excelsior No. 4,	do.	32,591		32,468	165	52		2	192		12		
Fairmount,	do.	2,319		2,319					25				
Ferndale,	do.	7,280		7,280	131	30					4		
Fisher,	Huntingdon,	12,567		12,500	194	34			125		4		
Forest No. 1,	Clearfield,	145,885		145,885	251	177					12		
Fulton,	do.	9,422		9,422									
Gazzam No. 1,	do.	96,913		92,090	245	177		1	807	1	14		
Gazzam No. 4,	do.	25,364		25,213	255	42			475		2	1	
Gearhart,	do.	46,057		46,057		115			150		5		
Ghem,	Centre,	43,220		43,220	263	86			292		4		
Glenwood Nos. 1 and 2,	Clearfield,	95,460		95,460	250	109		1	340		10		
Grampian,	do.	10,695		10,695	90	28			100		2		
Grassflat,	do.	166,604	48,705	87,126	246	324		1	191	2	19		
Guion,	do.	12,159		12,159	100	35			75		2		
Hickes,	Huntingdon,	12,000		12,000	180	17					2		
Henderson,	Clearfield,	13,644		13,644	164	19					3		100

Highland,	do.	26,997		26,997	196	40				1	5		
Huntingdon,	Huntingdon,	17,682		17,682	200	43			60		4		
Jefferson,	Clearfield,	9,290		9,290	129	30			65		2		
Karthaus,	do.	63,280		63,280	250	91	1		240		11		
Kearney,	Bedford,	39,894	25,876	3,583	140	139			155	1	9		110
Kentuck,	Clearfield,	11,566		11,566	132	32			50		2		
Keystone,	do.	6,476		6,476	76	30			40			1	
Knox Run,	do.	23,717		23,717	226	45					2		
Kyler,	do.	45,128	5,290	36,686	179	81		1	379	1	9		50
Lancashire No. 1	do.	121,652		119,650	207	197			1,100		22		
Lancashire No. 2,	do.	51,656		51,656	211	89			475		8		
Leland,	do.	12,407		11,077	134	106			250		2		
Logan,	do.	32,310		32,310	197	58		1	120		14		
Loraine,	do.	17,256		17,256	192	32			150				
Lueder,	do.	16,201		16,201	185	31			75	1	3		
Mapleton,	do.	22,148		22,148	161	38			140		8		
Montana,	do.	36,000		36,000	197	74		2	300		10		
Mabel,	do.	24,430		23,994	267	48		1	132		2		
Morrisdale,	do.	43,942		43,942	175	123		2		2	6		106
Moravian,	do.	58,051		56,894	226	88					4		
Mt. Equity,	Bedford,	68,559		68,559	309	69		1	25		12		
Mt. Vernon No. 5,	Clearfield,	98,000		97,134	199	166		3		2	22	1	
Mt. Vernon No. 6,	do.	61,242		59,227	195	102		1		2	8	1	
Ocean No. 1,	do.	76,291		75,782	205	97					13		
Ocean No. 2,	do.	144,811		142,502	243	199		2		6	28		
Ocean No. 1,	Huntingdon,	26,159		25,427	200	44			300		6		
Ocean No. 2,	do.	35,265		35,265	200	71			500		7		
Orient,	Centre,	66,245		66,245	285	68			350		8		
O'Shanter No. 1,	Clearfield,	75,055		75,055	225	130		2					
O'Shanter No. 2,	do.	8,562		8,562	145	25							
O'Shanter No. 3,	do.	16,800		16,800	190	45							
Ophir,	Centre,	18,371		18,371		72							
Pacific,	Clearfield,	67,143		67,143	208	70					10		
Pardee No. 1,	do.	101,573		98,976	262	150			640	4	14		
Pardee No. 2,	do.	274,822		274,534	247	381			935	1	24		
Pioneer,	Centre,	14,660		14,660	214	22			135		2		
Phœnix,	do.	20,011		20,011	301	32			80	1			
Pleasant Hill,	Clearfield,	34,188		34,198	189	75	1				4		
Queen No. 1,	do.	26,533		26,533	200	41	1		125		3		
Queen No. 2,	do.	7,000		7,000	150	12					1		
Reading,	do.	13,665		13,665	216	34			100		4		
Robertsdale,	Huntingdon,	175,090	41,604		268	285	1	2	1,500	10	32		
Rothrock,	Clearfield,	90,612		90,612	189	214				3	8		
Sommerville Nos. 5 and 7,	do.	57,813		51,619	194	132		1	500	1	5		
Sommerville Nos. 4 and 6,	do.	84,949		84,339	195	125			800		6		
Shoff,	do.	68,200		68,200	213	104			316		9		
Staffordshire,	do.	38,264		38,264	240	66	1		350		5		
Sterling No. 1,	do.	137,248		137,248	245	151		2	1,000	1	16	2	
Sterling No. 7,	do.	48,474		48,474	144	101		1	500	1	4		
Sterling No. 2,	do.	20,407		20,407	200	42			150		7		
Transit,	do.	1,767		1,578									
Troy,	do.	221,374		221,374	175	366		2		1	13		
Victor No. 1,	do.	102,448		102,448	215	164		1	500		16	1	
Victor No. 3,	do.	10,321		10,321	142	15			50		2		
Vulcan,	do.	11,630		11,630	103	66			92	1	6	1	
Washington,	do.	30,345		30,345	259	55			195		3		
Webster No. 4,	do.	84,815		75,495	169	157	1	2	422	1	14		

TABLE No. 2.—*Continued.*

NAMES OF COLLIERIES.	Location	Total production in tons of coal.	Total production in tons of coke.	Total shipment in tons of coal.	Number days worked.	Number persons employed.	Number fatal accidents.	Number non-fatal accidents.	Number kegs powder used.	Number steam boilers.	Number horses and mules.	Number mine locomotives.	Number coke ovens.
Woodland No. 1 and Knecks No. 2	Clearfield	7,959		7,776	243	24					1	1	
Knecks No. 3	do.	3,749		3,609	140	10					1		
Woodvale shaft	Huntingdon	41,242			298	118			59	6	10		
Woolridge	Clearfield	10,052		10,052	183	22			650		4		
Elmira	Bedford	8,000		8,000									
McIntyre's	do.	8,000		8,000									
Finley	do.	4,000		4,000									
Forsythe Bros.	Clearfield	7,000		7,000									
Mrs. Wilkinson	do.	4,000		4,000									
Silas Reese	do.	5,000		5,000									
David Turnbull	do.	6,000		6,000									
Perks	do.												
Total		6,811,735	121,455	6,460,712	23,286	11,277	11	77	27,935	95	998	16	384

TABLE NO. 3.—*Showing the number of each class of employes at each colliery in the Eighth Bituminous Mine District during the year 1892.*

Names of Collieries.	Location.	Occupations of Persons Employed Inside.							Occupations of Persons Employed Outside.							Grand total inside and outside.
		Inside foreman or mine-boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door-boys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers, cokers and yard men.	All company men.	Superintendents, book-keepers and clerks.	Total outside.	
Acme,	Clearfield,	1	15	...	3	3	1	22	...	...	1	...	1	2	4	26
Alexander,	do.	1	20	3	...	2	...	25	...	...	...	...	2	...	2	27
Ashland,	do.	1	20	3	...	2	...	25	...	...	...	...	1	...	1	26
Atlantic No. 1,	do.	1	232	18	17	19	14	300	...	2	2	...	6	3	13	313
Atlantic No. 2,	do.	1	155	10	9	7	...	181	...	2	2	...	4	2	10	191
Baltic Nos. 1, 2 and 3,	do.	1	136	29	2	10	4	181	...	1	...	...	7	1	9	190
Belverne,	do.	1	30	5	1	4	2	42	...	1	...	...	1	...	2	44
Bessemer,	do.	1	27	6	1	4	1	39	...	...	...	...	1	1	2	41
Black Diamond,	Centre,	1	70	6	3	6	3	88	...	1	...	...	1	1	3	91
Bloomington No. 2,	Clearfield,	1	26	5	3	1	1	36	...	...	...	...	3	...	3	39
Bloomington No. 3,	do.	1	124	11	3	6	2	147	...	2	...	...	4	3	9	156
Bloomington No. 4,	do.	1	65	5	3	2	1	76	...	...	...	...	4	1	5	81
Brittanic,	do.	1	22	3	2	2	...	30	...	...	...	...	2	...	2	32
Brown No. 2,	Bedford,	1	125	20	3	15	2	165	...	2	...	...	8	2	12	189
Benedict or Reed,	Huntingdon,	1	40	8	1	3	...	52	...	1	...	...	2	1	4	56
Decatur No. 1,	Clearfield,	1	82	16	5	8	1	112	...	2	...	...	8	2	12	124
Decatur No. 2,	do.	1	34	3	1	2	...	40	...	...	...	...	2	1	3	43
Derby,	do.	1	45	15	2	6	1	69	...	1	...	...	2	1	4	73
Drane,	do.	1	20	2	1	2	1	26	...	1	...	...	1	...	2	28
Cateract	do.	1	140	4	7	12	5	168	...	2	...	...	10	3	15	183
Chevington,	Bedford,	1	35	2	2	5	1	45	...	1	...	...	1	1	3	48
Colorado Nos. 1 and 2,	Clearfield,	1	78	15	3	6	3	105	...	1	...	...	3	...	4	109
Colorado No. 3,	do.	1	30	10	1	2	...	43	...	1	...	...	3	...	4	47
Columbia No. 5,	do.	1	95	5	1	5	3	109	...	1	...	...	3	...	4	113
Crescent,	Bedford,	1	107	13	2	11	9	142	...	2	...	...	6	2	10	152
Cumberland,	do.	1	90	10	3	10	10	123	...	2	...	...	5	2	9	131
Central,	Centre,	1	15	3	...	2	...	20	...	...	...	...	...	...	1	21
Champion,	Clearfield,	1	36	6	1	3	...	46	...	1	...	...	1	...	2	48
Coaldale No. 3,	do.	1	160	18	4	17	4	203	...	2	...	...	10	2	14	217
Coaldale No. 5,	do.	1	120	15	3	18	4	160	...	2	...	...	8	2	12	172
Cooke's,	do.	1	25	1	...	2	1	29	...	1	...	...	4	1	6	35

TABLE No. 3.—*Continued.*

NAMES OF COLLIERIES.	Location.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.							OCCUPATIONS OF PERSONS EEPLOYED OUTSIDE.							Grand totals—inside and outside.
		Inside foreman or mine-boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door boys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers, cokers and yard men.	All company men.	Superintendents, book-keepers and clerks.	Total outside.	
Cunard,	Bedford,	1	61	5	4	10	2	82	...	2	1	...	6	1	10	92
Cambria No. 1,	do.	1	40	2	1	9	2	54	...	2	...	...	1	3	5	59
Cambria No. 3,	do.	1	50	4	2	3	...	59	...	2	...	...	8	3	13	72
Electric,	Centre,	1	22	3	1	1	...	27	...	...	...	...	1	...	1	28
Eureka No. 2,	do.	1	75	20	3	6	2	106	...	1	...	...	3	2	6	112
Eureka No. 5,	do.	1	122	24	12	9	5	172	...	2	...	...	5	2	9	181
Eureka No. 7,	do.	1	135	9	3	6	4	157	...	2	...	...	5	2	9	166
Eureka No. 8,	do.	1	125	26	4	9	3	167	...	1	...	...	4	2	7	174
Eureka No. 9,	do.	1	56	3	4	3	1	67	...	2	...	...	4	2	8	75
Eureka No. 11,	do.	1	45	4	3	2	1	55	...	1	...	...	2	2	5	60
Eureka No. 12,	do.	1	30	5	1	2	...	38	...	1	...	...	...	1	2	40
Eureka No. 13,	do.	1	23	...	2	1	...	26	...	...	...	...	2	1	3	29
Eureka No. 14,	do.	1	91	25	3	11	4	134	...	1	...	...	5	1	7	141
Eureka No. 16,	do.	1	71	6	3	3	1	84	...	1	...	...	2	2	5	89
Eureka No. 17,	do.	1	95	5	1	5	2	108	...	1	...	...	4	1	6	114
Excelsior No. 4,	do.	1	40	2	2	3	1	48	...	1	...	...	1	2	4	52
Fairmount,	Clearfield,	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ferndale,	do.	1	22	4	2	...	...	28	...	...	...	...	...	1	2	30
Fisher,	Huntingdon,	1	26	2	2	2	...	32	...	1	...	...	...	1	2	34
Forest No. 1,	Clearfield,	1	150	2	4	8	1	165	...	1	...	...	9	2	12	177
Fulton,	do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gazzam No. 1,	do.	1	130	5	8	10	6	159	...	3	...	...	13	2	18	177
Gazzam No. 4,	do.	1	33	1	2	2	1	39	...	1	...	...	2	...	3	42
Gearhart,	do.	1	92	8	1	5	3	109	...	1	...	...	4	1	6	115
Ghem,	Centre,	1	59	17	1	4	...	81	...	1	...	...	3	1	5	86
Glenwood Nos. 1 and 2,	Clearfield,	1	90	5	1	6	...	102	...	1	...	...	3	3	7	109
Grampian,	do.	1	20	...	1	2	...	23	...	...	...	...	4	1	5	28
Grassflat,	do.	1	191	12	14	15	8	240	...	8	...	36	35	5	84	324
Guion,	do.	1	25	2	...	2	2	31	...	1	...	...	2	1	1	35
Hickes,	Huntingdon,	1	14	...	1	2	...	17	...	...	...	...	...	...	...	17

Henderson,	Clearfield,	1	11	2	...	2	...	18	...	...	...	...	1	...	1	19
Highland,	do.	1	30	...	1	3	...	34	...	1	...	...	3	2	6	40
Huntingdon,	Huntingdon,	1	32	3	1	3	...	39	...	1	...	...	2	1	1	43
Jefferson,	Clearfield,	1	25	...	1	1	...	27	...	...	...	...	2	1	3	30
Karthaus,	do.	1	68	2	4	5	...	79	...	2	...	...	8	2	12	91
Kearney,	Bedford,	1	75	10	2	6	2	95	...	2	...	33	7	2	44	139
Kentuck,	Clearfield,	1	26	2	2	2	...	29	...	...	...	...	2	1	3	32
Keystone,	do.	1	25	...	...	1	...	26	...	...	...	...	3	1	4	30
Knox Run,	do.	1	35	3	1	2	...	41	...	1	...	...	2	1	4	45
Kyler,	do.	1	56	4	2	3	2	67	...	1	...	5	6	2	14	81
Lancashire No. 1,	do.	1	130	40	3	10	5	188	...	2	...	...	5	2	9	197
Lancashire No. 2,	do.	1	60	16	2	5	2	48	...	1	...	...	3	1	5	89
Leland,	do.	1	87	4	5	2	...	98	...	5	...	...	1	2	8	106
Logan,	do.	1	40	6	1	6	2	55	...	1	...	...	1	1	3	58
Loraine,	do.	...	25	5	...	2	...	32	...	...	...	...	...	...	...	32
Lueder,	do.	1	20	2	1	2	1	26	...	1	...	...	3	1	5	31
Mapleton,	do.	...	22	8	1	3	1	35	...	1	...	...	1	1	3	38
Montana,	do.	1	50	10	1	7	1	69	...	1	...	...	3	1	5	74
Mable,	do.	1	38	5	1	2	...	46	...	...	...	...	1	1	2	48
Morrisdale,	do.	1	76	3	3	7	1	90	...	2	...	28	2	1	33	123
Moravian,	do.	1	70	4	1	4	2	81	...	1	...	...	5	1	7	88
Mt. Equity,	Bedford,	1	40	6	4	9	3	62	...	2	...	...	4	1	7	69
Mt. Vernon No. 5,	Clearfield,	1	130	10	3	13	2	158	...	2	1	...	3	2	8	166
Mt. Vernon No. 6,	do.	1	71	8	5	4	3	91	...	2	1	...	6	2	11	102
Ocean No. 1,	do.	1	72	8	6	6	...	92	...	1	...	...	2	2	5	97
Ocean No. 2,	do.	1	154	11	7	11	5	188	...	2	...	...	6	3	11	199
Ocean No. 1,	Huntingdon,	1	35	3	2	3	...	43	...	1	...	...	...	...	1	44
Ocean No. 2,			60	4	...	5	...	69	...	1	...	...	1	...	2	71
Orient,	Centre,	1	55	...	2	5	2	64	...	1	...	...	1	2	4	68
O'Shanter No. 1,	Clearfield,	1	110	...	10	5	1	125	...	1	...	...	3	1	5	130
O'Shanter No. 2,			20	...	2	1	...	23	...	...	...	...	1	1	2	25
O'Shanter No. 3,	do.	1	30	4	3	2	...	39	...	1	...	...	4	1	6	45
Ophir,	Centre,	1	60	2	...	3	...	65	...	1	...	...	4	2	7	72
Pacific,	Clearfield,	1	46	10	4	4	1	65	1	1	...	...	2	2	5	70
Pardee No. 1,	do.	1	81	27	12	16	5	141	...	1	...	...	5	3	9	150
Pardee No. 2,			233	77	15	26	14	365	...	1	...	...	12	3	16	381
Pioneer,	Centre,	1	14	4	...	1	1	20	...	...	...	...	1	1	2	22
Phœnix,			20	4	3	2	1	30	...	...	...	...	1	1	2	32
Pleasant Hill,	Clearfield,	1	60	4	2	3	...	69	...	1	...	...	4	1	6	75
Queen No. 1,	do.	1	30	...	...	2	2	34	...	1	...	...	4	2	7	41
Queen No. 2,	do.	...	10	...	...	1	...	11	...	...	...	...	1	...	1	12
Reading,	do.	1	25	4	2	1	...	32	...	...	...	...	1	1	2	34
Robertsdale,	Huntingdon,	1	180	30	1	11	6	234	...	3	...	33	12	3	51	285
Sommerville Nos. 5 and 7,	Clearfield,	1	103	11	5	5	...	124	...	1	...	...	6	1	8	132
Sommerville Nos. 4 and 6,	do.	1	97	10	2	6	2	117	...	1	...	...	5	2	8	125
Shoff,	do.	1	86	6	1	6	2	101	...	1	1	...	1	...	3	104
Staffordshire,	do.	1	50	6	2	3	1	62	...	1	...	...	2	1	4	66
Sterling No. 1,	do.	1	120	4	3	8	2	137	...	3	...	...	10	1	14	151
Sterling No. 7,	do.	1	82	12	1	2	2	99	...	...	...	...	2	...	2	101
Sterling No. 2,	do.	1	34	6	...	2	...	42	...	...	...	...	...	...	...	42
Transit,	do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troy,	do.	1	325	8	4	12	3	352	...	3	...	...	10	1	14	366
Victor No. 1,	do.	1	135	3	5	8	2	153	...	1	...	...	8	2	11	164
Victor No. 3,			13	...	...	1	...	14	...	...	...	...	1	...	1	15
Vulcan,	do.	1	46	7	2	6	2	63	...	1	1	...	1	...	3	66
Rothrock,	do.	1	182	10	3	7	3	205	...	2	...	...	6	1	9	214
Washington	do.	1	40	5	1	2	2	50	...	1	...	...	3	1	5	55

TABLE No. 3.—*Continued.*

NAMES OF COLLIERIES.	Location.	OCCUPATIONS OF PERSONS EMPLOYED INSIDE.								OCCUPATIONS OF PERSONS EMPLOYED OUTSIDE.							Grand total—inside and outside.
		Inside foreman or mine-boss.	Miners.	Miners' laborers.	All company men.	Drivers and runners.	Door-boys and helpers.	Total inside.	Outside foreman.	Blacksmiths and carpenters.	Engineers and firemen.	Slate pickers, cokers and yard men.	All company men.	Superintendent, bookkeepers and clerks.	Total outside.	
Webster No. 1	Clearfield	1	128	3	2	9	2	144	...	2	...	...	9	2	13	157
Woodland No. 1 and Keck's No. 2	do.	1	16	1	1	1	...	19	...	...	...	...	4	1	6	24
Keck's No. 3	do.	...	7	...	1	1	...	9	...	...	...	...	...	1	1	10
Woodvale shaft	Huntingdon	1	82	6	4	9	2	103	...	3	...	...	10	2	15	118
Woodridge	Clearfield	1	17	...	...	2	...	19	...	...	...	...	2	1	3	22
Total	...	4	8,255	914	332	640	213	10,351	...	135	10	135	461	155	898	11,510

TABLE No. 4 — *List of fatal accidents which occurred in and about the mines of the Eighth Bituminous Mine District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location County.	Nature and Cause of Accident.
Feb 18.	Paul Fulley.	Laborer.	18	S.	..	Cataract.	Clearfield.	Fatally injured, both legs being broken and head and shoulders crushed; died in four hours after. His work was running cars down a gravity tramroad; he was seated on front end of second car in the trip, and the first car became uncoupled and was moving faster than the rest of the trip. On seeing this car leaving the trip he attempted to leap on it, but missed his aim and fell, when the car ran over him.
Mar. 21.	Steve Berrish.	Miner.	40	M.	2	Karthaus.	do.	Killed outright by a fall of coal while mining. The coal was three feet thick, mined under about three feet, a piece fifteen feet long and loose at one end being mined without support.
Apr. 22.	Joseph Acton.	do.	51	M.	7	Derby.	do.	Killed by fall of coal probably one and a half tons in weight; the piece being mined was about six and one-half feet long, was mined under about two and one-half feet; tight at both ends, but an unobserved V-shaped slip fell with the above result.
30.	William Cook.	do.	45	S.	..	Chester, now Eureka No. 17.	do.	Fatally injured, died the next day by fall of rock at working face. The seam was thin here, about two feet ten inches, and top was being blasted to make road height. This blasting had shattered the rock over where the man was at work; he was aware of this condition, but preferred not to be hampered for room by setting a prop as he should have done.
June 9.	W. E. Reims.	do.	24	S.	..	Eureka No. 11.	do.	Killed almost instantly by fall of rock; was driving forward in sixteen inches of coal to test the fault the place was into the coal face, and was eleven feet from road end; the place was eight feet wide and but one post was set, although he knew the roof was not good. A stone seven feet by five feet, one foot thick at the face and feathering out on the other sides, fell on him, crushing his life out.

TABLE NO. 4.—*Continued.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Widow.	No. of orphans.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
July 26.	Meek Suttilla.	Miner.	18	S.	. .	Webster No. 4.	Clearfield.	Killed instantly by fall of coal seam two and one-half feet thick undermined three feet; piece of coal face sixteen feet long, loose at one end, the other end being rib side. A coal sprag was left at loose end and in middle, but the middle coal sprag had been taken out, and the unfortunate man and his partner were under the coal, intending to mine deeper, when it fell. His partner escaped with slight injury.
Aug. 15.	Steve Pillow.	do.	21	S.	. .	Staffordshire.	do.	Killed, neck being broken by fall of rock in roadway at working face; a large stone being cut by slips on all sides, fell on him.
18.	Wm. Barker.	do.	. .	. .	. .	Queen No. 1.	do.	Killed instantly by fall of coal while in the act of taking out coal sprag, the only support of the coal. The seam here was two feet nine inches thick, mined under about two and one-half feet, the piece being seven feet long was loose on all sides except one, and a hole had been bored on that side and charged ready for blasting. In mining out the coal and sprag he did it so that the most difficult part to reach was to be taken out last, thus placing himself in such a position that he could not quickly move away if any warning might have been given.
26.	John Rankin.	do	52	M.	. .	Brown No. 2.	Bedford.	Killed by fall of rock in his working face. He had fired a shot in the coal, and was in the act of examining the place, when the rock fell; the roof in this mine is generally bad, and this place was no exception. The rock in falling discharged some posts that were set to support it, which gave the appearance of insufficient propping, but on close examination it was found that the place was fairly well propped.

Oct. 28.	Joseph Warquarettaz.	do.	24	S.	Robertsdale.	Huntingdon. . . .	Killed instantly, his neck being broken and skull fractured, by fall of top coal, where the seam was in two members. A shot had missed fire in this piece, and another was prepared, and while in the act of placing the squib in the hole from which the needle had been taken, the coal (which was somewhat above his head) fell upon him with fatal result.
Nov. 5.	Mike Mishner.	do.	..	..	Atlantic No. 2.	Clearfield.	Killed by a fall of coal about four and one-half feet thick, mined under about five feet, and the piece was ten feet long, and loose at one end. There had been a shot and a coal sprag had been left at that end, but the coal fell while he was in the act of taking it out while lying at length under the coal.
7.	Mat. W. Schatock.	do.	..	..	Pleasant Hill.	do.	Fatally burned, died the sixth day after, by an explosion of powder while in the act of filling the cartridge; having a lighted lamp hanging in his cap, a spark from which falling into the powder exploded it with above results.

TABLE No. 5.—*List of non-fatal accidents which occurred in and about the mines of the Eighth Bituminous Mine District for the year ending December 31, 1892.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident
Jan. 7.	John T. Irwin.	Miner.	30	M.	2	Cumberland.	Bedford.	One bone of left leg broken below the knee and back injured in region of kidneys, by fall of piece of top coal.
11.	James Butterworth.	do.	..	..	..	Lancashire.	Clearfield.	Cut on the head, not seriously, by car jumping the track and he being caught between car and rib.
11.	Benjamin Ellis.	Driver.	24	..	..	Ferndale.	do.	Body bruised badly by being caught between car and rib.
13.	Frank Edwards.	Miner.	36	..	..	Eureka No. 9.	do.	Bruised on leg and side of body by fall of a small piece of coal.
23.	John Petriskey.	do.	40	..	..	Troy.	do.	Leg broken below the knee by fall of stone in clay vein.
Feb. 2.	Mike Simons.	do.	29	..	..	Excelsior No. 4.	do.	Slighily hurt on back by fall of roof of soft fire-clay.
2.	Wasko Bango.	do.	29	..	..	do.	do.	Hurt on shoulders by the same fall of roof as above.
5.	George W. Wright.	Laborer.	30	..	..	Cumberland.	Bedford.	Left thigh broken while thoughtlessly standing between cars at scale-house when cars came together.
6.	Charles Anderson.	Miner.	19	S.	..	Gazzam No. 1.	Clearfield.	Collar bone broken by fall of coal while carelessly lying under without a sprag.
11.	Andy Savton.	do.	32	M.	2	Troy.	do.	Leg broken above knee by fall of coal while in the act of taking out sprag.
16.	Alphonse Bara.	do.	44	M.	..	Robertsdale.	Huntingdon.	Thigh bone fractured.
16.	Emile Bara.	do.	15	S.	..	do.	do.	Slightly cut on face and hands.
16.	Adolph Shurzman.	do.	36	S.	..	do.	do.	Contusion of spine, resulting in paralysis of lower extremities. All were working together and were caught under the same stone, covering an era of 49 square feet and being four inches thick.
27.	Linbloom George.	do.	35	M.	..	Eureka No. 2.	Clearfield.	Leg broken below the knee by fall of a stone from roof.
Mch. 1.	Marcellus Zeigler.	do.	35	S.	..	Sterling No. 1.	do.	Hands, face and body burned by powder. He was preparing a blast of powder when his brother playfully took some of the powder and exploded it a few feet away, resulting in setting the contents of the cartridge and tin can off.
7.	William Hearking.	do.	18	..	..	Eureka No. 2.	do.	Foot hurt by fall of stone from roof.
15.	George Haliver.	do.	48	M.	..	Eureka No. 7.	do.	Two ribs fractured and slight bruises on head by fall of rock from roof.
18.	John Trueman.	do.	50	M.	..	Henderson's.	do.	Seriously injured on back and probably permanently disabled by fall of stone which he was at the time sounding and examining.
Apr. 12.	Richard Snedon.	Driver.	37	..	..	Forest.	do.	Leg hurt by car running on him; while he was himself pulling it his feet having been caught in switch rail.

	16.	Evan Rees,	Driver boy,	13			Atlantic No. 1,	do.	Leg broken by falling from a car while it was in motion; the mule becoming frightened and pulling the car off the track and over the boy's leg.
May	8.	Andro Klimax,	Miner,	26			Kyler,	do.	Cut on wrist with axe while chopping wooden rail.
	9.	Andrew Pearson,	do.	29	S.		Gazzam No. 1,	do.	Face, neck and arms badly burned by explosion of about four pounds of powder. While he was in the act of pouring the powder from can to cartridge having a lamp on his head a spark from it dropped into the powder.
	10.	James Lane,	do.	26	S.		Ocean No. 1,	do.	Leg broken by stone falling on it.
	11.	George James,	do.	20	S.		Atlantic No. 1,	do.	Foot mashed by being caught between car bumpers.
June	1.	William Pryde,	Driver,	22	S.		do.	do.	Heel mashed by being caught between car and rib of heading.
	21.	James Zelinkey,	Miner,	22	S.		Ocean No. 1,	do.	Slightly bruised on head and shoulders by fall of top coal.
July	6.	James Smith,	Roadsman,	22	M.		Troy,	do.	Foot hurt by having a bolt in car bumper run into it, foot having been caught between bumpers of cars.
	11.	George Steblock,	Miner,	35	M.		Webster No. 4,	do.	Collar bone broken by fall of roof.
	26.	William Lukshaftits,	do.	23			Mt. Vernon No. 6,	do.	Left arm broken, face and head cut and bruised and eyes injured; he will probably lose the sight of one, by explosion of dynamite while in the act of tamping it in a hole.
Aug.	1.	Stephen Vonng,	do.	63	M.		Rotherock,	do.	Right leg broken by fall of coal while he was mining without a sprag.
	9.	George Chamberlain,	Driver,	16	S.		Brown,	Bedford,	Leg injured slightly by being caught between cars which jumped the track.
	26.	Joseph Thomas,	Miner,	19	S.		Atlantic No. 1,	Clearfield,	Back injured by fall of top coal.
	27.	James Stevenson,	Driver,	22	S.		Mt. Vernon No 5,	do.	One of his toes crushed by being run over by a car.
	28.	Henry Taylor,	Miner,	16			do.	do.	Slightly bruised by fall of stone from side of road.
	29.	John Sencheck,	do.	18	S.		Cataract,	do.	Slightly burned on hands, arms and face. While filling cartridge from powder can with a lamp in his cap, a spark dropped into and exploded the powder.
	30.	William Griffiths,	do.	21	S.		Colorado,	do.	Head bruised by fall of a piece of coal while he was in the act of taking out the coal sprag.
Sept.	3.	James McClelland,	do.	37	M.		Staffordshire,	do.	Badly cut in fleshy part of hand by fall of coal.
	8.	Ed. Manion,	do.	42	M.		Bloomington No. 3,	do.	Leg broken in three places by fall of coal.
	11.	Andrew Benner,	do.	55	M.		Sterling No. 1,	do.	Slight injury to arm and leg by fall of coal and rock while undermining.
	20.	John O'Conners,	do	32	M.		Atlantic,	do.	Serious injury to spine, by fall of coal, resulting in partial paralysis.
	23.	William Smith,	do.	25	S.		Columbia No. 5,	do.	Back injured by fall of coal and rock.
	24.	Thomas Craine,	do.	30	S.		Eureka No. 7,	do.	Leg broken by fall of top coal.
Oct.	1.	Steve Botchen,	Driver,	14	S.		Rothrock,	do.	Heel badly bruised by being caught between car and bumpers.
	4.	Robert Shaw,	Miner,	41	M.		Atlantic No. 1,	do.	Collar bone broken by fall of top coal.
	20.	Jesse Waring,	Farmer's son,	15	S.		Morrisdale,	do.	Leg broken by falling from moving trip on tram road. Was playing and was not employed at the mines.
	24.	William Miller,	Driver,	21	S.		Cambria No. 1,	Bedford,	Hand mashed by being caught between car and rib.
	24.	Michael Hrlan,	Machine man,	30	S.		Atlantic No. 2,	Clearfield,	Back slightly injured and ankle sprained by fall of stone, which became loose by vibration of coal cutting machine.
Nov.	4.	William Wilkins,	Miner,	36	M.		Sterling No. 1,	do.	Back slightly injured by fall of rock while loading car.
	7.	Matt. W. Schotock,	do.	19	S.		Pleasant Hill,	do.	Severely burned on face, head and body by spark falling from lamp while making cartridge of powder.
	8.	Gurt Larson,	do.	23	S.		Bloomington No 3,	do.	Leg broken by fall of coal which he was mining which was loose at both ends and without a sprag.

TABLE No. 5—*Continued.*

Date of accident.	NAME OF PERSON.	Occupation.	Age.	Married.	No. of children.	Name of Colliery.	Location—County.	Nature and Cause of Accident.
Nov. 19	William Park, ...	Miner, ...	64	M.	. .	Sommerville No. 8, . . .	Clearfield	Three ribs broken and foot slightly bruised by fall of a rock from a slip near face of place.
23.	James Barrett, ...	Driver, ...	. .	S.	. .	O'Shanter No. 3, ...	do.	Third finger of left hand taken off at first joint by being caught in mule traces while starting a load.
Dec. 3.	James Bruce, ...	Driver, . . .	21	S.	.	Kyler, ...	do.	Foot bruised by being caught between bumpers of cars.
10.	Nathan Trail, ...	Miner, . . .	37	M.	. .	Cumberland, ...	Bedford, ...	Badly bruised on shoulder, hip and arm by fall of rock.
24.	Frank Croyl, ...	Blacksmith, .	21	S.	. .	Logan, ...	Clearfield, ...	Fingers on left hand mashed while coupling cars.
28.	Knute Holferson, ...	Miner, . . .	49	M.	. .	Atlantic No. 1, ...	do.	Leg broken by fall of roof coal while drawing pillars.
31.	Gorman Stanely, ...	do. . . .	18	S.	. .	do.	do.	Leg broken by fall of roof while in the act of undermining.