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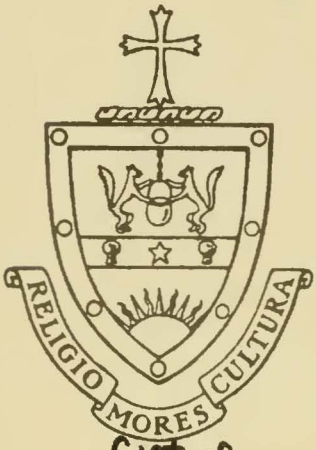

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Senate,

REPORTS

OF THE

INSPECTORS OF MINES

OF THE

ANTHRACITE COAL REGIONS

OF

PENNSYLVANIA,

FOR THE

YEAR 1875.

HARRISBURG:
B. F. MEYERS, STATE PRINTER.
1876.

CONTENTS.

COMMUNICATION.

To His Excellency, JOHN F. HARTRANFT,

Governor of the Commonwealth of Pennsylvania:

SIR:—In compliance with the requirements of an act of General Assembly of the Commonwealth, approved the fifth day of April, 1870, "An Act for the preservation of the records of the inspectors of mines," etc., I have the honor to herewith submit an annual report of all matter of information that came under my official notice, and such other information as had been furnished me by the inspectors of mines during the year, detailing the number of fatal and non-fatal accidents that occurred in their respective districts; and the number of collieries in operation, showing their character and condition, the power used and force of hands employed in each. I find by comparison that the fatalities are somewhat less than last year, yet the roll is not as favorable as was anticipated. Since resumption in June fatal accidents were numerous.

In Pottsville district 59 collieries were in operation and produced 3,853,629 tons of coal; 28 fatal and 88 non-fatal accidents occurred, leaving 17 widows and 62 orphans. In Shenandoah district 54 collieries were in operation, producing 3,000,179 tons of coal; 26 fatal and 114 non-fatal accidents occurred, leaving 11 widows and 49 orphans. In Shamokin district 60 collieries were in operation, producing 3,388,726 tons; 38 fatal and 106 non-fatal accidents occurred, leaving 13 widows and 30 orphans. Making an aggregate of 92 deaths, 308 cases of maimed persons, leaving 41 widows and 141 orphans. The character of these casualties will be found detailed in tabulated form hereto subjoined.

Investigation into these fatalities will justify the assertion that fully one-half of them are the result of carelessness, improper attention and undue disregard of safety, occasioned, to a large extent, by the long suspension, the non-repair of the mines, and the hurry consequent upon resumption.

From a review of the coal tonnage produced in the last six months of the year, which equaled the entire shipment of 1874, from this we must conclude the work of production and preparation of coal was pushed forward with undiminished energy, and although prices ruled steady, wages declined much below the rates of former years. The collieries are again idle since the first of December most generally, and resumption is a question of time.

EMPLOYMENT IN MINES.

The employees in coal mines are handled so as their labor shall realize the largest amount of profit to the employer, and this at the risk of life and limb, consequent upon the diversity of their labor, besides the danger to be encountered in working in deep mines that are so often idle that, from standing gas, decay of timber, the absence of proper ventilation, and standing water, not only makes the mine unsafe but virtually dangerous. It is practically demonstrated that mines and machinery that are kept constantly in operation are much safer than those that are only kept *temporary* in use.

In mines that generate large quantities of gas, and have a large force employed, say 400 persons, it can not be expected this force to be so well organized as to strictly conform with the rules of the colliery, because their occupations and interests are so different that, to gain a temporary advantage, their fellow workmen's lives, as well as their own, might be sacrificed by the merest mishap. No amount of practice can warrant a miner security at all times.

Experience stimulates him to acts of daring, and would think it folly in him to become intimidated by the appearances of things around him, not timely realizing the consequences that would result in death. There is no amount of human knowledge, however practical, that can detect the different dangers hidden from view, and not until the stroke of death is delivered and received can the victim of an accident of this sort realize his misfortune, though he be ever so much burthened with care and responsibility.

He having no other choice of employment than working in the mine for his support, surrounded on all sides by threatening dangers, however much he may be at fault on some occasions, yet his condition should meet with public sympathy. His occupation as a miner at best is but a temporary uncertainty, and in some cases but little better than semi-slavery, because by his occupation, from habit he becomes inured to a life dependent on his employer, and gradually submits to the drudgery of the mine, having no higher ambition for any other field of usefulness; and succeeded in the same calling by his children. But were it not for the social impressions he receives from his association with his fellow workmen his life would be extremely burthensome.

Nevertheless, miners in general are full of rare courage and kindheartedness, cultivated by their mutual intercourse with each other, as shown in times of dreadful accidents occurring in the mines, to see with what alacrity and resolution they enter in and approach those horrible dangers to relieve their fellow workman, where the outside world would be appaled with terror at the sight of those dangers. Then to see with what sublime courage they will risk their own lives and all interests most dear to them in aiding and relieving those of them that may be in distress. While the greater the danger may be the higher the order of courage they display, even to abandonment of self-safety. No pen can describe nor properly explain, to those who are not accustomed to mine horrors, no more than a faint portraiture of the intensity of the agony and sufferings of the miner who falls a victim to explosions of gases, and crushes of coal and rocks, not noticing the unfortunates who fall through rollers and shafts, etc., and the misery which these numerous casualties entails upon already very indigent families is beyond my desire to describe; as my observations are founded upon facts I am impelled by a sense of justice to bring this subject to your notice in connection with this report, hoping that all proper and honorable efforts will be made that may be conducive for the security of the lives of this class of citizens.

The Philadelphia and Reading coal and iron company have instituted a very creditable measure of relief for the families of miners who meet with fatal accidents while in their employ, by defraying expenses of sepulture, and paying to the widow three dollars per week, and to each child under twelve years of age one dollar per week; this donation is sufficient to maintain the families without they being in fear of becoming a burthen to society, or inmates of a charitable institution. If other operators will be moved by this good example toward their employees, what a large amount of suffering and destitution would be prevented amongst those people. The public gratitude is certainly due this company for their timely aid in relieving the distress that generally follows such unfortunate casualties.

Monthly Statement of Casualties.

The following statement will exhibit the number of fatal and non-fatal accidents that took place during the year 1875, in the district of Schuylkill:

Months.	Killed.	Maimed.	Widows.	Orphans.	Total.
January	5	5	5	17	32
February	.....	2	.....	.....	2
March	3	8	1	3	15
April	3	8	1	2	14
May	3	10	2	5	20
June	7	22	4	5	38
July	6	44	3	4	57
August	14	46	5	21	86
September	14	52	8	44	118
October	12	53	2	7	74
November	18	48	9	31	106
December	7	10	1	2	20
Aggregate	92	308	41	141	582

To the above statement nine slight injuries are added to the November list of injuries, which by reference to our files is correct. The fact of the increase in the accidents in the latter months of the year as being occasioned by undue negligence, inexperience and rashness is very evident. The straightened circumstances of the men of families precipitated the results.

FATAL ACCIDENTS IN MINES.

Names of persons who were killed and of those who died subsequently of injuries in and about the collieries of the mining district of Schuylkill during the year ending December 31, A. D. 1875.

DATE.	Names of deceased persons.	Names of collieries.	Wife.	Children	Remarks.
Jan. 1,	Daniel Segar	Colket	1	5	Died of injuries; leg broken November 16.
22,	George Hassell	St. Nicholas	1	4	Killed by an explosion of a boiler.
22,	Timothy Heaton	....do	1	3	Killed by an explosion of a boiler.
23,	John Brill	....do	1	4	Killed by an explosion of a boiler.
27,	Andrew Weary	Big Mountain	1	1	Killed by a fall of coal.
March 4,	Albert Batdorf	Williamstown	1	3	Killed by a fall of rocks.
16,	William Bentz	Brookside	....	....	Died from injuries received in mines.
19,	Joseph Gurley	Cameron	....	....	Killed by a fall of rocks.
April 12,	James O'Brien	Dark Corner	....	....	Died at his work of heart disease.
18,	Joseph Oerther	Black Valley	1	2	Killed by the swing of a drum.
29,	Thomas Price, boy	Burnside	....	....	Killed by the elevator.
May 6,	Peter Brecker	Monitor, No. 2	1	....	Killed by a fall of coal.
27,	Thomas Edwards	Short Mountain	1	5	Killed by a fall of coal.
30,	John Conroy	Burnside	....	....	Killed by the wagons.
June 8,	John Soudoski	Grant	....	....	Killed by a fall of coal.
9,	John Murphy	Luke Fidler	1	1	Killed by a fall of coal.
15,	Chas. Lunkhurst	Burnside	1	3	Killed by a fall of coal.
22,	Edward Leonard	Buck Ridge	....	....	Killed by a fall of coal.
23,	Edward Troy	Mays	1	....	Killed by a fall of coal.
23,	Mathew Kavanagh	Lincoln	....	....	Killed by a fall of top rock.
29,	John Berkley	Stewartsville	1	1	Killed by a fall of coal.
July 8,	John Kenny	Hickory Shaft	....	....	Killed by the cage.
14,	Patrick Maloney	Enterprise	....	....	Killed; run over by the wagons.
15,	John Thomas	Bear Valley	1	....	Died; burned by powder.
20,	Patrick O'Brien	Buck Ridge	....	....	Killed; crushed by the dumper.
23,	Darby M'Mannon	Oakdale	1	....	Killed by falling into a heading.
28,	Daniel Hinkle	Koh-i-noor	1	4	Killed by a rush of coal.
Aug. 3,	Peter Smith	New Boston	1	5	Killed by the slope cage.
6,	Daniel Cornelius	Wm. Penn	1	4	Died of disease and over-work.
6,	John Dougherty	Lost Creek	....	....	Died; fatally injured by a fall of coal.
9,	Charles Momberger	West Shenandoah	1	6	Killed; fell off the breaker building.
14,	Charles Fessler, boy	Alaska	....	....	Killed by the elevator.
14,	John Carey, boy	Cuyler	....	....	Killed by the rollers and screens.

	15,	John Johns, boy	Shenandoah	....	....	Killed in the cog-wheels.
	18,	John Hannon	Tunnel	....	....	Killed by a rush of coal.
	18,	Mathia Curlinski	Buck Ridge	....	....	Killed; crushed by wagons.
	18,	Thomas Tobin	Richardson	....	....	Killed; fell into an old breast.
	22,	Mark Jones	Hickory Shaft	....	....	Died of injuries received from a blast.
	24,	John M'Nammon	Summit Branch	1	2	Killed by a fall of coal.
	24,	Peter Hoff	Luke Fidler	1	4	Killed by a fall of rocks.
	31,	Charley Kerby	Girard	....	....	Killed by a fall of rocks.
Sept.	1,	William Wingle	Cameron	....	....	Killed by the breaking of slope chain.
	1,	Lewis Cox	....do	....	....	Killed by same accident.
	6,	Frank Hetton	Mahanoy City	1	5	Killed by a fall of slate.
	8,	John Drew, boy	Shenandoah City	....	....	Killed by the slope rope.
	9,	Joseph Boden	Kear's	....	....	Died in the mine of hemorrhage.
	15,	Joseph Boggy	Thomaston	....	....	Killed by a runaway slope wagon.
	17,	John Clarey	Union, No. 2	....	....	Killed by a fall of coal.
	29,	Wm. Leaver	Delaware Shaft	1	6	Killed by a fall of rocks.
	29,	Rowland Jones	Tunnel Ridge	1	5	Killed by a fall of coal.
	29,	John Killey	Mount Laffee	1	5	Killed in his own small mine.
	30,	James Adams	Anchor	1	4	Killed. All were fatally burned by an explosion of fire-damp.
	30,	Arthur Hunt	....do	1	6	
	30,	Isaac Wilkins	....do	1	4	
	30,	Patrick Walsh	Hickory Shaft	1	7	Died; fatally burned by fire-damp.
Oct.	5,	John Bradly, boy	Koh-i-noor	....	....	Killed by the wagons.
	8,	Thomas Kavanagh	Forestville	....	....	Killed by a fall of coal.
	12,	William Jackson	Keystone	....	....	Killed; suffocated by gas.
	12,	Caleb Knabb	Brookside	....	....	Killed by a fall of coal.
	18,	George Kurlent	Buck Ridge	1	2	Killed by wagons.
	18,	Patrick Kelley	Locustdale	....	....	Killed in the breaker machinery.
	18,	John Purcell	Hickory Ridge	....	....	Killed by a fall of slate.
	18,	Alexander Genaski	Enterprise	....	....	Killed by a fall of coal.
	15,	James Leevesly	Buckville	....	....	Killed by a rush of coal in shute.
	15,	Robert Evans	Bear Run	....	....	Killed by a fall of coal.
	16,	Henry Welker	Burnside	....	....	Killed on the plane by a wagon.
	19,	John Dean	Plank Ridge	1	5	Killed by a fall of top rocks.
Nov.	1,	Thos. Henehell	Yeatsville	....	....	Killed by a fall of coal.
	2,	Edward Bevin	New Boston	1	1	Killed by a fall of coal.
	6,	Jacob Phœbie	Henry Clay	....	....	Died of injuries from a blast.
	8,	John Powell	Kear	1	6	Killed by a fall of top slate.
	17,	Thos. Magovern	Palmer Vein	1	6	Died; fatally burned by powder.
	18,	John Durkin	Locustdale	....	....	Died. These men were seated upon a powder chest, at dinner, when a spark exploded the powder, hence result.
	18,	Alfred J. Steeley	....do	....	....	
	18,	Mordecia Jones	....do	....	....	
	18,	Robert Payne	....do	....	....	

FATAL ACCIDENTS IN MINES—*Continued.*

DATE.	Names of deceased persons.	Names of collieries.	Wife....	Children	Remarks.
Nov. 20,	Christian Kopp	East Franklin	1	5	Killed in a breast with coal.
27,	Wm. T. Morris	Beechwood	1	2	Killed by a fall of coal.
27,	Anson Smith	Shenandoah	....	....	Killed in the small rollers.
27,	Anthony Derrish	Mahanoy City	1	4	Killed in the large rollers.
28,	Edward Corcoran	Eagle	....	....	Died of injuries from a fall of slate.
28,	A. Hunsiker	Hazledell	....	....	Killed by a blast.
30,	Hugh Sharp	Buckville	1	1	The chain broke and the men standing at foot of slope were killed by splinters.
30,	Patrick M'Intyre	.....do	1	4	
30,	Hugh Mathews	.....do	1	2	
Dec. 1,	Thomas Kline	Greenwood	1	1	Killed by a fall of a trestling.
4,	Anthony Lee, boy	Big Mine Run	....	....	Killed by falling into the rollers.
5,	Nicholas Bergen	Ellengowen	....	....	Died; fatally burned by fire-damp.
11,	Margaret Fogle	Thomas	....	....	Died; fatally injured by falling into a breast.
12,	Edward Kear	Hickory Shaft	....	....	Died; fatally burned by fire-damp.
13,	Hugh Calloran	.....do	....	....	Died; fatally burned by fire-damp.
20,	William Watkins, boy	West Lehigh	....	....	Killed in the screens.

Making a total of 92 fatal accidents during the year against 104 casualties last year, or 12 cases less in 1875.

NON-FATAL ACCIDENTS IN MINES.

Names of persons who were maimed and injured in and about the collieries of the mining district of Schuylkill during the year ending December 31, *A. D.* 1875.

DATE.	Names of maimed persons.	Names of the collieries.	Remarks.
Jan. 1,	Edward Thompson	Stanton	Severely burned by fire-damp.
2,	Henry Fry	Bear Valley	Severely injured by a fall of coal.
21,	John Becker	Cameron	Severely crushed by wagons.
22,	John Brill	St. Nicholas	Leg cut off by an explosion of a steam-boiler.
27,	Jefferson Berger	Big Mountain	Leg and arm broken by a fall of coal.
Feb. 8,	John Berry	Williamstown	Foot crushed by wagons.
23,	David Davis	do	Leg broken by a fall of rocks.
Mar. 8,	Albert Batdorf	do	Severely crushed by a fall of coal.
19,	James Narey	Cameron	Severely crushed by a fall of rocks while in the act of taking dinner with five others, all of which were severely injured by the said accident.
19,	George Elly	do	
19,	William Eddie	do	
19,	William Baggy	do	
19,	Reuben Trautman	do	
19,	David Rhoades	do	
23,	Peter Brosius	Big Mine Run	Severely injured by falling off a scaffold.
April 3,	David Williams	York Farm	Severely burned by an explosion of gas.
3,	Adam Bortzel	do	Severely burned by the said explosion.
8,	James Lewis	Glen Carbon	Head fractured by a casting.
22,	Elias Firl	Buck Ridge	Foot crushed by a fall of coal.
23,	James Swift	Franklin	Knee fractured by a fall of slate.
23,	James King	Cameron	Foot injured, a drill was driven through it.
27,	William Cooper	New Kirk	Hand crushed and fingers cut off.
28,	John Silvester	Franklin	Knee fractured by a fall of slate.
May 3,	John Scott	Summit Branch	Arm broken by a fall of coal.
10,	Joseph Fisher	New Philadelphia	Severely injured by a blast.
12,	William Long	Burnside	Foot crushed, run over by a wagon.
26,	Michael Farrell	Hickory.	
27,	A Pole	Luke Fidler	Crushed by a fall of coal.
27,	Patrick Costelo	do	Badly burned by a cartridge.
27,	George Kries	West End	Foot crushed by a fall of coal.
27,	John Ellard	Cameron	Leg broken by a fall of coal.
27,	A miner	do	Leg broken by a fall of coal.
27,	Samuel Houghton	Buck Ridge	Badly burned by fire-damp.
June 7,	John Brown	Bear Valley	Badly burned by fire-damp.

NON-FATAL ACCIDENTS IN MINES—*Continued.*

DATE.	Names of maimed persons.	Names of the collieries.	Remarks.
June 11,	Andrew Geary		Fingers cut off by a fall of slate.
16,	John Wire	Delaware shafts	Head severely cut by an axe.
16,	A miner	Lentz & Bowman	Leg broken by a fall of coal.
19,	Alexius Ignatvich	Luke Fidler	Severely crushed by a fall of coal.
21,	Peter Monaghan	Shenandoah City	Severely burned by fire-damp.
21,	Frederick Daniscovich	Thomas	Severely injured by wagon of coal.
21,	Michael Senkafski	... do	Severely injured, he fell through a shute.
21,	Jacob Marshall	Luke Fidler	Hand crushed by a fall of coal.
21,	John Cawley	Franklin	Severely crushed by wagons.
21,	Joseph Murry	Beechwood	Severely injured by a blast.
22,	Joseph Cole	Bowman's	Leg broken by a fall of coal.
22,	John Evans	Pyne	Leg broken by a fall of rocks.
22,	Abm. Strausser	George Fales	Severely crushed by a fall of coal.
22,	John Crisman	Buck Ridge	Severely crushed by a fall of coal.
22,	John Thomas	Thomaston	Severely crushed by slope wagons.
22,	John Reece	Beechwood	Severely crushed by a fall of coal.
22,	Michael Bonavits	Ranch Creek	Shoulder broken by a fall of coal.
22,	John Lawson	Coal Mountain	Severely injured by a fall of coal.
25,	Thomas Doolin	Thomaston	Back broken by loaded wagons.
28,	Conrad Seilback	Plank Ridge	Severely injured by a blast.
28,	A boy	Coal Mountain	Foot crushed by wagons.
July 2,	Thomas Hughes	Hickory shaft	Horribly burned by fire-damp.
2,	James Davis	....do	Horribly burned by fire-damp.
2,	Frank M'Cormack	Luke Fidler	Horribly crushed by a fall of coal.
2,	Henry Conners	Marian	Leg broken by a fall of coal.
3,	William Jones	Tunnel	Arm broken; he fell into a shute.
6,	Patrick Naughton	Big Mine Run	Severely crushed by wagons.
6,	William Stamford	Glen Carbon	Severely crushed by a fall of coal.
6,	James Bergen	Oakdale shaft	Severely crushed by wagons.
10,	John Williams	Bear Run	Slightly burned by fire-damp.
10,	Daniel Lardan	Oak Hollow	Severely injured in the mines.
10,	John Simmons	Cameron	Severely injured by a fall of coal.
13,	John Martin	....do	Severely injured by a fall of coal.
15,	John Johns	West Shenandoah	Severely injured by a fall of coal.
16,	Patrick Haughney	Focht & Whittaker	Severely injured by a fall of coal.
16,	John Thomas	Indian Ridge	Arm and ankle injured by a fall of coal.
16,	Michael Cassady	.....do	Fingers cut off by a fall of rocks.

	17,	Michael Sullivan	Plank Ridge	Shockingly injured by a blast.
	17,	James M'Laughlin	Honey Brook	Fatally injured by a fall of coal.
	17,	John Ellard	Cameron	Severely injured by a fall of coal.
	17,	Benjamin Kantner	West Shenandoah	Arm broken by a fall of rocks.
	19,	Jerry Daily	Colket	Severely injured by a fall of slate.
	19,	John Treffsgar	E. Franklin	Severely cut with an axe.
	20,	William Wire	Colket	Ankle crushed by a dumper.
	20,	Lewis Weihl	Anchor	Horribly injured in getting off a wagon.
	20,	John Eckles	Glen Carbon	Severely burned by fire-damp.
	20,	Wm. Temple	Shenandoah	Arm and fingers broken.
	20,	A miner	Suffolk	Leg broken by a fall of coal.
	24,	John Dolan (boy)	Oakdale	Foot crushed by wagons.
	24,	William Thomas	Cameron	Severely injured by a blast.
	24,	Thomas Hewett	....do	Severely injured by a blast.
	24,	Edward Brittain	....do	Severely injured by a blast.
	24,	Nicholas Hantz	West End	Severely burned by fire-damp.
	24,	Henry Geiss	Beaver Run	Terribly injured by a fall of coal.
	24,	Charley Mander	Colket	Hand smashed by a fall of coal.
	25,	John Maguire	Boston Run	Severely burned by fire-damp.
	25,	Edward Magilligan	.....do	Severely burned by fire-damp.
	25,	David Pott	Middle Creek	Severely injured; he fell 100 feet in the shaft.
	26,	William Lyon	Glendon	Severely burned by fire-damp.
	26,	George Lyon	....do	Severely burned by fire-damp.
	28,	Michael Monaghan	Hickory shaft	Severely hurt by a discharge of a shot.
	28,	John Daugherty	Lost Creek	Mortally injured by a fall of coal: died August 20.
	28,	A miner	Raven Run	Severely cut by a fall of coal.
	29,	Michael Sullivan	Plank Ridge	Nearly suffocated by gas.
	29,	Patrick M'Quade		Leg broken off by a fall of coal.
	29,	Enoch Walters	New Boston	Severely injured by a blast.
Aug.	2,	Edward Combs	Shenandoah	Leg broken by a fall of coal.
	3,	Edward Valentine	Thomas	Foot crushed by wagons.
	3,	William Lukenbill	Tunnel Ridge	Severely injured by a dumper.
	4,	Thomas Kavanagh	Plank Ridge	Thigh broken by a fall of coal.
	7,	John Ellard	Cameron	Severely crushed by fall of a coal pillar.
	7,	Martin Kavanagh	....do	Severely crushed by a fall of coal pillar.
	10,	Robert Camp	Reliance	Severely crushed by a fall of coal.
	10,	Richard Phillips	Big Mountain	Severely crushed by a fall of rocks.
	11,	Henry Neadhammer	West End	Severely crushed by wagons.
	11,	Thomas Brannan	Big Mountain	Back injured by a fall of clay.
	11,	Morris Downey	Hickory Ridge	Back injured; he fell 60 feet into a shaft.
	12,	Edward Gellings	St. Nicholas	Hand cut off by a fall of coal.
	12,	Robert Gone	Shenandoah City	Hand crushed by sprags.
	12,	Frank Pershing	Henry Clay	Arm broken by a fall of coal.

NON-FATAL ACCIDENTS IN MINES—*Continued.*

DATE.	Names of maimed persons.	Names of the collieries.	Remarks.
Aug. 12,	Jos. Broomal	Big Mountain	Leg broken by a fall of coal.
12,	Robert Hughes	Greenback	Foot severely crushed by wagons.
12,	Edward Reese, Jr.	Short Mountain	Both father and son nearly drowned by the caving in of a large body of water.
12,	Edward Reese, Sr.	....do	
16,	A Polander	Excelsior	Severely crushed by a fall of coal.
20,	Aaron Waddel	Jackson Drift	Severely crushed by a fall of coal.
20,	A miner	Shenandoah City	Ribs broken by a fall of coal.
21,	Peter Collier	Excelsior	Severely injured by a fall of coal.
23,	A boy	Thomas	Fingers crushed off by wagons.
23,	William Durkin	Eagle	Severely injured by a fall of coal.
23,	Isaac Christ	Girard	Head injured by a falling plank.
23,	Patrick Malley	Plank Ridge	Severely crushed by wagons.
24,	Charley Gross	Koh-i-noor	Head injured by a fall of top.
25,	Charley Dunleavy	Shenandoah City	Shoulder crushed by a fall of coal.
25,	Thomas Boyler	Bear Ridge	Legs broken by a fall of coal.
25,	John Cunningham	....do	Eyes injured by a piece of coal.
25,	Michael Curley	Shenandoah City	Nearly suffocated by a fall of coal.
25,	Michael Keife	Mt. Pillar	Severely injured by a fall of coal.
25,	Edward Conlon	Turkey Run	Severely injured by a fall of coal.
27,	Thos. B. Reese	Thomas	Head severely injured by a fall of coal.
31,	Thomas Cahill	Luke Fidler	Legs crushed by a fall of coal.
31,	Lewis Walters	Excelsior	Hand severely injured by a fall of coal.
31,	Patrick La Velle	Girardsville	Severely crushed by a fall of coal.
31,	James Crawley	Eagle	Severely crushed by wagons.
31,	Murty Gorman	...do	Severely crushed by a fall of coal.
31,	James Blacker	Hickory Shaft	Severely crushed by a fall of coal.
31,	Samuel Steinhilbert	Big Mine Run	Severely crushed between wagons and pillar.
31,	Alexander Campbell	Big Mountain	Hips and eyes injured by a fall of coal.
31,	Wm. W. Lerors	Girardsville	Hand severely cut by a fall of coal.
31,	Philip Evans	Girard	Back crushed by a fall of coal.
31,	Joseph Athey	Colket	Severely injured by a 26 feet collar falling on him.
31,	James Jones, Jr.	....do	Eye destroyed by a piece of coal.
Sept. 1,	Jonas Romberger	Cameron	Leg broken by the breaking of a chain.
1,	Henry Zerby	....do	Severely injured by the above accident.
2,	Michael Torpey	Hickory Shaft	Severely burned by fire-damp.
2,	William Lambert	Gilberton	Body pierced by an oil can spout.
2,	Henry Scuyler	Bear Ridge	Badly injured in the mine.
4,	John Osman	Otto	Severely burned by fire-damp.

4,	Henry Osman, Jr.	Otto	Severely burned by fire-damp.
6,	Edward Burns	Burnside	Leg broken by a fall of coal.
6,	Joseph Howe	Franklin	Head and foot crushed by a fall of coal.
8,	Joseph Falconbridge	Burnside	Head and feet crushed by a fall of coal.
8,	Frank Barlow	Locust Gap	Nearly killed by a fall of coal.
9,	Edward Williams	Suffolk	Arm crushed by wagons.
9,	John Burns	Buck Ridge	Leg amputated; cut off by wagons.
9,	Frank Lewis, boy	Wm. Penn	Fell off a mule into the sump.
9,	George Quinn	Plank Ridge	Hand crushed by a fall of coal.
10,	Thomas Dooley	Turkey Run	Severely crushed by a log.
11,	Hugh Colton	Big Mountain	Severely crushed by a fall of coal.
11,	Frank Heaton	Mahanoy City	Fatally crushed by slate; died next day.
14,	James Harris	Lawrence	Severely burned by fire-damp.
14,	Reese Reese	Tunnel Ridge	Hand crushed while coupling wagons.
15,	James Boggy	Thomaston	Fatally injured by a runaway wagon—died.
15,	Peter Koibel	Franklin	Severely crushed by wagons.
15,	James Boole	Big Mountain	Hand burned by the explosion of a keg of powder.
18,	Thomas Magee	Thomaston	Arm cut off in the cog wheels.
18,	Benjamin Tibby	Wm. Penn	Leg crushed by a fall of coal.
18,	Michael Garvey	Koh-i-noor	Nearly crushed to death by a fall of coal; took 10 hours to get extricated.
18,	An assistant	do	
18,	John Leary	Suffolk	Horribly bruised and burned by fire-damp.
19,	Patrick Walsh	Hickory Shaft	Fatally burned by fire-damp—died.
19,	Thomas Walsh	do	Terribly burned at the same time.
19,	Martin Glenn	do	Severely burned by same explosion.
22,	Wm. Brannan	Enterprise	Head cut by a fall of coal.
22,	Thomas Anderson	Big Mountain	Terribly injured by a fall of rocks.
22,	Elias Koons	do	Foot crushed by prop timbers.
23,	John Lemary	Luke Fidler	Internally injured by a fall of rocks.
23,	Charles Newman	Cameron	Head crushed by a fall of rocks.
23,	William Leahy	Anchor	Slightly burned by fire-damp.
23,	John Kendrick, boy	do	Slightly burned by fire-damp.
24,	Joseph Dilman	West Shenandoah	Severely crushed by a fall of coal.
24,	Jacob Shraeder	do	Severely crushed by a fall of coal.
24,	Wash. Brocius	do	Severely crushed by a fall of coal.
28,	Michael Monaghan	Hickory Shaft	Severely burned by fire-damp.
30,	Peter Franks	Anchor	Severely burned by fire-damp.
30,	Michael Butler	do	Severely burned by fire-damp.
30,	Moses James, boy	do	Severely burned by fire-damp.
30,	Joseph Murphy	Bear Ridge	Crushed by a rush of coal; in relieving him the others were covered up with a large mass of loose coal and in turn had to be relieved by others.
30,	David Evans	do	
30,	Ebenezer Evans	do	
30,	Two miners	do	

NON-FATAL ACCIDENTS IN MINES—*Continued.*

DATE.	Names of maimed persons.	Names of the Collieries.	Remarks.
Sept. 30,	Henry Miller	Colket	Almost smothered by a fall of coal.
30,	Charles Kerby	Girard	Fatally injured by a fall of rocks—died.
Oct. 4,	John Kelly	St. Nicholas	Severely burned by an explosion of powder.
5,	Michael Scally	Otto	Thigh broken by a fall of coal.
5,	John Harrold	Knickerbocker	Shoulder crushed by a fall of coal.
5,	Daniel Murry	....do	Leg broken by a fall of coal.
5,	Frank Thomas	Primrose	Leg broken by a fall of coal.
5,	Michael Coyne	Middle Creek	Slightly burned by fire-damp.
6,	Thomas Cain	Plank Ridge	Thigh broken by a fall coal.
7,	William Thomas	Mahanoy City	Leg broken by a fall of coal.
7,	William Manger	New Boston	Toes cut off, run over by wagons.
9,	Nathan Beecher	Continental	Severely hurt, he fell down the slope.
9,	John Egan	New Boston	Leg fractured by a fall of coal.
11,	Patrick Donohoe	Cameron	Leg broken, run over by wagons.
11,	Hugh Cotton	Big Mountain	Legs, feet and shoulder crushed by a fall of coal.
12,	William Buck	Hickory Swamp	Leg amputated, injured by a fall of coal.
12,	William Southers	Focht & Whittaker	Spine injured by a fall of coal.
12,	William Jackson	Keystone	Fatally injured by carbonic acid gas—died.
12,	Nathan Wagner	L. Rauch Creek	Severely injured by a fall of slate.
12,	Patrick Burk	Pine Forest	Leg broken, and burned by fire-damp.
12,	John Mason	....do	Severely burned by the same explosion.
12,	Lawrence Whenm	Kear	Leg cut by a blast exploded in the coal.
12,	John Hock	Buck Ridge	Fatally injured by a fall of coal—died.
15,	John Regan	Big Mine Run	Ankle broken by a fall of coal.
16,	Henry Walker	Burnside	Fatally injured by coal—subsequently died.
18,	James Grant	Richardson	Hip broken by a fall of coal.
18,	John Morgan	Beechwood	Severely injured by a fall of coal.
18,	James Devlin	....do	Severely burned by an explosion of fire-damp.
21,	Ebenezar Davis	Tunnel Ridge	Ribs broken by a fall of coal.
22,	Michael Loftus	Plank Ridge	Eye destroyed by a piece of coal.
22,	John Yuram	Henry Clay	Leg broken by a fall of coal.
22,	Charley Quinn	Otto	Severely injured by a blast.
23,	Michael Durkin	Koh-i-noor	Arm broken by a blast.
23,	Nicholas Finnegan	Franklin	Severely burned by fire-damp.
23,	Mathew Makin	....do	Severely burned by fire-damp.
23,	John Pritchard (boy)	....do	Severely burned by fire-damp.
23,	Two miners	....do	Severely burned by fire-damp.

Oct.	23,	John Moran	Pyne	Severely injured by a drill.
	23,	Anthony Stack	Focht & Whittaker	Foot severely injured by a spike run in it.
	24,	Samuel Ramsdale	Beaver Run	Shoulder broken by a fall of coal.
	24,	James C. Thompson	Kalmia	Leg broken by a fall of coal.
	24,	Andrew Hanick	Tunnel Ridge	Leg broken, run over by wagons.
	24,	John Webbert	Cameron	Arm broken, run over by a wagon.
	25,	William Morris	Beechwood	Severely crushed by a fall of coal.
	27,	Henry Fibeg	Henry Clay	Terribly injured by a blast.
	27,	John Boyle	....do	Terribly injured by a blast.
	27,	A Polander	....do	Terribly injured by a blast.
Nov.	5,	James Shields	Focht & Whittaker	Slightly injured by the screens.
	8,	Anson Smith	Shenandoah	Fatally injured by a fall of coal—died.
	12,	Nicholas Schwank	Buck Ridge	Head badly cut by a fall of coal.
	12,	James Brown	....do	Leg amputated by the above accident.
	13,	Charles Murry	Eagle Hill	Body crushed by the discharge of a blast.
	13,	John Cohoon	Elmwood	Leg broken, run over by wagons.
	16,	John Morgan	Palmer Vein	Fatally burned by powder—died.
	16,	Peter Norris	....do	Severely burned by a keg of powder exploding from a spark.
	16,	A boy	....do	
	16,	Frank Pepper	Locust Dale	Hip broken, crushed by wagons.
	17,	Alfred J. Stuly	....do	All four died of injuries, seated on a powder chest taking dinner, when a sudden explosion took place from a spark falling from a lamp.
	17,	John Durkin	....do	
	17,	Mordecia Jones	....do	
	17,	Robert Payne	....do	
	17,	Joseph Kirby	Fisk	Leg broken by the breaking of the slope chain.
	17,	A miner	Monitor	Leg broken by a fall of coal.
	17,	His assistant	....do	Head fractured by the same accident.
	19,	Robert Evans	L. Rauch Creek	Head and body crushed by a fall of coal.
	19,	Jonas Leffler	....do	Slightly crushed by the same fall.
	19,	A miner	Lost Creek	Slightly injured by a fall of coal.
	19,	His assistant	....do	Slightly injured by a fall of coal.
	27,	Michael Norton	Beechwood	Severely burned by fire-damp.
	27,	Owen Dixon	Colorado	Severely burned by an explosion of powder.
	27,	Michael Garvey	Koh-i-noor	Severely bruised by a rush of coal.
	27,	His assistant	....do	Severely bruised by a rush of coal.
	27,	Michael Leary	Suffolk	Severely burned by fire-damp.
	27,	William Reese	Centennial	Severely cut by a chisel.
	27,	A miner	Mahanoy City	Legs broken by a fall of coal.
	28,	Mathew Kelly	Preston, No. 3	Severely injured by a blast.
	29,	Michael Barns	....do	Severely injured by a blast.
	29,	John Klees	....do	Severely crushed by a log rolling over him.
	30,	Hugh Mathews	Buckville	Fatally injured. A link of spreader chain broke and precipitated wagon down slope where a number of men stood.
	30,	Patrick O. Donnell	....do	

NON-FATAL ACCIDENTS IN MINES—*Continued.*

DATE.	Names of maimed persons.	Names of the collieries.	Remarks.
Nov. 30,	James Mullen	Buckville	Severely injured. A link of spreader chain broke and precipitated wagon down slope where a number of men stood.
30,	Patrick Duffy	....do	
Dec. 1,	Nicholas Borgowin	Suffolk	Severely burned by an explosion of fire-damp; ignited by a naked light in the hands of one of the men where its use had been prohibited.
1,	Jacob Grimm	....do	
1,	Walter Gibbs	....do	
1,	A miner	....do	
28,	John Commons	Hickory shaft	Slightly crushed by a rush of loose coal.

Additional names returned of injured persons.

Sept. 22,	Luke Heenan	Plank Ridge	Slightly injured by a fall of coal.
Oct. 5,	Richard Farrell	Knickerbocker	Head injured by a piece of coal.
6,	Michael Marrah	St. Nicholas	Leg injured; crushed by a truck.
9,	Edward Lavell	Stanton	Slightly injured by a blast.
13,	Robert Roberts	West Shenandoah	Slightly injured by a blast.
14,	Michael Coogan	Boston Run	Slightly injured by fire-damp.
14,	Martin Murphy	.....do	Slightly injured by fire-damp.
15,	Henry Cosgrove	Turkey Ridge	Ribs broken by a fall of coal.
23,	Bernard Rafferty	Focht & Co	Leg broken by a fall of coal.
Nov. 9,	George Bower	Draper	Shoulder broken by getting on a wagon.
15,	Simon Kazakieoski	Knickerbocker	Leg broken by a fall of coal.
15,	Daniel Galvin	Ellengowen	Arm broken by a fall of coal.
19,	Adam Blass	Girard	Arm broken by the wagon.
Dec. 1,	Nicholas Menzer		Severely injured by fire-damp.
1,	Jacob Giemm		Severely injured by fire-damp.
1,	Walter Nelson		Severely injured; he fell into a shute.
4,	Frederick Sieners	Lawrence	Slightly injured by a fall of coal.
11,	Henry Scheetz	Indian Ridge	Thigh broken by the dirt wagon.
14,	William Roinel	Draper	Leg broken in the elevator.
18,	Hester Brandon	Copley	Leg broken by a fall of slate.
18,	Matthew Mock	....do	Leg broken by a wagon.
23,	Thomas Taylor	Lost Creek	Slightly injured by a fall of coal.

Making 308 cases of injuries during the year, against 311 during last year.

It will be noticed that since the resumption on the 23d of June the principal portion of those accidents took place consequent upon hurry and negligence; that with ordinary care, and a proper discipline in managing the collieries, very many of these accidents would be avoided. A large portion of the coal of the region is mined by contractors. These men must labor steadily in order to make a day's wages and be able to pay their assistants and expenses. They commonly prepare the timber, props, sills, rails, put down their own tracks, make their air-courses, and a number of other jobs, besides cutting the coal, and unless he can succeed well in the forenoon he cannot expect to do so in the afternoon. In view of this extraordinary labor, things are hurried on to their utmost. Besides the daily shipments, cars must be loaded and orders filled in a business-like manner, that in a colliery where 300 or 400 persons are employed, the running of loaded and empty trains and mining materials, it is not surprising to learn of the many accidents that occurred in our mines.

To those not familiar with the amount of labor performed in our high pitching Anthracite mines it would appear surprising, when it is known that an equal amount of rock, slate and refuse is handled to the amount of coal produced, which is not the case in flat or Bituminous mines, to estimate the waste at fifty millions of tons is not out of the way, and of course the risk to fatal accidents is equally occasioned thereby.

A condensed exhibit of the fatal casualties in the district of Schuylkill in the seven years ending December 31, 1875.

Character of the Casualties.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	Total.
Falls of coal	23	31	47	25	34	38	18	216
Falls of rocks and slate	9	6	3	9	7	7	2	43
Falls into slopes, shafts and open breasts,	2	4	8	10	5	26	5	60
Falls of timbers, props, etc	5	4	1	3	4	.....	1	18
Explosions of fire-damp	7	19	24	17	26	6	2	101
Explosions of powder	7	1	2	3	5	1	6	25
Explosions of blasts and shots	2	1	6	1	6	6	2	24
Explosions of steam boilers	3	2	1	.....	1	6	.....	13
Crushed by wagons and timbers, etc	5	12	12	14	12	9	4	68
Falling off slope and shaft cages	3	2	.....	.....	2	2	5	14
Breaking of ropes and chains	6	3	7	1	2	1	.....	20
Crushed in wheels and machinery	2	.....	2	2	4	6	5	21
Crushed in the rollers	6	1	4	2	3	4	1	21
Suffocated by noxious gases	1	2	.....	3	2	.....	.....	8
Injured by animals	.....	4	1	.....	1	2	.....	8
Miscellaneous accidents	11	12	9	2	21	15	5	75
Total annual deaths	92	104	127	92	135	129	56	735
Total annual maimed and injured	308	342	379	265	406	298	91	2,089
Total annual widows	39	43	74	49	66	81	30	382
Total annual orphans	141	160	273	169	257	280	150	1,430
Total	580	649	853	575	864	788	327	4,636

A condensed exhibit of fatal casualties in Schuylkill county collieries during seven years ending December 31, 1875.

Fatal Casualties.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	Total.
Falls of coal	15	24	37	21	26	37	18	178
Falls of rocks and top slate	8	2	3	4	5	5	2	29
Falls into slopes and shafts	1	4	7	8	6	4	5	35
Falls of timber and props	.....	2	1	3	1	1	1	9
Explosions of fire-damp	7	16	10	15	26	8	2	84
Explosions of powder	1	1	1	9	2	1	6	21
Explosions of blasts and shots	.....	1	2	.....	5	4	2	14
Explosions of steam boilers	3	2	.....	.....	1	5	.....	11
Crushed by wagons	3	7	7	.....	8	15	4	44
Falling off slopes and shaft cages	2	2	.....	2	2	6	5	19
Breaking of slope and shaft chains	4	4	6	1	3	12	.....	30
Crushed in machinery	1	2	6	1	5	.....	5	20
Crushed in rollers	4	.....	4	2	3	4	1	18
Suffocated by noxious gases	1	.....	.....	.....	.....	.....	.....	1
Injured by mules	.....	2	1	.....	.....	3	.....	6
Sundry accidents	8	9	6	3	9	7	5	47
Total deaths	58	78	91	69	102	112	56	566
Total maimed and injured	217	226	321	226	339	252	86	1,667
Total widows	29	36	47	39	57	70	30	308
Total orphans	115	140	183	128	162	250	150	1,128
Aggregate	419	480	642	462	660	684	352	3,669

A condensed exhibit of fatal casualties in Northumberland county collieries during the seven years ending December 31, 1875.

Fatal Casualties.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	Total.
Falls of coal	8	6	9	4	7	5	.....	39
Falls of rock and top slate	2	2	1	1	2	2	.....	10
Falls into slopes and shafts	.....	1	3	.....	1	.....	.....	5
Falls of timber and props	.....	1	.....	.....	1	1	.....	3
Explosions of fire-damp	.....	4	12	3	1	2	.....	22
Explosions of powder	1	.....	.....	.....	.....	.....	.....	1
Explosions of blasts and shots	2	.....	1	.....	1	.....	.....	4
Explosions of steam boilers	.....	.....	.....	.....	.....	.....	.....	.....
Crushed by wagons	7	.....	5	.....	5	2	.....	19
Falling off slope and shaft cages	.....	1	.....	.....	.....	.....	.....	1
Breaking of slope and shaft chains	2	.....	.....	.....	.....	.....	.....	2
Crushed in machinery	1	.....	.....	.....	1	1	.....	3
Crushed in rolls	.....	.....	.....	.....	.....	.....	.....	.....
Suffocated by noxious gases	.....	.....	.....	.....	.....	.....	.....	.....
Injured by mules	.....	.....	.....	.....	.....	.....	.....	.....
Sundry accidents	.....	2	1	.....	1	1	.....	5
Total deaths	23	17	32	8	20	14	.....	114
Total maimed and injured	78	92	46	26	54	35	.....	331
Total widows	9	6	20	4	8	7	.....	54
Total orphans	12	16	42	16	26	26	.....	138
Aggregate	122	131	140	54	108	82	.....	637

A condensed exhibit of fatal casualties in Columbia county collieries during the seven years ending December 31, 1875.

Fatal Casualties.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	Total.
Falls of coal	1							1
Falls of rocks and top slate								
Falls into slopes and shafts								
Falls of timber and props								
Explosions of fire-damp				1	1	1		3
Explosions of powder	4			1	3			8
Explosions of blasts and shots	1		1	1				3
Explosions of steam boilers					1	1		2
Crushed by wagons		1		2				3
Falling off slope and shaft cages					1			1
Breaking of slope and shaft chains		1						1
Crushed in machinery								
Crushed in rollers								
Suffocated by noxious gases								
Injured by mules								
Sundry accidents	1			2	1			4
Total deaths	7	2	1	7	7	2		26
Total maimed and injured	7	8	7	10	12	9		53
Total widows			1	3	1	1		6
Total orphans			4	12	1	4		21
Aggregate	14	10	13	32	21	16		106

A condensed exhibit of fatal casualties in Dauphin county collieries during the seven years ending December 31, 1875.

Fatal Casualties.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	Total.
Falls of coal	3	2		1		1		7
Falls of rocks and top slate	1			4				5
Falls into slopes and shafts								
Falls of timber and props		1						1
Explosions of fire-damp			2		1			3
Explosions of powder								
Explosions of blasts and shots					2			2
Explosions of steam boilers		1						1
Crushed by wagons		3	1	2	2			8
Falling off slope and shaft cages					1			1
Breaking of slope and shaft chains								
Crushed in machinery								
Crushed in rollers								
Suffocated by noxious gases								
Injured by mules								
Sundry accidents		1		1				2
Total deaths	4	8	3	8	6	1		30
Total maimed and injured	6	16	5	13	14	2		56
Total widows	3	1	2	3	1	1		11
Total orphans	10	6		11	6	3		56
Aggregate	23	31	10	35	27	7		133

A statement of the non-fatal accidents in and about the collieries of the three districts in the year 1875.

Character of Injuries.	Pottsville	Shenandoah.	Shamokin.	Total.
Injured from falls of coal	18	54	47	119
Falls of rocks and slate	1	6	15	22
Falls into slopes and shafts	.....	3	5	8
Falls of timber and props	2	1	3	6
Explosions of gases	28	15	2	45
Explosions of powder	3	2	6	11
Explosions of blasts	5	4	9	18
Explosions of boilers	1	1	.....	2
Injured by wagons	11	18	11	40
Suffocations	.....	1	2	3
Falling off cages	.....	.....	.....	.....
Broken ropes and chains	4	2	2	8
In machinery	2	1	.....	3
In rollers	1	.....	.....	1
By drills and tools	1	1	1	3
By fall of planks	1	1	.....	2
Cut by axes	1	.....	.....	1
Falls of trestleing	.....	1	.....	1
Flooding of mine	.....	.....	2	2
Vicious animals	.....	1	.....	1
Miscellaneous cases	9	2	1	12
Totals	88	114	106	308
To 22d September	42	76	77	195
From 22d to December 31	46	38	29	113
Totals	88	114	106	308
Of this number died of their injuries	5	3	3	11

A statement of the character of the injuries sustained by persons employed in and about the collieries of the respective districts during the year ending December 31, 1875.

Character of Injuries Received and Number of Maimed Persons.	Pottsville district.	Shenandoah district.	Shamokin district.
11 persons had their heads crushed	4	3	4
2 persons had their backs broken	1	.....	1
17 persons had each an arm broken	2	12	3
1 person had both his arms broken	1	.....	.....
31 persons had each a leg broken	5	13	13
2 persons had an arm cut off	1	1	.....
1 person had both legs cut off	1	.....	.....
3 persons had a leg cut off	.....	1	2
3 persons had their fingers cut off	.....	3	.....
1 person had his toes cut off	1	.....	.....
3 persons had their sides crushed in	.....	3	.....
3 persons had their shoulders crushed	1	2	.....
12 persons had their hands crushed and injured	2	4	6
13 persons had their feet crushed and injured	1	2	10
5 persons had their bodies crushed and injured	1	3	1
3 persons had their thighs broken	1	2	.....
1 person had his hand cut off by coal	.....	1	.....
4 persons had lost an eye each	.....	2	2
3 persons had their hips broken	1	.....	2
	23	52	44

119 persons were maimed during life; 189 others were severely injured, making in all 308 cases, injuries not resulting in death, against 342 cases of a like character last year, or 43 less. The collieries of Schuylkill county very generally were idle from the 9th of December, 1874, to the 23d of June, 1875.

Pottsville District Casualties and Character of the Fatalities.

Twenty-eight fatal accidents occurred in and about the collieries of this district during the year; but since the 22d of September last the district had been increased by the addition to it of New Boston basin collieries, and all collieries now west of the West Branch of the Schuylkill river and south of Broad mountain, in Schuylkill county, except Brookside colliery; it extends from Carbon county to Dauphin county line, and is 38 miles in extent.

Character of these Fatalities.

5 persons lost their lives by falls of coal.
3 .....do.....do.....falls of rock and slate.
7 .....do.....do. ...explosions of fire-damp.
1 person lost his life by....explosion of powder.
1 .....do.....do.....explosion of a blast.
1 .....do .....do.....being crushed by wagons.
3 persons lost their lives by breaking of slope chain.
2 .....do.....do.....falling into slopes and shafts, &c.
2 .....do.....do.....falling of cages.
1 person lost his life by....being crushed in machinery.
1 .....do.....do.....being crushed by trestleing.
1 .....do.....do. . .hemorrhage.

28 persons came to their death by the above accidents, leaving 17 widows and 62 orphans, and 88 non-fatal accidents.

Shenandoah District Casualties and their Character.

Twenty six fatal accidents occurred in this district during the year; but since the 22d of September the district was divided, and all the collieries situated west of the eastern limit of Girardsville and north of Broad mountain, in Schuylkill county, and all the collieries in Columbia county, were cut off and the same added to Shamokin district, which accounts for the increase in fatal casualties in the Shamokin district this year.

Character of these Fatalities.

8 persons lost their lives by falls of coal.
3 .....do.....do.....falls of rocks and slate.
1 person lost his life by....breaking of ropes and chains.
1 .....do.....do.....falling into slopes and shafts.
3 persons lost their lives by explosions of boilers.
3 .....do.....do.....being crushed in the rollers.
2 .....do.....do.....being crushed in machinery.
2 .....do.....do.....falling into open breasts
1 person lost his life by....an explosion of fire-damp.
1 .....do.....do.....being crushed by wagons.
1 .....do.

26 persons came to their death from the above causes, leaving 11 widows and 49 orphans, and 114 persons were maimed and injured.

Shamokin District Casualties and their Fatal Character.

Thirty-eight persons came to their deaths in this district during the year; but since the 22d of September last the district has been re-formed. At present it comprises all the collieries in Schuylkill county north of the Broad mountain and west of the eastern boundary line of the borough of Girardsville, together with all the collieries in Columbia, Northumberland and Dauphin counties, and the Brookside colliery, in western Schuylkill.

Character of these Fatalities.

14 persons lost their lives by falls of coal.
5 .....do.....do.....falls of rocks and slate.
5 ..... do... ....do.....explosions of powder.
2 .....do.....do.....explosions of blasts
6 .....do..... do.....being crushed by wagons.
2 .....do... ....do.....breaking of chains.
2 .....do..... do.....being crushed in machinery.
1 person lost his life by....falling into the rollers.
1 .....do.....do.... an explosion of fire-damp.

38 cases of fatal accidents occurred in this new district during the year, leaving 13 widows and 30 orphans, and 106 non-fatal accidents, 49 of which were maimed for life.

County casualties condensed for the seven years ending December 31, 1875.

Years.....	Schuylkill.				Northumberland.				Columbia.				Dauphin.				Total.....
	Killed..	Maimed.	Widows.	Orphans.	Killed..	Maimed.	Widows.	Orphans.	Killed..	Maimed.	Widows.	Orphans.	Killed..	Maimed.	Widows.	Orphans.	
1869..	56	86	30	150	....	....	....	....	....	....	....	....	....	....	....	....	322
1870..	112	252	70	250	14	35	7	26	2	9	1	4	1	2	1	3	789
1871..	102	339	57	162	20	54	8	26	7	12	1	1	6	14	1	6	816
1872..	69	226	39	128	8	26	4	16	7	10	3	12	8	13	3	11	583
1873..	91	321	47	183	32	46	20	42	1	7	1	4	3	5	2	....	805
1874..	78	226	36	140	16	92	6	16	2	8	....	....	8	16	1	6	651
1875..	58	215	29	115	23	78	9	16	8	7	....	....	3	6	3	10	580
Total	566	1,665	308	1,128	113	331	54	142	27	53	6	21	29	56	11	36	4,546
To this number add slight injuries																	90
																	4,636

The above exhibit will show the number of fatal and injured accidents and the nember of widows and orphans in the different counties caused by mine accidents for the seven years ending December 31, 1875.

Review.

Obdurate indeed must he be who claims any pretentions to feelings of humanity and review those death rolls and accidents and then consider the amount of hardships and suffering endured by these people without being moved by compunction and charity for their condition, even while many of which are the victims of their own rashness or unwarranted negligence.

Their employment is so entirely different and dangerous from others they become oblivious from custom to that state of things that the most benevolent feelings become blunted by the constant repetition of these frightful casualties. Sad as this spectacle may appear it becomes the more sadder by the unsettled state of society that tends to embitter public sympathy against them, and turns aside friends and benefactors from real deserving cases and calls down the indignant frown of public opinion on the community that the innocent spectators must suffer the severity of critical reflections as well as the very few participators in follies and evil misdeeds meets with universal condemnation.

Suspensions.

Forcible suspensions of labor and production of the district collieries are fruitful agencies of distress, entailing a series of ill feeling and discredit, as is consequent upon such condition of affairs in as large communities as are met with in the coal region. The masses are obliged to maintain themselves by their earnings; being otherwise non-productive, the policy of steady employment at moderate wages when the state of the trade is unsettled would be of more real benefit. As labor is far in excess of the demand the state of society becomes excited. As the questions at issue do not appear to be very popular outside the localities that are directly interested, it appears that no intermediate agencies desires to come forward that could or would effect a solution of this vexed question, but leave the antagonists to treat the matter after their own manner of thinking. But whilst all this is going on it not alone affects these rival elements, but the whole community at large is sustaining incalculable injury.

Might not a law be enacted that could set limits to such difficulties by authorizing the executive to appoint a commission of judges of our courts, and an equal number of persons representing the disputing interests, that are fully competent to discuss questions relating to both, fully and fairly, and the act of two-thirds of such commission should be binding after the same would be reviewed by the Attorney General and approved by the Governor; and this commission to be to all intents and purposes a commission for adjusting such claims from whose decision there should be no appeal? The parties refusing to comply with the award could be held accountable for infringement on the law. Some such system would at once remove the disputation out of the power of agitators. No suspensions or coercion should be permitted on either side, and the community could follow their accustomed employment and business as all good citizens should and ought to.

Operators.

Operators of coal mines, as a class of business merchants, generally labor under many expensive disadvantages. When the mine has been worked to the third or fourth lift the power needed for drainage, mining and ventilation is exceedingly expensive, besides the large amount of dead or unproductive work that must consequently ensue; and unless the veins are profitable to work abandonment must be the result. In that case the current belief is the operator wronged some one and got rich, while the truth is the reverse.

There are few collieries that do or can work over two-thirds of the year under favorable circumstances, and many not that, either while the other part of the year or time while idle does not tend to reduce the current expenses, and unless he has the good fortune of having in his employ practical, prudent officers, fully competent under every emergency to do the man.

agement properly and well, the standing of his colliery will sink down with the pressure of miscellaneous expenses, only to be seen in his books.

Practice in a manager or boss is a pre-requisite qualification, but it requires more than practice and experience in a boss. He should possess the executive ability and be fully conversant with the details of modern systems of mining and mine machinery, and have the independent firmness of a just arbiter, to see that the just rights of either party should not suffer in his hands.

Mine Accidents.

Accidents arising from falls of coal are generally the result of bad timbering. They are the most numerous of all other accidents connected with coal mining, and all miners understand this; yet there are many men to be found, and who are practical enough, that grossly neglect timely propping, and fall victims to their own folly. There is no adequate apology to be made for this class of persons.

Explosions of fire-damp are the next great source of casualties amongst miners, many of which could be avoided by a rigid enforcement of the mine regulation and a proper degree of circumspection on the part of the miners themselves. In many of the collieries explosive gases are generated to an alarming extent, and become even fearful and hazardous to work in. Notwithstanding all this danger the miner clearly understands all this, but he is often so circumstanced that to evade his responsibilities to his family and others, that he becomes oblivious to impending dangers, and manfully risks his life for a principle that thousands more fortunately circumstanced would shrink from. The operator who neglects to establish mine regulations, or if established neglects to put them into force, is, to a certain extent, accountable for the injuries thereby sustained, nor can he waive the responsibility of the injury, having all the authority and direction of affairs in his own hands, and under a laxity of duty permits the men in his employ to disregard the law or mine rules.

Names of Collieries in operation in the mining district of Schuylkill, comprising the counties of Schuylkill, Northumberland, Columbia and Dauphin, during the year ending December 31, A. D. 1875.

Nos. and Names of the Collieries.	Locations of Collieries.	Counties wherein located.	Names of the operators; and the letter L denotes land-owners and operator.	Class of Collieries worked.
A.				
1. Alto, Mount	Frackville	Schuylkill	Longenecker & Co., L	1 slope.
2. Alaska, No. 1	Mount Carmel	Northumberland	P. R. Coal and Iron Company, L	1 shaft.
3. Alaska, No. 2	Tamaqua	Schuylkill	Gen. H. L. Cake	2 drifts.
B.				
4. Buckville	Tamaqua	Schuylkill	P. R. Coal and Iron Company, L	1 slope.
5. Beechwood	Mount Laffee	do	do do do	1 slope.
6. Boston Run	Gilberton	do	do do	2 slopes.
7. Bull Run	Tamaqua	do	Lehigh and W. C. Company, L	1 slope.
8. Bear Ridge	Planes	do	Girard estate	1 slope.
9. Barry	M'Neal	do	P. R. Coal and Iron Company	1 slope.
10. Big Mine Run	Big Mine Run	do	Tayler and Lindsy	3 drifts.
11. Bear Run	Gilberton	do	P. R. Coal and Iron Company	1 slope.
12. Brady	Shamokin	Northumberland	do do	4 drifts.
13. Buck Ridge	do	do	Renshaw & Johnson	2 slopes.
14. Burnside	do	do	P. R. Coal and Iron Company	2 slopes.
15. Bear Valley	do	do	do do	1 slope.
16. Bear Valley Shaft	do	do	do do	1 shaft.
17. Brookside	Brookside	Schuylkill	do do	1 slope.
18. Big Mountain	Northumberland co.	Northumberland	do do	6 drifts.
19. Big Lick	Williamstown	Dauphin	Summit Branch Railroad Company, L	3 lift slopes.
20. Ben Franklin	Helfenstine	Northumberland	P. R. Coal and Iron Company	1 slope, 1 drift.
21. Big Run Gap	Gratztown	Dauphin	Summit Branch Railroad Company	2 drifts.
22. Beaver Run	Mahanoy City	Schuylkill	Greenland Company	1 drift.
22½. Baltimore	Silver Creek	do	P. R. Coal and Iron Company	1 slope.
C.				
23. Caledonia	Shamokin	Northumberland	Henry Saylor	1 slope.
24. Cameron	do	do	Mineral Railroad and Mining Company	2 slopes, 5 drifts.
25. Colket	Donaldson	Schuylkill	Colket and others	1 slope.
26. Cuyler	Raven Run	do	Heaton & Bros	2 drifts.
27. Coal Ridge	Montana	Columbia	Greenland Company	1 slope.
28. Cambrian	Ashland	Schuylkill	Atkins & Co	1 slope idle.
29. Centralia	Centralia	Columbia	Dr. Provost	1 slope idle.

NAMES OF COLLIERIES IN OPERATION IN THE MINING DISTRICT OF SCHUYLKILL—*Continued.*

NOS. AND NAMES OF THE COLLIERIES.	Locations of Collieries.	Counties wherein located.	Names of the operators; and the letter L denotes land-owners and operator.	Class of Collieries worked.
30. Coal Mountain	Shamokin	Northumberland	Greenland Company	1 slope idle.
31. Copley	Mahanoy City	Schuylkill	P. R. Coal and Iron Company	1 slope.
32. Colorado	Girardsville	do	Philadelphia Coal Company	1 slope, 2 drifts.
33. Cedar Hill.				
34. Coaldale	Summit Hill	Schuylkill	L. and W. Coal Company, L	2 slopes.
D.				
35. Diamond	Forestville	Schuylkill	P. R. Coal and Iron Company, L	1 slope.
36. Diamond, No. 2	Eagle Hill	do	do do	1 slope, 1 shaft.
37. Draper	Gilberton	do	Gilbert and others	2 slopes.
38. Delaware, East	Pottsville	do	P. R. Coal and Iron Company	2 shafts.
E.				
39. Enterprise	Shamokin	Northumberland	P. R. Coal and Iron Company	2 slopes.
40. East Franklin	Donaldson	Schuylkill	do do	2 slopes.
41. Eureka	do	do	do do	1 slope.
42. Emory	Shamokin	Northumberland	do do	2 drifts.
43. Excelsior		do	do do	6 drifts.
44. Elmwood	Mahanoy City	Schuylkill	do do	1 slope.
45. Enterprise, No. 2		Northumberland	do do	1 shaft.
46. Ellangowen	Mapledale	Schuylkill	do do	1 shaft, 3 drifts.
47. Eagle	St. Clair	do	George W. John	2 slopes.
48. Eagle Hill	Eagle Hill	do	P. R. Coal and Iron Company	1 shaft, 1 slope.
49. East Mammoth	Raven Run	do	Donaldson & Bro	1 slope, 1 drift.
50. East Pine Knot	St. Clair	do	P. R. Coal and Iron Company	1 shaft, 1 slope.
51. Ellsworth	New Castle	do	do do	1 slope.
52. East Mahanoy	Mahanoy City	do	do do	1 slope.
F.				
53. Forestville	Minersville	Schuylkill	P. R. Coal and Iron Company	1 slope, 1 drift.
54. Furnace	Gilberton	do	Gilbert and others	1 drift.
55. Focht & Whittaker,	Mahanoy City	do	Greenland Coal Company	1 slope.
56. Franklin	Northumberland	Northumberland	P. R. Coal and Iron Company	3 slopes, 3 drifts.
57. Glentworth	Eagle Hill	Schuylkill	do do	1 slope.
58. George Fales	Shamokin	Northumberland	do do	1 slope, 1 drift.
59. Grant	Mahanoy City	Schuylkill	do do	2 drifts, 1 slope.

60. Girard Mammoth	Raven Run	Schuylkill	Cuyler & Co	1 slope, 2 drifts.
61. Girardsville	Girardsville	do	Philadelphia city	1 slope, 5 drifts.
62. Girard	do	do	Girard estate	1 shaft, 1 slope.
63. Glendower	Glen Carbon	do	P. R. Coal and Iron Company	1 slope.
64. Greenwood, No. 1	Tamaqua	do	Lehigh and Wilkesbarre Coal Company	1 slope.
65. Greenwood, No. 2	do	do	do do do	1 slope.
H.				
66. Hickory Shaft	Wadesville	Schuylkill	Hickory Coal Company	1 shaft.
67. Hoffman	Mahanoy City	do	Greenland Coal Company	1 drift.
68. Hillside	do	do	P. R. Coal and Iron Company	1 slope.
69. Hazledell	Centralia	Columbia	Greenland Coal Company	1 slope, 1 drift.
70. Honey Brook	New Pottsville	Schuylkill	Honey Brook Coal Company	4 slopes.
71. Henry Clay	Shamokin	Northumberland	P. R. Coal and Iron Company	1 slope, 2 drifts.
72. Hickory Ridge	do	do	do do	1 slope, 1 drift.
73. Hickory Swamp	do	do	Mineral Railroad and Mining Company	1 slope, 2 drifts.
74. Helfenstine	Helfenstine	do	P. R. Coal and Iron Company	1 slope.
I.				
75. Indian Ridge	Shenandoah	Schuylkill	P. R. Coal and Iron Company	1 shaft.
J.				
76. Jackson	St. Clair	Schuylkill	P. R. Coal and Iron Company	1 slope.
77. Joseph Tayler	Minersville	do	Bullock and others	1 drift.
K.				
78. Kear	Mine Hill Gap	Schuylkill	P. R. Coal and Iron Company	3 slopes.
79. Kentucky	Tuscarora	do	do do	1 slope.
80. Keystone	Ashland	do	do do	2 slopes.
81. Koh-i-noor	Shenandoah	do	Gilbert and others	1 shaft.
82. Knickerbocker	M'Neil	do	P. R. Coal and Iron Company	1 slope.
83. Kimble	Locust Gap	Northumberland	do do	1 slope.
84. Kalmia		Schuylkill	do do	1 drift.
85. Kangaroo.				
L.				
86. Luke Fidler	Shamokin	Northumberland	Mineral Railroad and Mining Company	1 slope, 2 drifts.
87. Lambert	do	do	do do do	1 slope.
88. Locust Spring	do	do	P. R. Coal and Iron Company	1 slope, 1 drift.
89. Lancaster	do	do	Greenland Coal Company	3 drifts.
90. Lower Rauch Creek	Rauch Creek	Schuylkill	P. R. Coal and Iron Company	2 slopes.
91. Lincoln	do	do	do do	1 drift.
92. Locust Creek	Lost Creek	do	Philadelphia Coal Company	2 slopes.

NAMES OF COLLIERIES IN OPERATION IN THE MINING DISTRICT OF SCHUYLKILL.—*Continued.*

NOS. AND NAMES OF THE COLLIERIES.	Location of Collieries.	Counties wherein located.	Names of the operators; and the letter L denotes land-owners and operator.	Class of Collieries worked.
93. Locustdale	Locustdale	Columbia	P. R. Coal and Iron Company	2 slopes.
94. Lehigh, No. 3	Shenandoah	Schuylkill	Philadelphia Coal Company	1 slope.
95. Lawrence	Gilberton	....do	Gilbert and others	1 slope.
96. Lehigh, West	Shenandoah	....do	....do	1 slope.
97. Lambert	New Philadelphia	....do		1 slope.
98. Llewellyn	Llewellyn	....do	P. R. Coal and Iron Company	1 slope.
M.				
99. Monitor	Wadesville	Schuylkill	P. R. Coal and Iron Company	1 slope.
100. Manchester	....do	....do	....do ....do	2 slopes, idle.
101. Mammoth Vein	New Castle	....do	....do ....do	1 slope.
102. Mine Hill	....do	....do	....do ....do	1 slope.
103. M'Neal	M'Neal	....do	....do ....do	2 slopes.
104. Mahanoy City	Mahanoy City	....do	....do ....do	1 slope.
105. Malvern	....do	....do	Greenland Coal Company	1 slope.
106. Myers	....do	....do	....do ....do	1 drift.
107. Monitor, No. 2	Locust Gap	Northumberland	P. R. Coal and Iron Company	1 slope.
108. Mariam	Shamokin	....do	....do ....do	1 slope.
109. Moreton	....do	....do	Greenland Coal Company	2 drifts.
110. Marshall	....do	....do	P. R. Coal and Iron Company	1 slope.
111. Middle Creek	Middle Creek	Schuylkill	....do ....do	1 shaft.
112. Margia Franklin	Shamokin	Northumberland	P. R. Coal and Iron Company and others	1 shaft.
N.				
113. New Locust Gap	Locust Gap	Northumberland	P. R. Coal and Iron Company	1 slope.
114. Northside	Gratztown	Dauphin	....do ....do	1 drift.
115. North Gilberton	Gilberton	Schuylkill	Gilberton & Shafer	2 slopes.
116. New Boston	New Boston	....do	New Boston Coal Company	2 slopes.
117. Morton	Shamokin	Northumberland		2 drifts.
118. North Mahanoy	Mahanoy City	Schuylkill	P. R. Coal and Iron Company	1 slope.
119. New Kirk	New Kirk	....do	....do ....do	1 slope.
120. North America	Pottsville	....do	....do ....do	1 drift.
O.				
121. Oakdale	Glen Carbon	Schuylkill	P. R. Coal and Iron Company	1 shaft.
122. Oak Hollow	Mahanoy City	....do	Greenland Coal Company	1 slope, 1 drift.

123. Otto	Muddy Branch	Schuylkill	P. R. Coal and Iron Company	1 slope.
P.				
124. Phœnix, No. 1	Phœnix Park	Schuylkill	P. R. Coal and Iron Company	1 slope.
125. Phœnix, No. 2	do	do	do	1 slope.
126. Pyne	Swatara	do	do	2 slopes.
127. Preston, Nos. 1 & 2	Girardsville	do	do	2 slopes.
128. Preston, No. 3	do	do	do	1 slope.
129. Preston, No. 4	do	do	do	1 drift.
130. Primrose	Mahanoy City	do	do	1 slope.
131. Plank Ridge	Shenandoah	do	do	1 shaft, 1 slope.
132. Peach Mountain	Tuscarora	do	do	1 slope.
133. Pine Forest	St. Clair	do	do	1 shaft, 1 slope.
134. Palmer	Combola	do	do	1 slope.
135. Pine Knot, West	Coal Castle	do	do	1 slope.
R.				
136. Ravendale	Reevesdale	Schuylkill	P. R. Coal and Iron Company	1 slope.
137. Richardson	Glen Carbon	do	do	2 slopes.
138. Reliance	Shamokin	Northumberland	do	2 slopes.
139. Royal Oak	do	do		1 drift.
140. Reno	Mt. Carmel	Columbia	Greenland Coal Company	1 slope.
S.				
141. Stewartsville	Mt. Carmel	Northumberland	Greenland Coal Company	1 slope.
142. Shamokin	Shamokin	do	Carson Track	1 slope.
143. Short Mountain	Williamstown	Dauphin	Summit Branch Railroad Company	1 slope, 1 tunnel.
144. St. Clair Drift	St. Clair	Schuylkill	P. R. Coal and Iron Company	1 drift.
145. Sharp Mountain	Pottsville	do	Richardson's estate	1 slope.
146. Sh'p Mount'n, No. 2	do	do	do	1 slope.
147. Suffolk	St. Nicholas	do	do	1 slope.
148. Summit	Tamaqua	do	do	1 slope.
149. St. Nicholas	St. Nicholas	do	P. R. Coal and Iron Company	2 slopes.
T.				
150. Tamaqua Drift	Tamaqua	Schuylkill	P. R. Coal and Iron Company	1 shaft, 1 drift.
151. Taylorville	Glen Carbon	do		1 slope.
152. Tracy	Pottsville	do	P. R. Coal and Iron Company	1 drift.
153. Thomaston	Glen Carbon	do	do	1 shaft, 1 slope.
154. Tower City	Tower City	do	do	1 slope.
155. Trevorton	Trevorton	Northumberland	do	1 slope.
156. Thomas	Shenandoah	Schuylkill		1 slope.
157. Turnel	Ashland	do	P. R. Coal and Iron Company	2 slopes.

NAMES OF COLLIERIES IN OPERATION IN THE MINING DISTRICT OF SCHUYLKILL—*Continued.*

NOS. AND NAMES OF THE COLLIERIES.	Location of Collieries.	Counties wherein located.	Names of the operators; and the letter L denotes land-owners and operator.	Class of Collieries worked.
158. Tunnel Ridge	Mahanoy City	Schuylkill	P. R. Coal and Iron Company	1 slope.
159. Trenton	do	do		1 slope.
U.				
160. Union, No. 1	Big Mine Run	Schuylkill	P. R. Coal and Iron Company	1 slope, 1 drift.
161. Union, No. 2	Centralia	Columbia		1 slope, 1 drift.
W.				
162. West Shenandoah,	Shenandoah	Schuylkill	P. R. Coal and Iron Company	1 slope.
163. Wm. Penn	do	do	Gilbert and others	1 shaft.
164. West Mahanoy	Mahanoy City	do	P. R. Coal and Iron Company	1 slope.
165. West End	Donaldson	do	Miller, Hock & Co	1 slope.
166. Williamstown	Williamstown	Dauphin	Summit Branch Railroad Company	1 slope.
167. Webster, Daniel	Shamokin	Northumberland	do do	1 slope, idle.
168. Wilson, George	Delaware	Schuylkill	P. R. Coal and Iron Company	1 drift.
169. West Lehigh	Shenandoah	do	Gilbert and others	1 slope.
Y.				
170. York Farm, No. 1,	Pottsville	Schuylkill	P. R. Coal and Iron Company	1 slope.
171. York Farm	do	do	do do	1 slope.
172. Yorkville	do	do	Richardson's estate	1 slope.
173. York, new slope	do	do	P. R. Coal and Iron Company	1 slope.
174. Yatesville	Yatesville	do	do do	1 slope, 3 drifts.

A statement of names, power and capacity of the respective collieries in Pottsville district in the year 1875.

NAMES OF COLLIERIES.	Slope	Shaft	Drift	Breasts	Engines	Power	Fans	Power	Pumps	Power	Boilers	Men	Boys	Total force employed	Live stock	Number of killed	Number of injured	Number of explosions,	Number of tons mined,
Tower City	1																		
Kalmia			1																
Lincoln			1																
Colket	1																		
West End			1																
Eureka			1																
Lower Rauch Creek	2																		
Franklin	2																		
Middle Creek		1																	
Pyne, No. 2	2																		
Otto	1																		
Phœnix, No. 1	1																		
Phœnix, No. 2	1																		
Minersville Drift			1																
Diamond	1																		
Forestville	1		1																
Black Heath	1																		
Taylorville	1																		
Glendower	1																		
Oakdale		1																	
Richardson	2																		
Anchor	2																		
Thomaston		1																	
New Boston	2		1																81,340
Thomaston Slope	1																		
Palmer Vein	1																		
Eagle Hill	1	1																	
Kear	2																		
West Pine Knot	1																		
East Pine Knot	1																		
Ellsworth	1																		
Mammoth Vein	1																		
Beechwood	1		1																

STATEMENT OF NAMES, POWER AND CAPACITY OF COLLIERIES IN POTTSVILLE DISTRICT—*Continued.*

NAMES OF COLLIERIES.	Slope	Shaft	Drift	Breasts	Engines	Power	Fans	Power	Pumps	Power	Boilers	Men	Boys	Total force employed,	Live stock	Number of killed	Number of injured	Number of explosions,	Number of tons mined,
George Wilson			1																
Eagle	2		1																
Alto, Mount	1																		
Hickory Shaft		1																	
Delaware Shafts		2																	
Pine Forest Shaft	1	1																	
Peach Mountain	1																		
Kentucky	1																		
Buckville	1																		
New Kirk	1																		
Reevesdale	1																		
Tamaqua		1	1																
Greenwood	1																		
Bull Run	1		1																
Tunnel, No. 10			1																
Coaldale	1																		
Llewellyn	1																		
Taylor's Drift			1																
Sharp Mountain	1																		
Sharp Mountain, No. 2	1																		
York Farm	1																		
Fisher's York Farm	1																		
Yorkville	1																		
West Delaware, No. 1	1																		
West Delaware, No. 2	1																		
East Delaware	1																		

A Statement of names, power and capacity of the collieries of the Second district in the year 1875.

Names of Collieries.	Slopes	Shafts	Drifts	Breasts	Engines	Horse power	Fans	Horse power	Pumps	Horse power	Boilers	Men	Boys	Total force employed	Live stock	Mine wagons	Killed	Maimed	Number of tons shipped
Shenandoah City	2	....	1	25	9	338	1	40	1	60	8	121	73	194	10	60	2	....	67,850
Focht & Whittaker	....	1	....	29	3	130	....	.....	1	60	4	163	50	213	15	75	.....	.....	51,620
Oliver & Wood	....	....	1	9	1	30	....	.....	.....	.....	2	22	13	35	2	10	.....	.....	11,000
Mahanoy City	1	....	1	30	8	530	2	30	2	80	18	123	61	184	21	80	2	....	54,827
Peach Mountain	....	....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Idle.
Diamond	....	....	....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Idle.
Elmwood	1	....	....	33	5	160	1	10	1	40	10	78	41	119	7	24	.....	.....	28,940
Tunnel Ridge	1	....	....	25	8	300	2	30	1	60	14	197	81	278	26	58	1	....	56,901
St. Nicholas	1	....	....	40	5	910	1	20	2	200	16	143	56	199	20	80	3	....	47,338
Suffolk	1	....	3	18	4	107	1	10	1	40	11	102	30	132	15	66	1	....	23,245
Gilberton	2	....	....	9	6	317	1	15	3	150	17	105	71	176	22	55	.....	.....	50,437
Draper	2	....	....	35	9	655	2	30	3	120	20	167	57	224	30	125	....	....	57,042
Primrose	1	....	4	32	4	160	1	10	1	40	10	112	38	150	15	50	.....	.....	54,776
Glendon	1	....	....	20	5	160	1	25	1	40	11	121	48	169	10	62	.....	.....	67,969
Lawrence	2	....	....	15	6	540	1	20	1	60	15	130	81	211	22	60	....	....	67,417
Girard	1	3	....	40	9	540	2	30	2	150	22	150	70	220	22	43	1	....	45,969
West Shenandoah	1	1	....	12	3	100	1	20	1	40	8	121	73	194	10	60	1	....	30,485
P. & R. C. & I. Co. (new)	1	....	.....	.....	1	40	....	.....	3	100	4	28	.....	28	.....	.....	.....	.....	1,000
Plank Ridge	2	1	....	80	9	390	....	.....	2	100	17	300	79	379	31	100	1	....	81,737
Turkey Run	1	....	1	40	4	140	1	15	1	50	10	210	90	300	29	125	.....	.....	61,359
Honey Brook	4	....	....	150	14	2,165	....	.....	6	1,200	59	795	142	937	63	400	.....	.....	209,782
Girardsville	....	....	4	60	3	150	....	.....	.....	.....	4	125	60	185	24	50	.....	.....	39,371
M'Michael	1	....	3	60	7	350	1	20	1	50	16	300	157	457	46	190	.....	.....	87,610
Stanton	1	....	....	20	5	242	1	10	1	40	13	150	85	235	18	51	1	....	61,792
Delano	1	....	1	.....	3	100	1	20	....	.....	9	67	24	91	6	20	.....	.....	26,266
Malvern (West Lehigh)	1	....	....	17	3	120	....	.....	1	40	7	40	20	60	11	20	1	....	13,501
Beaver Run	....	....	1	10	1	40	....	.....	.....	.....	2	41	13	54	8	36	.....	.....	15,653
Thomas	2	....	1	20	9	500	1	20	1	200	16	154	112	266	20	60	1	....	66,467
Wm. Penn	....	1	....	60	12	167	1	30	1	60	16	300	59	359	45	159	1	....	107,640
Girard Mammoth	1	....	1	25	8	265	1	20	1	40	12	150	53	203	25	90	.....	.....	39,407
Trenton	1	.....	....	10	4	140	1	20	1	40	9	69	22	91	12	30	.....	.....	15,653

STATEMENT OF NAMES, POWER AND CAPACITY OF THE COLLIERIES OF THE SECOND DISTRICT—*Continued.*

NAMES OF COLLIERIES.	Slopes	Shafts	Drifts	Breasts	Engines	Horse power	Fans	Horse power	Pumps	Horse power	Boilers	Men	Boys	Total force employed	Live stock	Mine wagons	Killed	Maimed	Number of tons shipped
Bear Run	1	....	....	16	8	550	1	20	1	150	20	100	53	153	7	50	1	....	57,411
Colorado	1	....	2	50	6	219	1	40	1	40	7	145	84	229	20	86	....	....	46,803
Copley	1	....	5	6	2	70	1	10	1	30	3	100	25	125	6	25	....	....	66,856
Ellengowan, No. 1	....	1	....	13	2	80	1	40	1	40	6	60	6	66	13	60	....	....	53,985
Knickerbocker	1	....	3	20	6	185	2	30	2	60	11	151	83	234	20	80	....	....	64,593
Banks & Co	1	....	....	....	1	5	....	....	....	....	1	16	2	18	2	4	....	....	1,000
Furnace	....	....	2	12	1	30	....	....	....	....	2	95	35	130	6	50	....	....	62,521
Boston Run	1	....	....	56	8	205	2	21	1	50	12	97	79	176	23	65	....	....	43,338
Lost Creek	2	....	1	25	9	338	1	20	1	40	12	295	69	364	26	60	1	....	63,995
Lehigh, No. 3	2	....	....	60	7	265	1	20	1	60	10	152	84	236	10	55	....	....	88,581
*Philadelphia Coal Co. (new)	1	....	....	....	1	60	....	....	....	....	4	24	....	24	....	....	....	....	....
Koh-i-noor	....	1	....	60	16	660	1	50	2	tanks	14	230	53	283	30	150	2	....	95,638
King & Tyler (B. vein)	....	....	1	....	1	10	....	....	....	....	2	24	13	37	8	30	....	....	10,098
Bear Ridge, No. 1	1	....	....	12	8	575	1	20	1	60	8	100	79	179	9	32	....	....	87,876
B. R. tunnel, No. 2	....	....	1	25	5	110	1	20	....	....	8	100	88	188	11	37	....	....	....
Cuyler	....	....	2	33	5	125	1	30	....	....	6	195	50	245	20	45	1	....	52,571
North Mahanoy	1	....	...	40	5	160	2	20	2	40	10	150	43	193	10	38	....	....	43,354
†Hillside	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Indian Ridge	....	1	2	72	9	658	1	40	2	100	18	221	108	329	21	100	....	....	98,569
Ellengowan, No. 2	....	....	3	12	3	70	1	40	....	....	6	200	85	285	21	100	1	....	....
Grant	....	....	2	9	3	65	....	....	....	....	4	63	21	84	9	28	1	....	24,378
Hartford	....	....	1	17	1	20	....	....	....	....	2	60	27	87	5	25	....	....	1,000
Davis	1	....	....	4	1	5	....	....	....	....	1	6	2	8	2	6	....	....	1,500
Jones & Co	....	....	1	4	1	6	....	....	....	....	1	8	2	10	1	2	....	....	11,031
	47	10	48	1,470	277	14,257	43	866	56	3,730	548	7,176	2,850	10,026	868	3,297	26	....	2,520,179
																		Local	480,000
																		Gross tonnage mined	3,000,179

*Sinking a new slope.

†Idle or abandoned at present.

STATEMENT OF SECOND DISTRICT COLLIERIES.

Recapitulation of the collieries of Shenandoah district, showing their shipments, the power and force employed, the number of fatal and non-fatal accidents that occurred during the year, to wit:

There are 47 slopes, 10 shafts and 48 drifts in operation, 1,470 breasts of coal are worked, 277 steam engines with 548 steam boilers are in use, 43 steam fans of 866-horse power are in use for ventilating the collieries; 7,176 men and 2,850 boys=10,026 hands are employed—868 mules and 3,297 wagons are in use; 26 fatal and 114 non-fatal accidents occurred, leaving 11 widows and 49 orphans. 2,520,179 tons of coal had been sent to market, and 480,000 tons had been locally used, making an aggregate of 3,000,179 tons of coal mined; making one fatal accident for every 116,319 tons mined, and one fatal accident for every 385 persons employed. Visits on official duty, 178; number of miles traveled, —.

A statement of names, power and capacity of the respective collieries in the Shamokin district in the year 1875.

Names of Collieries.	Slope	Shaft	Drift	Breasts	Engines	Horse power	Fans	Horse power	Pumps	Horse power	Boilers	Men	Boys	Total hands employed	Live stock	Mine wagons	Killed	Injured	Explosions	Number of tons of coal mined
Brookside	1	...	1	73	7	220	1	20	2	60	22	230	60	290	....	....	....	....	....	68,547
Big Lick	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	76,428
Williamstown	3	....	1	60	6	650	2	50	....	....	21	560	60	620	....	....	....	....	....	315,714
Short Mountain	2	....	4	.....	.....	1,600	1	50	....	....	50	542	140	682	....	....	....	....	....	173,694
Marshall	1	....	....	.....	1	8	....	....	....	....	6	8	.....	8	....	....	....	....	....	2,911
Trevorton	3	....	3	50	4	365	1	20	....	....	25	293	110	403	....	....	....	....	....	76,419
Luke Fidler	1	....	2	46	5	175	1	20	....	....	8	213	50	263	....	....	....	....	....	108,500
Henry Clay	1	....	2	.....	2	90	....	....	....	....	6	145	40	185	....	....	....	....	....	85,945
Buck Ridge	2	....	....	20	2	200	1	....	....	....	11	150	49	199	....	....	....	....	....	110,000
Enterprise	2	....	....	.....	4	320	....	....	....	....	10	160	20	180	....	....	....	....	....	52,665
Reliance	2	....	....	.....	4	245	1	20	....	....	11	85	30	115	....	....	....	....	....	38,920
Big Mountain	....	....	6	.....	3	70	1	20	....	....	5	350	100	450	....	....	....	....	....	198,135
Mariam	2	....	....	40	4	375	1	25	....	....	20	190	55	245	....	....	....	....	....	86,630
Monitor	2	....	....	24	4	328	1	20	....	....	18	180	60	240	....	....	....	....	....	48,855
Lancaster	....	....	3	10	1	20	....	....	....	....	1	54	16	70	....	....	....	....	....	24,998
Locust Gap	1	....	....	.....	2	270	1	20	....	....	12	200	40	240	....	....	....	....	....	18,830
Locust Spring	1	....	1	.....	2	170	1	20	....	....	11	90	50	140	....	....	....	....	....	21,393
Cameron	2	....	5	49	4	90	1	30	....	....	17	450	100	550	....	....	....	....	....	280,189
Ben. Franklin	1	....	2	24	1	25	....	....	....	....	3	100	30	130	....	....	....	....	....	46,905
Morton	....	....	2	.....	1	15	....	....	....	....	1	30	15	45	....	....	....	....	....	20,803
Alaska Shaft	1	2	....	.....	4	385	2	50	....	....	10	200	55	255	10	50	1	....	....	20,925
George Fales	1	....	1	.....	1	40	....	....	....	....	6	80	15	95	....	....	....	....	....	37,576
Enterprise, No. 2	....	1	....	.....	1	40	....	....	....	....	4	54	.....	54	....	....	....	....	....	2,500
Big Mine Run, West	....	....	3	.....	4	190	1	20	....	....	13	66	66	132	....	....	....	....	....	55,000
Brady	....	....	4	.....	1	50	....	....	....	....	5	70	25	95	....	....	....	....	....	20,377
Excelsior	....	....	6	.....	1	65	....	....	....	....	5	120	60	180	....	....	....	....	....	43,463
Coal Ridge	1	....	....	.....	2	150	1	20	....	....	16	40	25	65	....	....	....	....	....	12,411
Black Diamond	1	....	2	.....	4	120	....	....	....	....	4	53	17	70	....	....	....	....	....	5,338
Burnside	2	....	....	.....	4	180	1	20	....	....	11	211	90	301	....	....	4	....	....	108,521
Bear Valley	....	....	1	.....	1	30	....	....	....	....	2	172	50	222	....	....	....	....	....	91,931
Hickory Swamp	1	....	2	12	2	140	1	20	....	....	7	170	55	225	....	....	....	....	....	71,019

Hickory Ridge	1	....	1	20	3	190	1	20	....	....	9	92	30	122	....	....	....	....	23,415
Bear Valley Shaft	....	1	1	.....	1	150	1	20	....	....	10	20	4	21	....	....	....	....	5,338
Franklin	....	....	2	.....	1	8	....	....	....	....	1	30	.....	30	....	....	....	....	10,000
Royal Oak	....	....	1	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	4	....	....	....	....	815
Helfenstine	1	....	1	12	3	165	1	20	....	....	5	140	25	165	....	....	....	....	15,974
Big Run Gap	....	....	2	.....	.....	.....	.....	.....	.....	.....	.....	15	5	20	....	....	....	....	3,345
Bear Valley Drift	....	....	1	.....	1	8	....	....	....	....	1	12	.....	12	....	....	....	....	1,000
Northside	....	....	1	.....	1	10	....	....	....	....	1	8	.....	8	....	....	....	....	3,529
Keystone	2	....	....	.....	9	918	1	40	....	....	35	200	64	264	....	....	....	....	23,648
Locustdale	2	....	....	25	6	790	1	40	....	....	25	159	71	230	....	....	....	....	40,910
Locust Run	1	....	1	25	4	270	1	20	....	....	24	210	62	272	....	....	....	....	43,053
Tunnel	2	....	1	.....	10	1,445	1	40	....	....	36	169	47	216	....	1	....	....	50,072
Centralia	2	....	1	.....	2	340	....	....	....	....	11	18	.....	18	....	....	....	....	11,000
Continental	1	....	....	.....	2	340	1	....	....	....	8	.....	.....	.....	....	....	....	....	48,861
Union, No. 2	1	....	1	.....	2	.....	....	....	....	....	8	.....	.....	.....	....	....	....	....	56,469
Hazledell	2	....	1	16	4	360	....	....	....	....	12	163	40	203	....	....	....	....	21,000
Big Mine Run, East	2	....	1	.....	5	330	1	40	....	....	25	163	121	284	....	....	....	....	72,122
Stewartsville	2	....	2	25	2	50	1	20	....	....	6	120	80	200	....	....	....	....	44,694
Preston, Nos. 1 and 2	2	...	3	72	4	175	3	80	....	....	13	320	55	375	....	....	....	....	37,747
Preston, Nos. 3 and 4	2	....	1	30	5	815	1	20	....	....	20	100	50	150	....	....	....	....	16,356
Reno	1	....	....	2	.....	.....	.....	.....	.....	.....	.....	6	.....	6	....	....	....	....	1,000
Little Diamond	....	....	1	.....	1	15	....	....	....	....	1	12	.....	12	....	....	....	....	2,000
Vaughan Drift	....	....	1	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	6	....	....	....	....	1,000
Lilly Drift	1	....	....	.....	1	10	....	....	....	....	1	9	5	14	....	....	....	....	9,326
Wadley Slope	1	....	....	.....	1	60	....	....	....	....	4	6	.....	6	....	....	....	....	Pumping
Out Crop Drift	....	....	1	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	6	....	....	....	....	500
Centralia, out crop	....	....	1	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	10	....	....	....	....	1,000
Red Ash Tunnel	....	....	1	6	1	50	....	....	....	....	2	20	10	30	....	....	....	....	New.
Bryson's Drift	....	....	1	2	.....	.....	.....	.....	.....	.....	.....	5	.....	5	....	....	....	....	340
Sixty collieries	55	3	78	646	151	12,965	36	....	21	....	592	7,289	2,296	9,585	....	....	38	....	3,388,726

Recapitulation.

Sixty-four working collieries in the district, 3 shafts, 55 slopes, 23 tunnels, 55 drifts, 151 engines=12,965-horse power ; 592 boilers, 14 pole and 7 bull pumps, 36 steam fans, 7 furnaces ; 7,289 men and 2,296 boys=9,585 hands employed. 186 visits, making 5,168 miles traveled. 38 fatal and 111 non-fatal accidents occurred during the year, leaving 13 widows and 30 orphans. 2,848,726 tons of coal had been shipped, 542,000 tons had been consumed in the district, making 3,388,726 tons mined ; making one fatal accident to each 89,177 tons, and one non-fatal accident to each 252 persons employed in the district.

Maps of Collieries for 1875.

A list of maps of coal mines and collieries furnished by land owners, agents and superintendents for use of inspectors of coal mines and collieries of their respective districts, being prepared from actual surveys in compliance with the act of Assembly of March 5, 1870, and are now of record in this office.

Pottsville District Maps.

Number and Name of Colliery.	Location of Colliery.	Remarks.
1. Beechwood	Mount Laffee	1 slope, active.
2. Norwegian	....do	1 slope, idle.
3. Oak Hill	Mine Hill Gap	1 slope, idle.
4. Duncan	Duncanville	1 slope, idle.
5. Kear	Mine Hill Gap	3 slopes, active.
6. West Pine Knot	....do	1 slope, active.
7. East Pine Knot	....do	1 slope, active.
8. Thomaston	Thomaston	1 slope, 1 shaft, active.
9. Heckscher	Heckscherville	1 slope, active.
10. Richardson	Glen Carbon	1 slope, active.
11. Oak Dale	....do	1 shaft, active.
12. Glendower	....do	1 slope, active.
13. Taylorville	....do	1 slope, idle.
14. Monteray	Monteray	1 slope, abandoned.
15. Diamond	Wolf Creek	2 slopes, abandoned.
16. Kear, No. 2	....do	1 slope, abandoned.
17. Forestville	Forestville	1 slope, 1 drift, active.
18. Diamond	....do	1 slope, active.
19. Phœnix, Nos. 1, 2	Phœnix Park	2 slopes, one idle, one active.
20. Phœnix, No. 3	....do	1 slope, idle.
21. Eagle	St. Clair	2 slopes, active.
22. Hickory Shaft	Wadesville	1 shaft, active.
23. Manchester	....do	2 slopes, idle.
24. Monitor	....do	1 slope, active.
25. Feeder Dam	Port Carbon	1 slope, idle.
26. Ravensdale	Port Carbon, East	1 slope, idle.
27. Pine Forest	St. Clair, East	1 shaft, active.
28. Rainbow Shaft	St. Clair	1 shaft, idle.
29. Spruce Forest	....do	1 slope, idle.
30. New Castle	New Castle	2 slopes, abandoned.
31. Swift Creek	Tuscarora	1 slope, abandoned.
32. New Kirk	....do	1 slope, active.
33. Wabash	Buckville	1 slope, abandoned.
34. Reevesdale	Reevesdale	1 slope, abandoned.
35. Tamaqua Shaft	Tamaqua	1 shaft, 1 drift, abandoned.
36. Alaska	....do	2 drifts, abandoned.
37. Greenwood	Tamaqua, East	2 slopes, one idle, one active.
38. Bull Run	....do	1 drift.
39. Coaldale	Coaldale	2 slopes, active.
40. Commercial	New Philadelphia	3 slopes, idle.
41. Ledger Vein	Silver Creek	1 slope, active.
42. Silver Creek	....do	1 slope, idle.

POTTSVILLE DISTRICT MAPS—*Continued.*

NUMBER AND NAME OF COLLIERY.	LOCATION OF COLLIERY.	REMARKS.
43. Glentworth	Eagle Hill	1 slope.
44. Eagle Hill	do	1 slope, active.
45. Live Oak	Mine Hill Gap	1 slope, abandoned.
46. York Farm	Pottsville, West	1 slope, active.
47. York	do	1 slope, active.
48. Palmer	Combola	1 slope, active.

Shenandoah District Maps for 1875.

1. Girardsville	Girardsville	1 slope, 5 drifts, active.
2. M'Michael	do	1 drift, active.
3. Girard	do	1 slope.
4. Cuyler	Raven Run.	
5. Girard Mammoth	do.	
6. Lost Creek	Lost Creek	1 slope.
7. Colorado	Colorado	1 slope, 1 drift.
8. Lawrence	Frackville	1 slope.
9. Stanton	Gilberton	1 slope.
10. Girard tunnel	do	1 tunnel.
11. Gilberton	do	2 slopes.
12. Furnace	do	2 drifts.
13. Bear Ridge	New Planes	1 slope.
14. Bear Run	St. Nicholas	2 slopes.
15. St. Nicholas	do	1 slope.
16. Boston Run	do	2 slopes.
17. Gilberton, West	Gilberton	2 slopes.
18. Elmwood	Mahanoy City	1 slope.
19. Tunnel Ridge	Mahanoy, South	1 slope, 1 drift.
20. Hartford	do	1 slope, 1 drift.
21. Oak Hollow	do	1 slope, 1 drift.
22. Mahanoy City	Mahanoy, North	1 slope, 2 drifts.
23. Mahanoy, East	Mahanoy, East	1 slope, 2 drifts.
24. Glendon	do	1 slope.
25. Grant	do	1 slope, 1 drift.
26. Focht & Co	do	1 slope.
27. Primrose	Mahanoy, North	1 slope.
28. Sunnyside	do	1 slope.
29. Suffolk	St. Nicholas	1 slope.
30. Knickerbocker	M'Neal	1 slope.
31. M'Neal	do	1 slope, 1 shaft.
32. Copley	Mahanoy City	1 slope.
33. Barry	M'Neal	1 slope.
34. Lehigh, No. 3	Shenandoah	1 slope.
35. Koh-i-noor shaft	Shenandoah, South	1 shaft.
36. Wm. Penn	do	1 shaft.
37. Shenandoah, West	Shenandoah, West	1 slope, 1 tunnel.
38. West Lehigh	do	1 slope.
39. Turkey Run	do	1 slope.
40. Plank Ridge	do	1 shaft, 1 slope.
41. Shenandoah City	do	1 shaft.
42. Beaver Run	Mahanoy City, North	1 drift.
43. Malvern	do	2 drifts.
44. Trenton	do	1 slope.
45. Thomas	Shenandoah City	1 slope.
46. Ellengowan	Mapledale	1 slope, 1 shaft.
47. Hoffman	Mahanoy City, North	1 slope.
48. Honey Brook	New Pottsville	4 slopes.
49. Silver Brook	Silver Brook	1 shaft.

Shamokin District Maps for 1875.

Number and Name of Colliery.	Names of Locations.	Remarks, Etc.	Gross Tonnage.
1. Brookside	Brookside	1 slope	68,547
2. Short Mountain	Williamstown	1 slope, 1 tunnel	290,878
3. Williamstown	do	3 slopes	315,714
4. Big Lick	do	1 slope	76,428
5. Stewartsville	Mount Carmel	1 slope	44,694
6. Morton	Shamokin	1 slope	20,803
7. Cameron	do	1 slope, 4 drifts	270,199
8. Hickory Swamp	do		70,519
9. Hickory Ridge	do		18,940
10. Burnside	do		108,520
11. Buck Ridge	do		110,237
12. Henry Clay	do		85,945
13. Bear Valley	do		91,977
14. George Fales	do		32,576
15. Trevorton	do		76,419
16. Daniel Webster	do		Abandoned
17. Big Mountain	do		198,135
18. Franklin	do		46,905
19. Helfenstine	Helfenstine		15,974
20. Reliance	Shamokin		38,920
21. Enterprise	do		52,665
22. Locust Spring	do		31,864
23. Locust Gap	do		18,830
24. Mariam	do		86,631
25. A. S. Wolf	do		Abandoned
26. Coal Ridge	Columbia		12,411
27. Shamokin	Shamokin		Abandoned
28. Greenback	do		20,377
29. Keystone	Locustdale		23,648
30. Franklin, No. 2	Shamokin		43,516
31. Locustdale	Columbia county		40,911
32. Locust Run	do		43,053
33. Centralia	do		11,000
34. Reno	do		1,000
35. Hazledell	do		21,000
36. Union, No. 1	Big Mine Run, Sch'kill co		72,122
37. Continental	Columbia		48,861
38. Union, No. 2	do	1 slope, 1 drift	56,469
39. Big Mine Run	Big Mine Run, Sch'kill co		55,000
40. Tunnel	do		50,072
41. Preston, Nos. 1 and 2	do		37,747
42. Preston, Nos. 3 and 4	do		16,356
43. Frank Gowen	Shamokin		Idle.
44. North Franklin	do		37,054
45. Alaska Shaft	Mount Carmel		21,393
46. Luke Fidler	Shamokin		103,800
47. Monitor	do		48,855
48. Excelsior	do		43,463
49. Lancaster	do		24,953
50. Franklin	do		10,667
51. Black Diamond	do		5,338
52. Marshall	do		2,911
53. Royal Oak	do		800
54. Lambert	do		169
55. Stewartsville	Mount Carmel	1 slope	44,694
56. Little Diamond	Schuylkill county		2,000
57. Vaughan's Drift	do		1,000
58. Lilly Drift	do		9,329
59. Out Crop Drift	Columbia		500
60. Centralia Drift	do		1,000
61. Red Ash Tunnel	do	1 tunnel	New.
62. Bryson's Drift	do	1 drift	340

Sixty-four collieries were in operation in Shamokin district during the year, which produced 2,848,726 tons. Tonnage consumed in the district, estimated 540,000 tons. The aggregate amount of tons mined=3,388,726 tons.

Schuylkill County Collieries in 1875.

	Tons in 1875.
1. Brookside	68,547
2. Tower City	.....
3. Lincoln	.....
4. Kalmia	.....
5. Lower Rauch Creek	.....
6. Franklin, East	26,340
7. Colket	.....
8. West End	.....
9. Eureka	.....
10. Middle Creek shaft	9,025
11. Pyne	.....
12. Otto	35,694
13. Phœnix, No. 2 } consolidated,	27,061
14. Phœnix, No. 1 }	
15. Forestville	33,738
16. Diamond	.....
17. Taylorville	.....
18. Glendower	24,322
19. Oakdale	31,279
20. Richardson's	4,907
21. Anchor	19,662
22. Thomaston slope.. } consoli'd,	41,104
23. Thomaston shaft.. }	
24. West Pine Knot.. } consoli'd,	2,202
25. East Pine Knot... }	
26. Kear Gap	21,076
27. Beechwood	44,772
28. Llewellyn (new)	1,200
29. James Taylor	1,000
30. J. R. Deam	800
31. George Wilson	1,500
32. Black Valley	2,000
33. Ellsworth	.....
34. Mammoth	.....
35. Alto, Mount	.....
36. Eagle	.....
37. Monitor	.....
38. Hickory shaft	.....
39. Delaware shafts	1,810
40. Tracy Vein	.....
41. Devlin slope	.....
42. Yorkville	.....
43. Sharp Mountain	.....
44. York Farm	.....
45. York Farm, No. 2	.....
46. Pine Forest	26,910
47. Palmer Vein	.....
48. Ledger Vein	.....
49. Peach Mountain	.....
50. Kentucky	.....
51. New Boston	81,340
52. Tuscarora	.....
53. Buckville	16,812
54. New Kirk	.....
55. Reevesdale	.....
56. Alaska	.....
57. Tamaqua	.....
58. Greenwood	.....
59. Bull Run	.....
60. Tunnel, No. 10	.....
61. Coaldale	.....
62. Grant drifts	24,378

	Tons in 1875.
63. Oak Hollow	26,266
64. Hartford	1,000
65. Tunnel Ridge	56,901
66. Boston Run	39,084
67. Draper	57,042
68. Lawrence	67,417
69. Girard	45,969
70. Bear Ridge } consol.,	87,876
71. Bear Ridge tunnel, }	
72. Stanton	61,792
73. Gilberton	50,437
74. Furnace	62,521
75. Bear Run	57,411
76. St. Nicholas	47,338
77. Elmwood	25,740
78. Mahanoy City	51,402
79. Silliman	40,080
80. Primrose	54,776
81. Glendon	67,969
82. Beaver Run	15,653
83. Hillside (abandoned)	.....
84. Copley	66,856
85. Malvern	13,501
86. Trenton	15,653
87. West Lehigh	13,501
88. M'Neal, No. 1 (inundated)	.....
89. M'Neal, No. 2 (inundated)	.....
90. Suffolk	23,245
91. Ellengowan	53,984
92. Knickerbocker	64,593
93. Wm. Penn shaft	107,640
94. West Shenandoah	30,069
95. Shenandoah City	67,850
96. Turkey Run	61,359
97. Indian Run	98,509
98. Plank Ridge	81,737
99. Thomas	66,467
100. Koh-i-noor	95,638
101. Lehigh, No. 3	88,581
102. Wood & Oliver	11,000
103. Bank & Co	1,000
104. Lost Creek	63,995
105. Lost Creek, No. 2, new slope,	1,500
106. Colorado	46,803
107. Girardsville	39,371
108. M'Michael	87,610
109. Cuyler	52,571
110. Girard Mammoth	39,407
111. Preston, Nos. 1, 2, 3 and 4	56,105
112. Big Mine Run, East	72,121
113. Big Mine Run, West	55,000
114. Tunnel	50,072
115. Keystone	23,648
116. Excelsior	2,000
117. Diamond	2,000
118. Eagle Hill	26,953
119. Preston, No. 1	8,220
120. Davis & Co	1,500
121. Preston, Nos. 1 and 2	37,747
122. Preston, Nos. 3 and 4	16,356
123. Jones & Co	11,031

Tonnage of Northumberland County Collieries in 1875.

Name of Colliery.	Operators.	Tonnage.
1. Cameron	Mineral Railroad and Mining Co	270,199
2. Big Mountain	Patterson & Llewellyn	198,135
3. Buck Ridge	May & Audenreid	110,237
4. Burnside	Isaac May & Co	108,521
5. Luke Fidler	Mineral Railroad Company	103,801
6. Bear Valley	Heim & Goodwell	91,977
7. Henry Clay	Langdon & Co	85,945
8. Trevorton	P. and R. Coal and Iron Company	76,420
9. Hickory Swamp	Mineral Railroad Company	70,520
10. Enterprise	Enterprise Coal Company	52,665
11. Monitor	G. W. Johns	48,856
12. Ben. Franklin	Douty & Baumgarden	46,905
13. Stewartville	Wm. Mortelius	44,694
14. Excelsior	Excelsior Mining Company	43,463
15. Reliance	Reliance Coal Company	38,920
16. George Fales	Heim & Goodwell	32,577
17. Locust Spring	P. and R. Coal and Iron Company	31,750
18. Lancaster	Smith & Keiser	24,954
19. Alaska Shaft	P. and R. Coal and Iron Company	21,393
20. Morton	Thomas Morton	20,804
21. Greenback	Guiteman & Gorman	20,377
22. Hickory Ridge	Mineral Railroad Company	18,940
23. Locust Gap	Grieber & Kimble	18,831
24. Helfenstine	P. and R. Coal and Iron Company	15,974
25. Coal Ridge	Burton & Bro's	12,411
26. Franklin	Lovel, Booth & Elms	10,667
27. Black Diamond	Schwenk & Co	5,338
28. Marshall	Reese & Bro's	2,912
29. Royal Oak	Tillet & Bro	800
30. Lambert	Wm. Brown	170
Thirty collieries	Aggregate tonnage	1,629,156
Estimated local consumption		70,000
		1,699,156
A gain over 1874 of		407,606

There is one fatal accident to each 73,876 tons of coal that was mined in the county in 1875.

Tonnage of Columbia County Collieries in 1875.

Name of Collieries.	Location of Collieries.	Remarks.	Gross Tonnage.
Coal Ridge		1 slope	12,411
Reno		1 slope	1,000
Mariam	Locustdale	1 slope	86,630
Locustdale	do	2 slopes	40,910
Locust Run	Ashland	1 slope	43,053
Centralia	Centralia	1 inundated	
Centralia out-crop	do	1 drift	11,000
Hazledell	do	1 slope	21,000
Continental	do	1 slope	48,861
Union, No. 2	do	1 slope, 1 drift	56,469
Red Ash tunnel	do	1 tunnel	1,000
Bryson's drift	do	1 drift	340
Twelve collieries shipped the following tonnage			322,674
And local consumption of same			42,000
Aggregate tonnage of Columbia county collieries			364,674

There is one fatal accident to each 52,096 tons of coal mined in the county in 1875.

Tonnage of Dauphin County Collieries in 1875.

Name of Collieries.	Location of Collieries.	Remarks.	Gross Tonnage.
Big Lick	Lykenstown	1 slope	76,428
Williamstown	Williamstown	3 slopes, 1 tunnel	315,714
Short Mountain	Wiconisco	1 slope	173,694
Big Run Gap	Gratztown	2 drifts	3,345
Northside	....do	1 drift	3,529
Aggregate tonnage of Dauphin county collieries			572,710

There is one fatal accident to each 143,177 tons of coal mined in the county in 1875.

Coal Tonnage of Schuylkill County in 1875.

By a return of tonnage of 85 collieries, there had been transported to market 3,119,607 tons. Thirty-five collieries made no returns so far; we estimate 1,284,544 tons=4,404,151 tons. Coal consumed in county, 595,849 tons, which figures will approximate to the actual number of tons of coal mined in the county, or say, in round numbers, 5,000,000 tons.

The number of fatal casualties in the county this year was 58, which will give one fatal accident for each 86,207 tons mined. There are three collieries whose tonnages had been consolidated with the old collieries, giving the actual number of active collieries in the county in 1875 as 123 against 112 in 1874.

Anthracite coal mined in the region, showing the amount marketed and consumed in the several counties during the four years ending December 31, *A. D.* 1875, *to wit:*

1872.

	Marketed.	Local.	Total tons.
Schuylkill	4,135,908	875,000	5,000,908
Northumberland	1,221,327	170,000	1,391,327
Columbia	319,220	25,000	344,220
Dauphin	450,328	30,000	480,328
Luzerne	9,194,808	1,500,000	10,694,808
Carbon	3,610,674	500,000	4,110,674
	18,932,265	3,100,000	22,032,265

1873.

Schuylkill	4,252,043	880,000	5,132,043
Northumberland	1,234,070	170,000	1,404,070
Columbia	358,741	25,000	383,741
Dauphin	449,915	30,000	479,915
Luzerne	10,047,241	1,675,000	11,722,241
Carbon	3,243,168	463,000	3,706,168
	19,585,178	3,243,000	22,828,178

1874.

	Marketed.	Local.	Total tons.
Schuylkill	.....	.....	4,037,435
Northumberland	.....	.....	1,221,551
Columbia	.....	.....	264,476
Dauphin	.....	.....	453,356
Luzerne	.....	.....	9,335,702
Carbon	.....	.....	3,237,043
	.....	.....	18,549,563

1875.

Schuylkill	4,404,151	595,849	5,000,000
Northumberland	1,629,156	70,000	1,699,156
Columbia	322,674	42,000	364,674
Dauphin	572,710	30,000	602,710
Luzerne, East	7,947,861	.....	.....
Luzerne, West	5,800,000	872,333	14,620,194
Carbon	2,323,536	232,352	2,555,888
Grand aggregate	22,000,088	1,842,534	24,842,622

Anthracite Region Casualties by Counties in 1875.

	Deaths.	Maimed.	Widows.	Orphans.	Total.
Schuylkill	58	215	29	115	417
Northumberland	23	78	9	16	126
Columbia	8	7	.....	.....	15
Dauphin	3	6	3	10	22
Luzerne, East	62	102	30	118	212
Luzerne, West	.....	.....	.....	.....	.....
Carbon	21	77	.....	.....	.....

A Condensed Statement of the collieries of the Schuylkill district, giving their number, casualties, power and capacities.

Remarks.	1875.	1874.	1873.
Number of collieries in the district	175	171	176
Official visits of inspection made	556	1,065	774
Miles traveled on official duty	12,377	13,988	12,415
Men employed at the collieries	20,902	17,795	15,701
Boys employed at the collieries	7,355	5,460	4,829
Total force employed at the collieries	28,257	23,255	20,530
Deaths during the year	92	104	126
Maimed and injured during the year	308	345	379
Widows of miners	41	53	74
Orphans of miners	141	180	273
Slopes in operation	155	162	143
Shafts in operation	22	17	18
Drifts in operation	141	130	150
Tunnels in operation	.....	72	.....
Miles of track in use	318	313	.....
Breasts of coal worked	.....	2,738	.....
Steam engines in use	665	695	692
Horse power of the engines	44,444	39,618	41,316
Ventilating steam fans in use	116	112	100
Horse power of fans	860	2,650	.....
Pumps in use	.....	175	.....
Horse power of pumps	.....	18,224	.....
Steam boilers in use	1,696	1,654	1,613
Explosions of fire-damp	27	44	58
Explosions of powder and blasts	27	17	26
Explosions of steam boilers	2	3	3

County Statistics for 1875 *and* 1874.

REMARKS.	Schuylkill county.		Northumberl'd county.		Columbia county.		Dauphin county.	
	1875.	1874.	1875.	1874.	1875.	1874.	1875.	1874.
Collieries	175	130	.....	39	8	6	5	5
Visits made	544	560	.....	424	.....	24	.....	18
Mileage	11,970	9,696	.....	2,802	.....	160	.....	720
Men employed	.....	11,234	.....	3,240	.....	836	.....	1,111
Boys employed	.....	3,796	.....	1,049	.....	215	.....	303
Total force employed	.....	15,030	.....	4,216	.....	1,051	.....	1,414
Deaths	58	78	23	16	8	2	3	8
Maimed	217	236	.....	92	7	8	6	16
Widows	29	36	.....	6	.....	.....	3	1
Orphans	115	140	.....	16	.....	.....	10	6
Slopes	.....	118	.....	28	.....	8	.....	9
Shafts	.....	13	.....	2	.....	1	.....	.....
Drifts	.....	72	.....	49	.....	2	.....	2
Tunnels	.....	59	.....	25	.....	2	.....	2
Railroad track	.....	198	.....	122	.....	9	.....	20
Breasts of coal	.....	1,961	.....	595	.....	62	.....	81
Steam engines	.....	537	.....	99	.....	33	.....	31
Horse power	.....	30,207	.....	2,309	.....	2,359	.....	2,492
Ventilating fans	.....	88	.....	9	.....	5	.....	4
Horse power	.....	2,151	.....	307	.....	100	.....	87
All pumps	.....	132	.....	27	.....	10	.....	9
Horse power	.....	14,446	.....	2,238	.....	1,316	.....	1,340
Steam boilers	.....	11,094	.....	285	.....	92	.....	83
Explosions of gas	.....	38	.....	4	.....	.....	.....	1
Explosions of powder and blasts	.....	8	.....	4	.....	1	.....	1
Explosions of steam boilers	2	2	.....	.....	.....	.....	.....	.....

Recapitulation of colliery power, force employed, and the coal tonnage mined during the year 1875.

REMARKS.	Pottsville district.	Shenandoah district.	Shamokin district.
Number of collieries	59 active.	54 active.	62 active.
Number of slopes	53 slopes.	55 active.	47 active.
Number of shafts	9	10 active.	3 active.
Number of drifts and tunnels	13	48 active.	80 active.
Number of engines	237	277 active.	151 active.
Number of power of same	19,231	14,257 active.	10,956 active.
Number of steam fans	37	43 active.	36, & 7 furnaces
Number of boilers	556	548 active.	592 active.
Number of men employed	6,437	7,176 active.	7,289 active.
Number of boys employed	2,209	2,850 active.	2,296 active.
Total hands employed	8,646	10,026 active.	9,585 active.
Number of visits made	296	178	186
Number of miles traveled	3,827	3,382	5,168
Number of fatalities	28	26	38
Number of non-fatalities	88	114	106
Number of tons of coal mined	3,853,629	3,000,179	3,388,726
Number of widows	17	11	13
Number of orphans	62	30	49
Number of explosions of gas	17	7	3
Number of explosions of powder	14	10	3
Number of steam boilers	.....	1	.....

District Colliery Statistics for 1875 *and* 1874.

Remarks.	Pottsville district.		Shenandoah district.		Shamokin district.	
	1875.	1874.	1875.	1874.	1875.	1874.
Number of collieries worked	59	48	54	70	62	53
Visits of inspection	296	386	178	210	186	469
Miles traveled	3,827	4,630	3,382	4,076	5,168	5,282
Men employed	6,437	3,434	7,176	8,695	7,289	5,666
Boys employed	2,209	1,228	2,850	2,367	2,296	1,869
Hands total	8,646	4,662	10,026	11,062	9,585	7,535
Deaths	28	35	26	44	38	26
Maimed persons	88	100	114	95	106	150
Widows	17	14	11	20	13	19
Orphans	62	65	49	71	30	49
Slopes in operation	53	44	55	76	47	42
Shafts in operation	9	5	10	7	3	5
Drifts and tunnels in operation	13	18	48	52	80	60
Tunnels in operation	.....	12	.....	37	.....	23
Miles of track used	48	49	.....	129	.....	135
Coal breasts worked	.....	503	.....	1,411	.....	824
Steam engines	237	157	277	356	151	182
Their horse power	19,231	11,631	14,257	17,542	10,956	10,445
Fans for ventilation	37	22	43	59	36	31
Their power	.....	506	.....	1,500	.....	644
Pumps, all sorts	.....	38	.....	76	60	61
Their power	.....	4,811	.....	8,860	.....	4,553
Steam boilers in use	556	346	548	794	592	514
Explosions of gas	17	28	7	7	3	9
Explosions of powder and blasts	14	2	10	5	3	10
Explosions of steam boilers	.....	1	1	2	.....	.....

Requirements of the Mine Ventilation Act of March 3, 1870.

Persons in charge of Mines are required to furnish me his answers to the following questions:

In mining law.	QUESTIONS.
Sect. 1.	1. Have you intelligent maps of your mines and workings for Inspector's use, as required by law?
	2. Have you furnished statements of mining progress and improvements to the Inspector?
	3. Have you abandoned any lift or level in your mines without due notice to Inspector of such act?
Sect. 2.	4. Have you neglected to furnish the necessary information on the condition of your mines to the Inspector, being requested to do so?
Sect. 3.	5. Have you two safety inlets and outlets for ingress and egress always available in case of accident, to secure the safety of miners?
	6. Have you unfinished inlets or outlets or air-courses not heretofore completed, or in progress of completion?
	7. Have intervening lands prevented the execution of safety roads in your mines, when the safety of miners' lives may be involved?
Sect. 6.	8. Have you a suitable place where miners may change dress and wash in if required?

SECT. 7. 9. Have you an adequate amount of ventilation circulating in splits in each working district of your mine, as required by law?

10. What mode or apparatus do you use to produce ventilation in your mine in summer and winter?

SECT. 8. 11. Have you a competent practical boss miner and firemen who do their duty to your miners and mines properly?

SECT. 9. 12. Have you to use safety lamps—in what condition kept, and if kept locked for better safety?

13. Does your mines generate noxious gases?

14. Do you need bore holes in certain places to protect miners from the dangers of lodgement water or gas?

SECT. 10. 15. Have you in use, or need of speaking tubes, in shaft or slope, for better safety of men?

16. Have you secured your drums by brakes, horns and flanges, with proper machinery attached, to keep the ropes in safe position?

17. Have you employed persons under twelve years of age to work in your mines?

SECT. 11. 18. Have you provided careful, trustworthy, competent and intelligent engineers and firemen to handle your engines and machinery with care?

19. Have you permitted persons not engineers in good practice to meddle with engines and machinery in the place of competent engineers?

SECT. 12. 20. Have you neglected to notify inspector and coroner in cases of death or accidents to your miners or hands?

SECT. 13. 21. Have you had your boilers examed, as required by law, by competent persons, and report of their condition recorded?

22. Have you wholly secured all dangerous places about your establishment to prevent accidents?

SECT. 14. 23. Have you furnished intelligent maps and plans, showing the situation of buildings, roads, streams, and how the same are secured from danger?

24. Have you ascertained the complement of air traversing gangway and reported the same monthly?

INSPECTOR'S REQUIREMENTS.

1. Have you sufficient covers on cages or carriages, if in shaft, to secure men from injury or death?
2. Have you a spreader-chain on crosshead attached to slope and shaft ropes sufficiently safe?
3. Have you safety catches in use? If so, have you proved them to be secure and good?
4. Have you good ropes or chains in use and adequate brake-power to command them in case of accident to machinery?
5. Have you air-courses of sufficient section area to admit of sufficient ventilation?
6. Do you permit persons to ride on loaded wagons or cages out of your mines when traveling roads are available?
7. Do you permit more than ten (10) persons to ascend and descend on cage or wagon in slope or shaft at any time?
8. Do you measure the quantity and motion of air in face of gangways weekly and record the same?
9. Do you, as manager or operator, understand your duty to your men in case of death or injury?

10. Have you ascertained all dangerous places from caving in of mines and fenced the same securely?
11. Do you fully understand the meaning of the Mining Act of 1870, and the penalties it imposes for neglect or failures to comply; and further the right of action by the heirs of any person that may lose their lives thereby as provided by law?
12. Have you prescribed your own rules and regulations for the government of your mines, and posted the same rules and regulations in conspicuous places in and about the colliery, that all your men may fully understand your instructions and mode of government of the same and carry the same into effect; or do you permit unskillful persons to work where gases are evolved, where, by their ignorant acts, they may endanger the lives of your men and property?
13. Have you employed or entrusted any persons, other than intelligent and practical persons, to do duty as top and bottom men in your slope or shaft, and whom you know will take an interest in doing justice to your property and the safety of men, and enforce the rules and duties prescribed for them?
14. Have you discharged reckless or incompetent persons from responsible stations, knowing them to be such, and again restored them to places where their acts may endanger the safety of men and property?
15. Are you satisfied that your mines are properly managed for the security of your men and your own interest under the present system, or does it require some improvement and time to effect the desired and benefited change.

——— ———, *Superintendent.*
——— ———, *Boss Miner.*

Dear Sir:—I hereby notify you to comply with the requirements of the mining law, passed and approved the third day of March, A. D. 1870, and especially in all things that are herein marked deficient, or consider yourself open and subject to the operations of the law itself, as approved for in many sections, but particularly in sections five and twenty-four.

———,
Inspector of Mines, No. — District.

Ventilation Report.

For the month ending.....187

Name and location of colliery .....

Operator's name. Superintendent's name. Mine boss' name.

.....

To..... .....Inspector of.....District.

Sir:—In conformity with the provisions of the eighth section of the act of Assembly, entitled "An Act providing for the health and safety of persons employed in coal mines, approved the 3d day of March, A. D. 1870," I herewith report measurements of the quantum of air supplied for ventilating each panel, district and gangway, tested weekly by instruments; also the temperature outside and inside the mine.

How Ventilation is Produced.

Deg.					Deg.					Deg. diff.
.....Outside temperature			1st	week.	.....Inside temperature			1st	week.	.....
.....	"	"	2d	"	.....	"	"	2d	"	.....
.....	"	"	3d	"	.....	"	"	3d	"	.....
.....	"	"	4th	"	.....	"	"	4th	"	.....
.....Main temperature for the mo.					.....Main temperature for the mo.					.....

Districts and locations measured...	Days of month.....	Cubic feet of air in breast.....	Cubic feet of air in outcast at surface.	Cubic feet of air in 1st 100 yards east gangway.....	Cubic feet of air in face of east gangway.....	Cubic feet of air in 1st 100 yards west gangway.....	Cubic feet of air in face of west gangway.....	Cubic feet of air in east tunnel.....	Cubic feet of air in west tunnel.....	Cubic feet of air in 3d gangway face.	Cubic feet of air in 4th gangway face.	Cubic feet of air in 5th gangway.....	Cubic feet of air in 6th gangway.....	Average cubic feet of air in working breasts.....
Weekly dates of measurement.	1 8 15 22													
Monthly average in cubic feet.														
No. of hands employed in each district.....														

Sort of gas generated.....

Accidents, their cause and character, with name, age and employment of persons; if married, the number in family.

NOTE.

FATAL ACCIDENTS.

The causes of fatal accidents are the fruitful occasion of grave discussions among intelligent, practical miners, as to why are they so numerous and how should they be prevented, and it would be better had this subject been more thoroughly discussed and remedies proposed for their abatement to a certain extent. It cannot be expected that an end can ever be put to mine accidents, but there is no evasion of the question but what by a strict observance of law and mine regulations, and by a compulsory obedience to rules, and a better order of government in and about the collieries, fully one-half these accidents could be averted.

There is another phase to this question that has apparently escaped the notice of those who appear to become interested in the subject, or, if not, it has not appeared in their discussions so far. The point that appears to me to have escaped notice is this: That the reasons put forward treat of the collieries as if they are all alike in their general character and structure, when it is well known this is not the case, but quite the reverse, for scarcely no four collieries can be found agreeing in their general appointments, nor are they governed by the same rules or local regulations; and this state of things is attributable to sundry conditions of the coal seams, their different angles of dip, the working of anticlinal and synclinal measures, and level and inclined working of all conjointly through the same openings, the means and manner how ventilation is effected, the means used for lowering men into and hoisting them out of the different mines.

There is another feature connected with the working of many of these collieries that has a tendency to influence accidents to employees, from the fact that a large part of the work is let to contractors, such as the delivery of miners' supplies, the loading of coal and haulage of the same, contracts by the wagon and yardage, the employer furnishing the necessary power and general convenience for the expedition of the same, while by this course he expects to have less responsibility and better and more work rendered than would be had the case been otherwise.

When we consider this state of the case properly it must be admitted that where there are so many interests, independent of each other, and all exerting their best endeavors to earn all they can as per contract, it is evident there will be confusions that cannot otherwise be but result in acci-

dent, and that the fore and latter part of the day are the periods most prolific of fatal accidents. In such collieries the bosses are but mere figure-heads, not evidently having the desire or power to check irregularities, and are rendered semi-officials or mere time-keepers only.

To account in some manner for this state of things, as the letting of contract system, the operator could not honestly be blamed for it, for it would, under days' wages, require him to employ a larger force of hands and a staff of bosses to execute the same amount of work, and the expenses thus incurred would perhaps over-balance his profits and finally end in his ruin, and the roll of fatal accidents would not be diminished thereby; but under the contract system he may possibly be able to continue operations until the close of his lease, without any detriment to himself or the abandonment of his colliery.

We are able to say, from our relation to the keeping of records of accident, that under the common contract system over two-thirds of all mine accidents take place during the fore and after parts of the day.

That falls of coal, rock and slate are more numerous in the morning than in the evening, and so is explosions of fire-damp, but powder, blasts and shot explosions appear to occur oftener in the latter part of the day; and so it appears the accidents done by wagons, while those that occur by the breaking of ropes, chains, machinery and rollers occur more numerous in the morning, noon and evening than at any other time of the day. So that by these observations we are enabled to locate the periods of time that these casualties generally occur.

The question as to prevent mine accidents to a certain extent presents itself for consideration, and is a question that, on the score of human justice, demands, at the hands of every intelligent person in the management of miners, laborers and collieries, a candid and just reply. Our answer in this case would be, first a proper supply of prop timbers, and to see that it be timely applied to support the roof and coal is the duty of the boss, and any accident arising from this want on his part through culpable neglect would absolutely find him guilty of a grave crime under the act of Assembly, and before his fellow-man unworthy of any trust in or about the collieries.

To all manner of explosions, excepting powder, the present law would find the boss miner and fire boss to a certain extent criminally committed for their occurrence, although they may not be directly cupable for all such accidents, yet the gravity of their responsibilities are such as would consider them amenable to the law as derelict in the proper discharge of their onerous duty in two ways: First, the act of Assembly, section —, requires that there shall be no standing gases, and that there shall be ample ventilation in each working place; secondly, the want of forcing obedience to these wise provisions of the law and rules of the mine would evidently bar their excuse, and hold them culpable, while the miners by some fatality or other, although cognizant of the terrible danger and its consequent results, are often the participants in their own destruction, and why? By want of reasonable care and proper attention for their own welfare. But there is accidents over which no earthly precaution has the least knowledge or control, and in mining they are numerous.

All accidents resulting from contact with machinery is generally attributed to the injured party; that from habit they become negligent or venturesome to such a degree as to embolden them so far as to forget the danger that results from risks.

The force employed in and about the coal mines in this region are composed of over one-third of which are boys under 18 years of age, and among this class will be found an element not easily governed, as far as their per-

sonal safety is concerned, their habits from youth in the school of the mine strikes one not accustomed to it with astonishment, to behold these youths execute the great amount of labor delegated to them to perform, and with what little evidence of fear they evince in its execution, and how well it is done is surprising.

The more mature persons who are employed in and about the mines, and from whom much better conduct might be expected, are often found to contain a portion of a disobedient element, as far as their personal safety may be concerned, both fearless and independent, daunted by no amount of danger, which they hazard with admirable courage. We don't charge this class with a guilty intention of evading the law or the regulation of the mine, but with undue impatience in their hurry to get through with their work, jumping at risksome advantages that too often prove fatal in the end.

District Inspectors.

The offices of inspectors of coal mines and collieries for this district are happily supplied with men of excellent ability, who have been identified with mines and mining from their youth. They have the practical and educational training that becomingly qualifies them for the position and its arduous duties devolving upon them to discharge. And it is gratifying to know that fatal accidents are diminishing under their direction, as will be seen by referring to our statements of fatal accidents embodied in this report.

Their best efforts are often made the subject of criticism with vacant minds and less favored persons, who are sure to be identified with the abuse of the mining law themselves; but this class are fortunately few, while the better judgment and discretion of the thinking masses prevails. In connection with the labors of the inspectors, a proper compliance with their mining law by the miners themselves is the great source from which the power is derived that will surely diminish fatalities in our mines; and the next source to be looked to is a stringent code of mine regulations given to men that is sure to enforce them as done by police. The wail of the widows or cry of the hundreds of orphans, nor would the funeral cortege, that so frequently moves to pity the sympathizing community, be a daily spectacle to be heard or seen.

A condensed statement of the number of fatal accidents that occurred in the several mining districts in the anthracite regions during the years 1874 *and* 1875, *including the number of hands employed, the number of collieries operated, the number of tons of coal mined, the number of deaths per tons mined, the number of fatal accidents to the number of hands employed, and likewise the number of non-fatal accidents in the same:*

1874.

NAME OF COUNTIES.	No. of collieries operated.....	No. of tons of coal mined	No. of hands employed.....	No. of fatal accidents	No. of tons per each death	No. of deaths per number hands employed	No. of non-fatal accidents .....
Schuylkill	101	5,157,853	15,030	78	66,126	193	226
Northumberland	35	1,404,070	4,289	16	87,754	268	92
Columbia	8	383,741	1,051	2	191,870	525	8
Dauphin	5	479,915	1,414	8	59,989	177	16
Luzerne, East	97	6,808,057	16,571	69	98,667	240	89
Luzerne, West	96	4,913,984	13,576	57	86,210	238	105
Carbon	41	3,800,043	8,000	33	115,153	242	45
Total	383	22,947,663	59,931	263	.....	.....	581

1875.

Schuylkill	125	5,000,000	15,223	58	86,207	328	215
Northumberland	30	1,391,327	4,557	23	60,495	305	78
Columbia	12	364,674	1,576	8	43,027	231	7
Dauphin	5	572,710	1,593	3	160,109	365	6
Luzerne, East	.....	7,947,861	16,000	62	128,109	497	102
Luzerne, West	.....	.....	13,500	.....	.....	.....	.....
Carbon	41	2,555,888	8,505	21	121,709	405	77

The aggregate coal tonnage of the State of Pennsylvania from the commencement of the trade in 1820 *to the close of the year* 1875, *inclusive, as gleaned from the records of the Miners Journal:*

COUNTIES SUPPLY OF COAL SINCE ITS COMMENCEMENT.	Years since its development commenced.	Aggregate tonnage of the sundry districts.	Money value of coal at $4 00 per ton at sea-board.
Schuylkill Canal	54	31,717,006	$126,868,024
Philadelphia and Reading Railroad	36	83,393,633	333,514,532
Lehigh Canal	56	29,268,458	117,073,832
Lehigh Valley Railroad	21	39,804,091	159,216,364
Lehigh and Susquehanna Railroad	8	17,206,859	68,827,536
Delaware and Hudson Canal	47	32,565,193	130,260,772
Lehigh Railroad	29	17,609,736	70,438,944
Pennsylvania Canal	34	12,175,004	48,700,016
Pennsylvania Railroad Company	26	19,100,999	76,403,996
Great Western Railroad	22	28,351,254	113,405,016
Lehigh and Bloomsburg Railroad	18	9,800,229	39,200,916
Northern Central Railroad	37	12,844,234	51,376,936
Lykens Valley and Short Mountain	27	5,793,367	23,173,468
Trevorton mines	20	1,284,471	5,137,884
Fourteen sources of transportation	.....	341,114,534	1,364,458,136

To consider the immense amount of waste coal that is handled and destroyed in preparing our anthracite coal for market it must prove a great loss in the item of domestic fuel, for not less than one-third of the whole product of the mines is a total loss, or say $454,819,378 worth of fuel has been wasted, while the bituminous coals of Great Britain can be all utilized. Our very best anthracite coal is wasted by the system of its preparation.

John A. Robling's Wire Rope Scale.

Ropes of 133 wires.						Ropes of 49 wires.				
Trade number.....	Circumference in inches	Diameter in inches.....	Price per foot in cents..	Breaking strain in tons of 2,000 lbs.....	Circumference of hemp rope of equal strength	Trade number.....	Circumference in inches	Price per foot in cents..	Ultimate strength in tons of 2,000 lbs.....	Circumference of hemp ropes of equivalent strength in inches....
1	6¾	2¼	$1 20	74.00	15½	11	4⅝	54	36.00	10¾
2	6	2	1 05	65.00	14½	12	4¼	47	30.00	10
3	5½	1¾	91	54.00	13	13	3¾	41	25.00	9½
4	5	1⅝	78	43.60	12	14	3½	35	20.00	8¼
5	4⅜	1½	65	35.00	10¾	15	3	29	16.00	7¼
6	4	1¼	53	27.20	9½	16	2⅝	23	12.30	6¼
7	3½	1⅛	41	20.20	8	17	2⅜	18	8.80	5½
8	3⅛	1	34	16.00	7	18	2⅛	15	7.60	5
9	3	7/8	28	11.40	6	19	1⅞	13	5.80	4¾
10	2½	¾	25	8.64	5	20	1⅝	11	4.09	4
10¼	2	5/8	24	5.13	4½	21	1⅜	9	2.83	3¼
10½	1⅝	9/16	23	4.27	4	22	1¼	8	2.13	2¾
10¾	1½	½	22	3.48	3¾	23	1⅛	7	1.63	2½
.....	.....	.....	.....	.....	.....	24	1	6½	1.38	2¼
.....	.....	.....	.....	.....	.....	25	7/8	6	1.03	2
.....	.....	.....	.....	.....	.....	26	¾	5½	.81	1¾
.....	.....	.....	.....	.....	.....	27	⅝	5	.56	1½
.....	.....	.....	.....	.....	.....	27½	⅝	4	.....	.....
.....	.....	.....	.....	.....	.....	28	.....	3	large sash cord.	
.....	.....	.....	.....	.....	.....	29	.....	2	small sash c'd.	

For safe working load allow 1.5 to 1.7 of ultimate strength, according to speed and vibration. Drums, sheaves and pulleys should be double the diameter in feet that the rope is in inches, but never under the minimum of the rope diameter. Ropes will wear double as long on large drums; and also with the speed, it is better to increase the load than the speed. A hempen centre rope wears much better than a wire centre on short bends, and should not be coiled or uncoiled like hemp ropes; all twists should be avoided. Raw linseed oil is the best preserver, mixed with lamp-black; best preserver for ropes under water, three-fourths tar and one-fourth slacked lime, to coat it over.

Weight of T Rails.

Showing the number of tons per mile by the number of pounds per yard of rail, standard weight, at Haywood's rolling mills, Pottsville, Pa.:

At 16 pounds per yard it equals	$25\frac{325}{2240}$	tons per mile.
At 18 ....do....do	$28\frac{460}{}$	"
At 20 ....do....do	$31\frac{960}{}$	"
At 22 ....do....do	$34\frac{1280}{}$	"
At 25 ....do....do	$39\frac{640}{}$	"
At 28 ....do....do	44	"
At 30 ....do....do	$47\frac{320}{}$	"
At 33 ....do....do	$51\frac{1920}{}$	"
At 45 ....do....do	$65\frac{960}{}$	"
At 48 ....do....do	$75\frac{960}{}$	"
At 68 ....do....do	$106\frac{1920}{2240}$	"

The above table will enable a person to calculate the number of tons of T rail necessary to lay a mile or any part of a mile. It is exceedingly convenient for mine bosses to calculate a needed supply and make therefrom a correct estimate.

Ventilation Current.

In deep mines artificial ventilation is required for the safe working of the same, while it is necessary and proper that all persons employed in a mine, and more especially in mines that generate noxious gases largely, to have some obvious rule for their guidance and safety as regards fire-damp when mixed with air and how to guard against explosions, besides to know when it is dangerous to use a safety-lamp in certain currents of air. Here we give the rule:

Miles per Hour.	Aggregate feet in length	Feet per minute	Feet per second.....
1	5,280	88	$1\frac{1}{2}$
$1\frac{1}{2}$	7,920	132	2 1-5
2	10,560	176	3
$2\frac{1}{2}$	13,200	220	$3\frac{2}{3}$
3	15,840	264	$4\frac{1}{4}$
$3\frac{1}{2}$	18,480	308	$5\frac{1}{3}$
4	21,120	352	5 5-6
$4\frac{1}{2}$	23,760	396	6 6-10
5	26,400	440	$7\frac{1}{3}$
$5\frac{1}{2}$	29,040	484	8*
6	31,680	528	8 4-5
$6\frac{1}{2}$	34,320	572	$9\frac{1}{2}$
7	36,960	616	10 4-15

*At 8 feet per second the Davy lamp will explode; the Clanney will at 25 feet.

Remarks on Lamp Tests in England in 1869.

Where pure carburetted hydrogen gas is evolved an explosion is not imminent, unless the mixture contains from six to twelve times its volume of air. In this state it is imminently dangerous to approach even with the safety-lamp, unless the air-current is imperceptible. Any concussion that might arise from a sudden fall of rock or coal, striking the lamp with a force

of six or eight feet per second, would pass it through the gauze of the lamp and explode it for a certainty, so that any experimenter with a safety-lamp should be well informed in the use of the anemometer for first to ascertain the velocity of the air-current, and should also understand the use of the barometer in each trial and in all parts of the mine.

Barometer Tests.

For barometric tests and the weight and expansion of heated air we give the following in grains per cubic foot and expansion in volume:

Degrees of Heat.	Weight of a cubic foot in grains..	The volume of air at 100 cubic feet..	Degrees of Heat.	Weight of a cubic foot in grains..	The volume of air at 100 cubic feet..
32	550	At 100	132	453	Increases to 121
42	539	Increases to 102	142	446	" 123
52	529	" 104	152	439	" 125
62	518	" 106	162	432	" 127
72	506	" 109	172	426	" 129
82	495	" 111	182	420	" 131
92	487	" 113	192	413	" 133
102	479	" 115	202	407	" 135
112	470	" 117	*212	401	" 137
122	461	" 119			

*Water boils at sea level at 212° Fahrenheit.

Calculations and deductions can be easily made and readily understood by referring to this table for temperatures, degrees of heat and bulk of volume.

Every person connected with mining, and having the management and superintendence of mines and employees, by right ought to thoroughly understand the use of the necessary instruments and the character and condition of the air in circulation, knowing full well that every life under his charge is at any moment subject to danger. He should be a person of good judgment, neither take from the one and give to the other but what is justly due to them; nor should he exercise any political or religious influence in any manner amongst his men, but *devote* his whole time and attention to the duties of his office. He should be thoroughly conversant with the mining law, and give its benefit to his miners. He should be a person who knew how to manage the colliery and treat with common respect those in his employ, not to be remiss in any part of his duty, or timid in its discharge, neither giving to any one what justly belonged to another; and where danger to life was clearly imminent then he should not hesitate to sacrifice worldly interest and protect life, for he must remember that his office under trying circumstances is of greater value than any gift earth could bestow.

TABLE *of air pressure in pounds avoirdupois per square foot of surface area in shafts at different depths and different degrees of temperature.—Hopton.*

DEGREES OF TEMPERATURE.	Depth, 120 feet.	Depth, 180 feet. lbs. wt.	Depth, 240 feet. Pounds.	Depth, 300 feet. Pounds.	Depth, 360 feet. Pounds.	Depth, 420 feet. Pounds.	Depth, 480 feet. Pounds.	Depth, 540 feet. Pounds.	Depth, 600 feet. Pounds.	Depth, 660 feet. Pounds.	Depth, 720 feet. Pounds.
32.....	9,710	14,565	19,421	24,276	29,131	33,986	43,697	48,552	53,407	58,262	63,118
40.....	9,550	14,332	19,109	23,887	28,664	33,442	42,996	47,774	52,551	57,551	62,106
50.....	9,367	14,054	18,734	23,717	28,101	32,784	42,152	46,835	51,519	56,202	60,886
60.....	9,187	13,780	18,373	22,960	27,560	32,152	41,330	45,933	50,526	55,119	59,712
70.....	9,013	13,510	18,026	22,532	27,030	31,545	40,558	45,064	49,574	54,077	58,584
80.....	8,846	13,268	17,691	22,114	26,537	30,960	39,806	44,228	48,656	53,074	57,497
90.....	8,684	13,027	17,369	21,711	26,054	30,096	39,080	43,423	47,763	52,107	56,449
100.....	8,529	12,794	17,058	21,323	25,887	29,859	38,381	42,646	46,911	51,173	55,440
110.....	8,379	12,569	16,758	20,948	25,138	29,327	37,707	41,896	46,086	50,276	54,463
120.....	8,236	12,352	16,496	20,586	24,704	28,821	37,055	41,176	45,296	49,407	53,525
130.....	8,095	12,142	16,189	20,237	24,284	28,392	36,426	40,474	44,521	48,569	52,616
140.....	7,959	11,939	15,919	19,999	23,870	27,859	35,818	39,793	43,778	47,758	51,738
150.....	7,829	11,743	15,658	19,572	23,487	27,401	35,230	39,145	43,059	46,978	50,888
160.....	7,702	11,554	15,405	19,256	23,107	26,958	34,661	38,512	42,363	46,215	50,066
170.....	7,580	11,370	15,160	18,950	22,740	26,530	34,110	37,900	41,269	45,480	49,270
180.....	7,461	11,192	14,923	18,653	22,381	26,115	33,576	37,307	41,037	44,768	48,499
190.....	7,346	11,020	14,693	18,360	22,039	25,712	33,059	36,732	40,405	44,078	47,759
200.....	7,235	10,852	14,470	18,087	21,705	25,322	32,557	36,173	39,792	43,410	47,027
210.....	7,127	10,690	14,239	17,817	21,380	24,944	32,070	35,634	39,197	42,761	46,324
212.....	7,106	10,658	14,211	17,761	21,317	24,869	31,973	35,527	39,080	42,633	46,186

RULE.—Multiply the section area of the shaft by the number of pounds, and strike off the three decimal figures, the remainder will be the weight in pounds, atmospheric pressure, in a shaft of a given depth, and temperature as above described; and will be found sufficiently accurate for practical purposes.

Atmospheric Experiments.

Careful experiments show that 459 cubic feet of air, at 0° or zero of Fahrenheit, the thermometer indicates 39.76 pounds. When the pressure is 30 inches of mercury, of a density due to 32°, a pressure equal to $14\frac{3}{4}$ pounds per square inch, which is the ordinary pressure of the atmosphere, but it only weighs one-thirtieth of this when the pressure is only one inch of mercury. And since 459 cubic feet of air at 0° expand exactly one cubic foot for each degree of heat added, we get the following rule to find the weight of air at any temperature and under any pressure:

Thus,
$$W=\frac{1.3253\times l}{459+t}$$

Where l = the inches height indicated by the barometer, and t = the temperature by the thermometer, at 38°, under a pressure of 30 inches of mercury, 100 cubic feet of air, as per table, weighs just eight pounds. If 225,176 cubic feet of air be produced per minute, the temperature in the downcast to be, say $43\frac{1}{2}$°, and the temperature in the upcast shaft to be 211° by the given rule. If the barometer be taken half way down the shaft, and it to show a pressure of $30\frac{1}{2}$ inches of mercury, the weight of a cubic foot of air, taking the average in the downcast shaft, would be .08044 pounds×900=72,539 pounds upon each square foot by its mere weight, the upcast air being lighter and only produced a pressure of 54,297 pounds per square foot, the difference of pressure in both columns of air is=18,099 pounds. In order to find the horse-power producing ventilation, we require to multiply this difference of pressure (18,099 pounds per square foot) by the number of cubic feet of air produced per minute, and divide the result by 33,000 pounds, or horse-power, which in this case will give a ventilating power, thus:

$$\frac{\text{Lbs.}\quad 18{,}099\times 225{,}176}{33{,}000}=122\tfrac{1}{2}\text{ horse power.}$$

Much valuable information may be gained from this method of calculation, and from the relation the inside and outside temperatures bear to each other, as when the temperatures are of the same degree of heat natural ventilation will cease, and artificial means must be applied to create a current; and the ventilating currents should be so arranged that each working panel should receive its proper proportion of fresh and pure air without stint, and so well directed up to the working face as to be effective in removing all noxious gases and vitiated air from the working men, and to be there conducted into exit courses to the surface, forced out by steam jet or furnace power, or drawn out by the section or exhaust fan. Upon good ventilation depends the health and safety of the workmen, and no valid reason can be truthfully adduced to excuse defective ventilation. In mines that generate large bodies of gases too strong a current is not so safe. The miner, in exploding a charge where fire-damp exists, should be certain that the locality was free from it, and should use touch-paper only to ignite it, as fire-damp will not, under any circumstance, take fire from a spark. Its character in this respect differs from powder, which resists the flame and unites with the spark, but explosive gas will ignite by a flash of powder; and therefore the act of blasting and discharging shots in dangerous air should be attended with great circumspection, and by the best practical men. The custom amongst miners is that each man discharges his own shots, but I am of opinion it would be much safer on all hands to employ a practical man or two in large extensive collieries for this purpose.

SAFETY LAMP TESTS.

INVENTORS OF SAFETY LAMPS.	Velocity in feet per second.....	Number of experiments.....	Actual results..	INVENTORS OF SAFETY LAMPS.	Velocity in feet per second.....	Number of experiments.....	Actual results..
First.				*Fourth.*			
Davy lamp	8	4	Exploded.	Davy	19½	3	Exploded.
Stephenson	8	10	Went out.	Stephenson	19½	6	Went out.
Clanny	8	5	Went out.	Clanny	19½	3	Went out.
Second.				*Fifth.*			
Davy	11½	2	Exploded.	Davy	25	1	Exploded.
Stephenson	11½	60	Still burning.	Stephenson	25	4	Went out.
Clanny	11½	6	Exploded.	Clanny	25	39	Still burning.
Third.				*Sixth.*			
Davy	14	3	Exploded.	Davy	34½	1	Exploded.
Stephenson	14	5	Went out.	Stephenson	34½	4	Exploded.
Clanny	14	3	Went out.	Clanny	34½	15	Still burning.

It will be understood by the foregoing trials that the lamp invented by Sir Humphrey Davy appears to be the most *sensitive* in its construction, and as such has become the favorite lamp with the best practical miners. The others are an excellent article in the hands of non-practical men and serves an excellent purpose.

Tonnage of the Philadelphia and Reading Coal and Iron Company's Collieries in 1875.

NAMES OF THEIR COLLIERIES.	Gross tons mined.	NAMES OF THEIR COLLIERIES.	Gross tons mined.
Schuylkill county.		*Schuylkill co.*—Con.	
1. East Big Mine Run	72,122	29. Preston, No. 1	8,220
2. Boston Run	39,085	30. Phœnix Park, No. 2	27,061
3. Elmwood	25,740	31. East Franklin	26,340
4. Ellengowan	53,985	32. Middle Creek Shaft	9,025
5. Knickerbocker	64,593	33. Brookside	68,547
6. Indian Ridge	98,569		
7. Mahanoy City	51,402	Total tons	1,201,484
8. Mahanoy, North	40,081		
9. Preston, No. 2	59,569	*Northumberl'd county.*	
10. Preston, Nos. 3 and 4	16,537	34. Meriam	86,630
11. Plank Ridge	81,737	35. Locust Spring	31,864
12. Tunnel	50,072	36. Alaska Shaft	21,076
13. Oakdale	31,279	37. Helfenstine	15,975
14. West Shenandoah	30,069	38. Franklin, No. 1	37,054
15. Anchor	19,662	39. Franklin, No. 2	43,516
16. Buckville	16,812		
17. Beechwood	44,772	Total tons	236,115
18. Forestville	33,728		
19. Glendower	24,322	*Columbia county.*	
20. Keystone	23,648	40. Locust Run	43,053
21. Mine Hill Gap	53,927	41. Locustdale	40,911
22. Pine Forest	26,910		
23. Pine Knot	2,202	Columbia	83,964
24. Richardson	4,907	Northumberland	236,115
25. Thomaston	41,104	Schuylkill	1,201,484
26. Eagle Hill	26,953		
27. Otto	35,694	Aggregate tons	1,521,563
28. Delaware Shafts	1,810		

Ventilation of Mines.

The gravity of the subject of correctly ventilating collieries that generate fire-damp gas, and noxious air and deleterious vapors recommends itself to the thinking public for a thorough practical solution. There needs be a more vigorous stand taken for destroying its influence than has been the case heretofore, as the drift and tunnel collieries are yielding to slope and shaft development, and consequently fire-damp gas becomes more and more increased, and far more difficult for removal, chiefly owing to the great depth and the system of working the mine in lifts and counter-lifts that it is next to impossible to keep these large excavations clear of stand gas, impure air and powder smoke after the first round of shots are fired off in the morning. To depend upon the action of a 20-horse power exhaust fan to execute the work of ventilating a large mine is simply out of the question to do so safely. The owners of collieries to avail themselves of the benefit of a steam fan generally do so for the purpose of supplying fresh air to their miners, but it is impossible for the single fan to supply fresh air and expel the noxious gases that pervade every conceivable aperture in a mine.

Although the velocity of the air currents may appear satisfactory in quantity their condition may be so loaded with fire-damp and noxious gases that the safety and health of the men may be endangered, and even the safety-lamp may not be much of a security when used in such rapid currents of vitiated air. The discharge of shots will displace the fire-damp that may be held back by the passing current, and thus become mingled with it in its exit outward, where it may come in contact with the lamps and explode. Every mine boss is aware of this circumstance, and does what he can to prevent explosions, while he cannot control the large volumes of deleterious air in circulation.

The safe remedy then would be in this event is to erect two separate fans, one of which to be located at a point as near the working places as could be, and all the fresh air introduced for ventilating the working places to be controled by the action of this fan; while the other suction fan should be situated at a locality that would reverse the air currents in the old abandoned or idle works and expel it therefrom; both these air currents to be made so distinct from each other in their courses that the inlet air could not possibly come in contact with the outlet air, and in this manner the most dangerous mine could be made comparatively safe for men to work in. The cost of securing a colliery in this manner is but trifling in comparison to the great good that would be realized by the operation of the outlet fan. In collieries that are well ventilated good and intelligent miners are always in full supply, while in badly ventilated collieries the case is the reverse.

We had 42 fire-damp explosions in the district collieries during the year, while eleven of these explosions occurred at one colliery, and where the velocity and volume of air that had been kept in circulation would apparently be sufficient to effect a correct ventilation, but the fault rested in the fact that all the accumulated gases and the inlet air circulated in the same current on its intake and exit to the outcast fan. The strong currents of air circulating in the air passages in a mine will check back the gases that pervade the still open crevices and idle goafs, in the same manner that strong currents of water would hold back small streams or stagnant pools, so in like manner is the gases pent up until the space becomes overcharged, and then it will mingle with the passing current and be carried along with it. The miner may not be aware of this enemy being in proximity to his lamp, where he selected a location for its greater security. But some cause may arise to necessitate its removal, it may be the miner may light his pipe

with it or give it a careless swing, when it comes in contact with the surcharged gas current, and cause the lamp to explode. Even the locked lamp is not safe unless it be carefully handled, because should it fall by accident the momentum created by its weight on its passage through the air would force the air through the gauze of the lamp, and would occasion an explosion. In firing shots where fire-damp is known to be mingled with the air is another prolific source of accidents, the locality where shots or blasts is set off ought to be thoroughly freed from gas first before the shots are set off, for when the powder explodes the fire or flame is thrown up to the roof, where it is sure to come in contact with the fire-damp gas that always floats upon the surface of the common air and is sure to explode by the powder flame.

To secure miners against this class of accidents, it is only necessary to establish proper rules for the government of the mines and see that they are properly enforced. The mine boss and fire boss to make a thorough inspection of the mine in the morning, and as often in the course of the day as to insure the safety of his men. These mine rules should be framed and posted in several public places in the mine, as is necessary, and any neglect on the part of the men should at once be punished by expulsion, or any person using a safety-lamp which needed repairs or cleansing should be expelled, or persons discharging shots in dangerous places, and not notifying the persons in charge of the mine, should likewise be expelled. But so long as negligence and carelessness are permitted to be practiced in these collieries that generate gases largely, so long will such coal mine or colliery be the scene of disasters. But often men are so circumstanced that whatever dangers and irregularity may exist in those collieries they are, perforce, compelled to work in them in order to earn a subsistence for their families, they at the same time being fully aware of the imminence of the dangers that surround them, and of which they are the unwilling witnesses.

Casualties in Coal Mines.

If a proper compliance with the wise provisions of the mining law had been practiced by the employers, and a careful regard was had by the employees themselves for each other's safety, and cultivate more caution than they generally do regarding the regulations of mining, by exercising better judgment and patience, no doubt but very many accidents would be prevented, especially in those deep mines that generate noxious gases largely, as will be seen by the following figures: During the year just closed there had been 146 falls of coal, 50 explosions of fire-damp, 33 falls of rock and slate roof, 38 explosions of powder and 48 accidents by mine wagons. Many of these accidents are known to be the result of carelessness in not enforcing the proper mine regulations and a non-regard to the spirit of the mining law; and many persons mismanage their work, and may temporary succeed, but the end will surely result in a calamity.

Gases—Their Condition and Character.

Carbonic Oxide.—This gas is the result of burning carburetted hydrogen with an imperfect supply of air, and miners give it the appellation of choke-damp. The blue flame that flickers over the common coal fire is caused by the combustion of carbonic oxide. The miner may by some way escape an explosion, but he cannot escape being suffocated by the after-damp that follows an explosion and its deleterious consequences.

Black-Damp.—Carbonic acid gas is colorless, and yields an acid taste and a slight pungent oder, and is nearly double the weight of common air;

A DIAGRAM OF THE CONSTITUENTS OF CARBURETTED HYDROGEN GAS & ATMOSPHERIC AIR.

Gases. Explanation of the symbols, their relative weight and Volumes by C.W. Williams Liverpool 1841.

Oxygen 8

Carbon 6

Nitrogen 14

Hydrogen 1

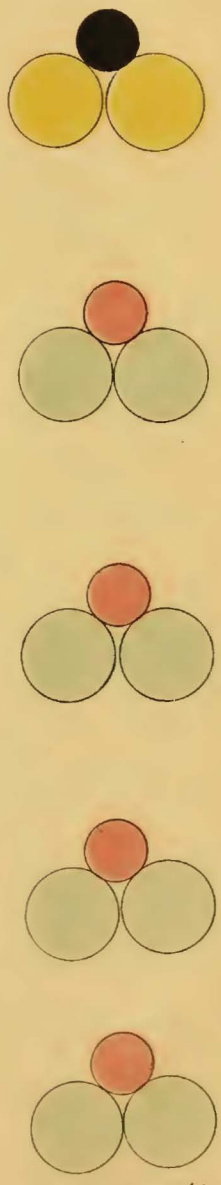
Carburetted hydrogen gas 8

Carbonic Acid 22

Vapor of steam 9

Atmospheric air 36

Constituents of Carburetted hydrogen gas & Atmospheric air.



This diagram illustrates the combustion of the gaseous properties of coal and the modes by which it may be effected after as well as before combustion. C.W. Williams. Liverpool 1841.

but when subjected to a pressure of 38½ atmospheres it is condensed into a colorless fluid. It extinguishes flame and is fatal to life, and when diluted largely with common air it becomes a highly narcotic poison. Fatal results arise from entering old mines, wells or vats. To determine its locality it is best to lower down a lighted lamp, which will become extinguished by its presence. In 1800 Mr. Woodhouse determined the true character of this gas.

Carbonous Oxide is still another deletirious gas, is colorless and emits a suffocating oder. It requires forty times its volume of water for its solution; it is readily combustible; its characteristics are a blue flame, it unites with clorine, and forms phosgene gas, it is totally irrespirable, it being an active deadly poison, one per cent. mingled with common air will prove fatal. It is capable of passing through heated cast metal, stoves, furnaces, &c., and is assumed to be a propagator of diseases in many instances. It requires good ventilation to arrest its noxious influence.

Hydo-sulphuric Acid Gas.—When sulphur and hydrogen are set free together they form a colorless gas, giving off the oder of rotten eggs. It is produced by the putrification of organic substances containing sulphur, and is exceeding deleterious when respired. It exists in mines, mingled with other deleterious gases, rotten timber submerged in water gives off large quantities of this gas and renders the water nauseous; 1-1500th of this gas destroys small birds, 1-800th destroys dogs, and 1-120th destroys a horse.—*Brande.*

Sulphurous Acid.—When burned in air it unites with oxygen, forming a colorless gas of a peculiar disagreeable taste, and a most suffocating smell. It extinguishes a light, and is respirable, but with great difficulty, and has the quality of that with which it comes into contact. This gas is also generated in coal mines.

Hydrogen.—Hydrogen gas occurs free in volcanic gases, and according to Bunsen forms forty-five per cent. of it. It is a colorless, tasteless and odorless gas, it is the lightest known form of matter, being 14 times lighter than air, and 11,000 times lighter than water. It diffuses greater than any other gas, its refractive power on light is very remarkable, being 6½ times that of air. It is combustible at 500°, and readily combines with the oxygen of the air. Its flame is of a pale white color. It does not, of itself, support combustion. A lighted lamp in it is soon extinguished, and it is fatal to life. This gas is the white-damp of the coal mines.—*Graham.*

Oxygen Gas.—This is the most important of all elements in nature, and enters into all the chemical changes and in most of them it acts the prominent part. Its condition is a gas resembling air, which is only a mixture of many gases. Its characteristics is a transparent, colorless, tasteless, inodorous gas; the term oxygen signifies air former. It consists of one-fifth of the weight of the atmosphere, eight-ninths of the ocean and all aqueous bodies, and nearly one-half the crust of the globe, and unites with all the elements forming a compound termed oxides. Its combining qualities is termed oxidation and its separating qualities is termed deoxidation. It is a principle supporter of combustion, and all substances that burn in air burns in pure oxygen gas. The very least spark upon a wick will cause it to explode, so will iron ware burn in it, and phosphorus will produce a light so brilliant in it that the eye cannot endure it. Atmospheric oxygen is diluted with four times its bulk of hydrogen, which, if taken alone, extinguishes fire altogether, but when combustion takes place the hydrogen is converted into a water vapor and carbonic acid is set free, but when the burning body contains a disproportionate amount of carbon, as turpentine, more of it is set free than the oxygen can consume and the flame smokes,

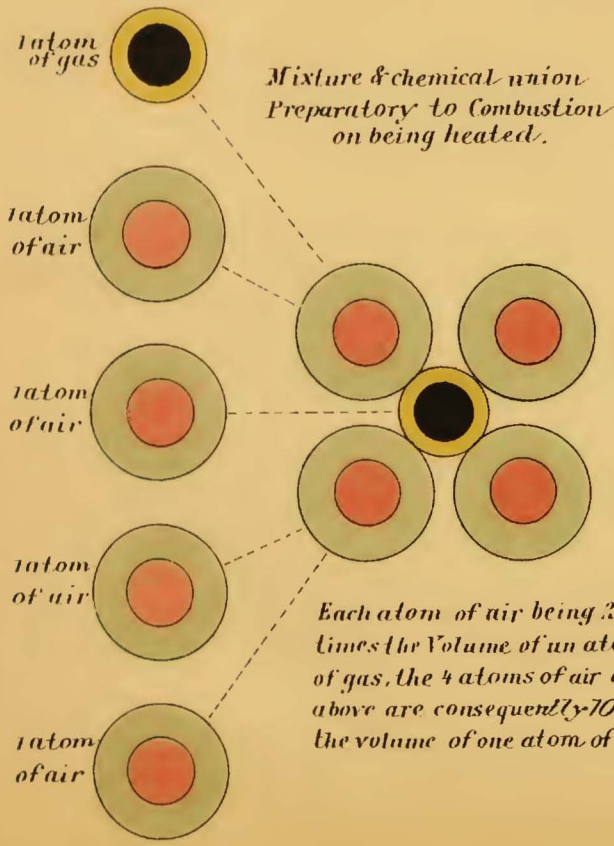
but when the hydrogen is in excess, as in alcohol, there is much heat, little light and no smoke. When united these gases correct their defects and form the basis of "burning mixtures." Oxygen is life; when oxygen is consumed by respiration or temperature carbon remains and death is the consequent result.

Nitrogen Gas.—This is a most deleterious gas. After respiration, and washed with lime water, it will not support respiration or combustion. It constitutes four-fifths of the atmosphere; it combines with oxygen and numerous acids, and forms a component part of many vegetable and animal substances; it is odorless, colorless and tasteless gas, slightly lighter than air, and never being liquified by cold or pressure. It is not itself combustible, it is irrespirable, though it exerts no poisonous effect upon the tissues. Its characteristics is suffocation, though so far different when free that the compounds formed of nitrogen are amongst the most energetic known. The corrosive nitric acid, the nitro-glycerine, the poisonous prussic acid, and the alkaloids, all contain nitrogen. In mining nomenclature it gets the name of stone-damp.

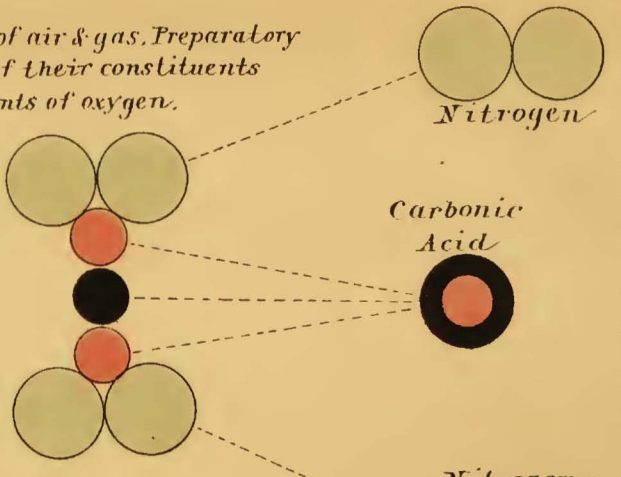
Sulphur—Is known to combine in union with most specimens of coal gas and from stagnant pools. It is mined in many places from a blue clay formation; it has an extensive affinity to combine with metals; it melts at 230° to a yellow liquid and at 450° changes to a molasses color substance, which, if quenched in cold water, becomes elastic like India rubber, but from this altothropic condition it gradually returns to its original state.—*Youmans.*

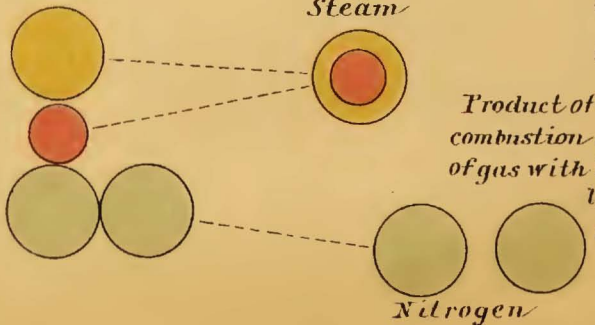
Single atom of air & gas being the Compounds of the constituents as in the preceding Column

State of decomposition of air & gas. Preparatory to their chemical union of their constituents with their equivalents of oxygen.



Each atom of air being 2½ times the Volume of an atom of gas, the 4 atoms of air as above are consequently 10 times the volume of one atom of the gas.





Product of the combustion of one atom of gas with its equivalent of Atmospheric Air.

The foregoing diagram exhibits the chemical changes that these gases undergo in the act of combustion and changing their unity, to their former elements, either of which change is destructive to life.

Weight of Coal, in tons of 2,240 pounds, per acre, from one foot in thickness to forty feet thick—specific gravity, 1.25.

Feet.	Tons.	1 inch.	2 inches.	3 inches.	4 inches.	5 inches.	6 inches.	7 inches.	8 inches.	9 inches.	10 inches.	11 inches.
1.....	1,519.25	1,645.85	1,772.45	1,899.46	2,025.66	2,152.27	2,279.87	2,403.48	2,532.08	2,658.69	2,785.29	2,911.89
2.....	3,038.50	3,165.10	3,291.70	3,418.31	3,544.91	3,671.52	3,798.12	3,924.73	4,051.33	4,177.94	4,304.54	4,431.14
3.....	4,557.75	4,684.35	4,810.93	4,937.56	5,064.16	5,190.77	5,317.37	5,443.98	5,570.58	5,697.19	5,823.79	5,950.39
4.....	6,077.00	6,203.60	6,330.20	6,456.81	6,583.41	6,710.02	6,836.62	6,963.23	7,089.83	7,216.44	7,343.04	7,469.64
5.....	7,596.25	7,722.85	7,849.45	7,976.06	8,102.66	8,229.27	8,355.87	8,482.48	8,609.08	8,735.69	8,862.29	8,988.89
6.....	9,115.51	9,242.11	9,368.71	9,495.32	9,621.92	9,748.53	9,875.13	10,001.74	10,128.34	10,254.95	10,381.55	10,508.15
7.....	10,634.76	10,761.26	10,887.96	11,014.57	11,141.17	11,267.78	11,394.38	11,520.99	11,647.59	11,774.20	11,900.80	12,027.40
8.....	12,154.01	12,280.61	12,407.21	12,533.82	12,660.42	12,787.03	12,913.63	13,040.24	13,166.84	13,293.45	13,420.05	13,546.65
9.....	13,673.27	13,799.87	13,926.47	14,053.08	14,179.68	14,306.29	14,432.89	14,559.50	14,686.10	14,812.71	14,939.81	15,065.91
10.....	15,192.52	15,319.12	15,445.72	15,572.33	15,698.93	15,825.54	15,952.14	16,078.75	16,205.35	16,331.96	16,458.56	16,585 16
11.....	16,711.77	16,838.37	16,964.97	17,091.58	17,218.18	17,344.79	17,471.39	17,598.00	17,724.60	17,851.21	17,977.81	18,104.41
12.....	18,231.02	18,357.62	18,484.22	18,610.83	18,737.43	18,864.04	18,990.64	19,117.25	19,243.85	19,370.46	19,497.06	19,623.66
20.....	30,385.04	30,638.24	30,891.44	31,144.66	31,397.86	31,651.08	31,904.28	32,157.50	32,410.70	32,663.92	32,919.12	33,170.32
25.....	37,981.29	38,361.09	38,740.89	39,120.72	39,499.52	39,880.35	40,260.15	40,639.98	41,019.78	41,399.61	41,781.41	42,160.21
30.....	45,577.56	45,958.56	46,337.16	46,716.99	47,094.79	47,476.62	49,856.42	48,236.25	48,616.05	48,995.88	49,375.68	49,754.48
35.....	53,173.81	53,681.41	54,186.61	54,693.05	55,197.45	56,705.99	56,212.29	56,718.73	57,225.13	57,731.57	58,237.97	58,743.37
40.....	60,770.08	61,276.48	61,782.88	62,289.32	63,795.72	63,302.16	63,808.56	64,315.05	64,820.40	65,327.84	65,834.24	66,340.64

Basis of Wages in the Mines for 1875.

The average wages for miners and mine labor upon the average price of coal per ton at Port Carbon during the year, taken as a general standard for Schuylkill county, the average number of days worked by the miners is estimated at 28 weeks during the year, the basis being fixed at $2 50 per ton, giving the miner per week, $——; the laborer in the mine, $——; and the outside laborer, $—— per week. The average price of coal for the year round is based at —— per ton.

To a miner per week, $——; he earns for the year round ..... $———
To a laborer per week, $——; he earns for the year round..... ———
Outside labor per week, $——; he earns for the year round..... ———

Gross earnings for the miner the whole year, estimated..... $———
Average expenses for the same, estimated..... ———
Net balance to his account for the year, estimated ..... ———

Gross earnings for a laborer for the year, estimated..... $———
Average expenses for the same, estimated..... ———
Net balance to his account for the year, estimated..... ... ———

Gross earnings of outside laborer for the year, estimated..... $———
Average expenses for the same, estimated..... ———
Net balance to his account for the year, estimated..... ———

Net balance to a miner for a full year's work would be..... $———
Net balance to a mine laborer for a full year's work would be.... ———
Net balance to outside laborer for a full year's work would be.... ———

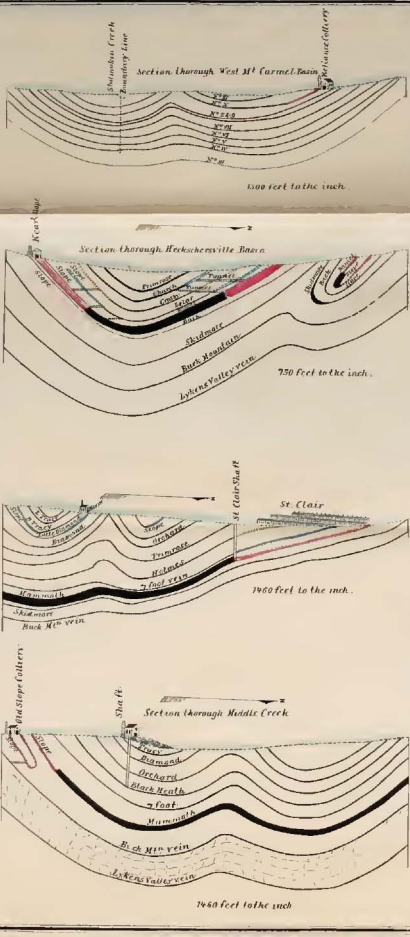
The loss, by the condition of the coal trade, to the laboring classes is very great.

The colliery is now in active operation, the yield is large in quantity and excellent in quality, and the territory very extensive. The D or Skidmore and Lykens Valley veins are not yet penetrated, they underly the E or Mammoth vein.

The State of the Coal Trade.

The coal shipments from Dauphin, Columbia and Northumberland collieries continued steady all through the season without any hindrance from strikes and consequently commanded a large custom at home and abroad at a reasonable profit, while the collieries of Schuylkill county were practically idle until the 23d of June. Neither repairs or dead work had been permitted during this time, the miners holding out a hope that as the season advanced the trade of a necessity would demand a resumption, but in this they were disappointed, and not until the force of necessity overruled the case did resumption take place. The Philadelphia and Reading Coal and Iron Company taking the matter of a general resumption in their own hands, and at their own terms did it come to an end. The miners had been evidently discouraged, accepted the operators terms with a becoming dignity, but were well nigh exhausted.

The mines were at once manned for work, and in doing so the conditions of the mines in many respects were not as safe as should be. The anxiety of the men to resume work and make amends for lost time was very apparent, and consequently they were not so circumspect about their safety as should be. While many of the miners were absent at work elsewhere their places were supplied by unskilled or new men. A careful review of the lists of casualties will warrant this view of the case, as the accidents are nearly fourfold greater in the latter months of the year, even in the counties where the work had been continued, as will be seen by the following statement:


Shenandoah Creek
Boundary Line
Helvetia Colliery
Section thorough West Mt Carmel Basin
No 9
No 8 A
No 8
No 7
No 6
No 5
1500 feet to the inch.
Section thorough Hecksherville Basin
Coal Slope
Slope
Diamond
Orchard
Black Heath
7 foot
Mammoth
Shadmore
Buck Mountain
Lykens Valley vein
750 feet to the inch.
St Clair Shaft
St Clair
Slope
Diamond
Orchard
Primrose
Holmes
7 foot vein
Mammoth
Shadmore
Buck Mtn vein
1960 feet to the inch.
Mid Slope Colliery
Shaft
Section thorough Huddle Creek
Slope
Diamond
Orchard
Black Heath
7 foot
Mammoth
Buck Mtn vein
Lykens Valley vein
1960 feet to the inch

MINE INSPECTORS.

The term of office of Frank Schmeltzer, Inspector of Mines of Pottsville district, and of John Eltringham, Inspector of Mines of Ashland district, terminated on the twenty-first day of September, ultimo, after five years of arduous service, discharging their duty with commendable zeal and diligence, promoting the interest and effecting the safety of the miners in their respective districts, having in view the establishing of a more practical system of mining in high dipping coal seams, a better method of ventilation of deep and extensive mines, to effect a safer mode of ingress and egress for persons employed in mines, and to counsel a better feeling among the employers and the employed, which would harmonize the local interests and social relations of both parties, which would result to the benefit of society.

The care and vigilance exercised by them in discharging their duty soon became apparent to all. And their counsels had an important bearing, and generally was attended with success; and many regretted their retirement from public duty. When the necessity of their successors to the vacant positions had become public a large representation of candidates came forward, who, after a most rigid but impartial examination, in a session lasting several days, the board of examiners declared Messrs. Sampson Parton, of Mount Carmel, Northumberland county, and Samuel Gay, of Gilberton, in Schuylkill county, to be the best qualified persons for discharging the duties of the vacant offices and successors to the late inspectors, and thereupon certified their action in the matter to his Excellency John F. Hartranft, Governor of the Commonwealth, recommending their appointment, who granted their commission and forthwith assigned them to new districts that had been re-organized by the said examining board, to wit:

Mr. Parton was assigned to the first or Pottsville district, now comprising all the collieries in Schuylkill county that lie south of the Broad mountain and those in New Boston basin, except Brookside colliery, situated in the western limits of the county, near Dauphin county line, aggregating some seventy collieries in all, which affords employment to some eight thousand hands.

Mr. Gay was assigned to the second or Shenandoah district, which comprises all the collieries north of the Broad mountain, in Schuylkill county, that are located east of the eastern limits of the town line of Girardsville, and the Honey Brook basin collieries, which aggregates some seventy collieries in all, affording employment to probably twelve thousand hands. The coal tonnage of this district will equal that of the other two districts.

Mr. William Hemingray, Inspector of Shamokin district mines, had been assigned to a district which at present comprises all the collieries in Northumberland, Columbia and Dauphin counties, including all the collieries north of Broad mountain, in Schuylkill county, that are located west of the eastern limits of the town of Girardsville, and including the Brookside colliery, which will aggregate some seventy collieries of all classes, that will afford employment to some nine thousand men.

Although the territory so districted would appear to be unevenly divided the number of collieries allotted to each are nearly even, but the distance to travel over is quite the reverse, consequently involving a larger expense and a severity of duty which will be, to a certain extent, counterbalanced by the greater number of persons employed in the second district and its increased tonnage of coal.

The new officers, with good fortune, are competent men, thoroughly aware of the responsibility that rests on the faithful discharge of their

duty, having a proper practical knowledge of their work, are ripe in years and understanding, that few could be better qualified than they are. The examining board exercised sound judgment in their selection, by giving the miners the benefit of talent and competency rather than pander to partiality and discrimination, that often follow in the wake of doners of official position.

The candidates for the position of inspectors of mines were men of excellent ability and stood very high in their examination, which was indeed severe and just. Many of them acquitted themselves with an honorable record before the examining board.

Rules and regulations for the government of the workmen employed at the collieries of the Philadelphia and Reading Coal and Iron Company in 1875.

I. At any time between the hours of six and seven o'clock in the morning empty wagons will be furnished for the purpose of letting to the bottom of all shafts and slopes the persons employed in them.

II. No empty wagons will be furnished either for the purpose of hoisting or letting down men between the hours of 7 A. M. and 12 M., and between the hours of 1 and 5:30 P. M., unless by special instructions of the inside foreman. The engineers and top and bottom men will be held responsible for the carrying out this rule.

III. All persons employed by the day, either inside or outside, are expected to work ten hours for a day's pay, or fifty-eight hours per week for a week's pay. Any persons working less than this will receive wages proportionate for the time worked. The same rule to apply in all cases where overtime is worked, unless by special agreement with the mining superintendent.

IV. In all workings where there is fire-damp evolved, and naked lights used, no person or persons other than the inside foreman and fire boss must pass the first check-door without the consent of the fire boss. Where nothing but locked safety lamps are used no person other than the inside foreman or fire boss will enter any of the workings until permitted to do so by the fire boss.

V. All safety lamps must be handed into the lamp-house each evening for inspection and repairs. Persons using safety lamps will be charged with the cost of repairing when ordinary care has not been exercised in their protection.

VI. Persons not employed at the colliery are positively forbidden from speaking to, or in any way interfering with, the employees during working hours.

VII. All the rules and regulations of the ventilation laws to be fully enforced by the bosses and workmen.

VIII. No workman is to be discharged except for incompetency, bad workmanship, misconduct, drunkenness, or other good cause given by him. By order of the superintendent of the company's coal mines and collieries.

The foregoing rules and regulations are conspicuously posted at the company's collieries, warning their employees of the duty required of them to observe and obey, and the compliance to which the company's agents strictly enforce, which strongly tends to diminish accidents in and about their collieries.

I give this information for effect, hoping it may come to the notice of other employers, who may profit by this example and still aid in checking the injuries that so often arises from non-compliance with the wise admonitions pointed out in the ventilation law.

Plate No. 5.

Showing a profile drawing of the P. R.C & I. Co's Alaska Shaft West of Mount Carmel in North'd County Penna.

By General Henry Pleasants, Chief Eng'r & Superintendent.

SECTION OF THE PHILADELPHIA & READING COAL & IRON CO'S.

MOUNT CARMEL SHAFT.

Scale 60 feet per Inch.

	Thickness of Strata		Distance from Top of Shaft	
	Ft.	In.	Ft.	In.
Surface Wash	7		12	
Sandstone	16		28	
Dark Slate	12	6	40	6
Coal poor	2	8	43	
Slate		4	44	
Coal good	1	6	45	8 mts
Blue Slate	21	7	67	3
Gray Rock	44	4	111	7
Rough Coal	1	3	113	10
Slate		10	114	8
Rough Coal	1	8	115	4
Hard Slate	8		123	4
Blue Slate	29		152	4
Slate	3		155	4
Coal & Bone	3	6	158	10
Gray Rock	106	2	265	
Mammoth Vein	20		285	
	127		412	
Skidmore Vein			413	

DEMAND FOR MINING DEVELOPMENTS.

The characteristic necessity for developing deep mines, like all other industries, necessitated the substitution of steam machinery for manual labor, and during the last few years has brought into market a large number of drilling machines, amongst which, however, is the Diamond drill. The damage done to a mine by using steam power for this purpose was very great upon the timber and structure of the locality, therefore a demand for air-compressors had sprung up, and wholly answers the purpose so admirably that all other systems have given way to its march. It is found that air can be conducted any distance, and through any temperature, without condensation, and with much less leakage than steam; and instead of it having to be brought out of the mine in pipes, like steam, it is used as a ventilator, and practically cools the locality.

Some trouble is experienced in winter from freezing vapor, and even the machine when working. This vapor has also made it impossible, so far, as to use compressed air expansively to any large extent, as steam is worked with such excellent results for economy, because the temperature of the air decreases so much in expanding that the water vapor contained in it condenses and freezes up the machinery.

It is, therefore, of the greatest importance that the air should be perfectly dry, but this is difficult to obtain, as the great heat generated in the compressor during the act of compression necessitates a constant artificial cooling of the compressing cylinder, which has been done by injecting a stream of water into the cylinder at each stroke, or keeping a large quantity of water working to and fro in it. In order to obviate those difficulties, Captain John Ericsson constructed a compressor, with open upright top brass pump cylinders, immersed in a bath of water, which washes the inside walls of the cylinder at every stroke, with water lying on the pump buckets, without ever allowing the water to come in contact with the compressed and heated air.

The power required to compress air is considerable, making it a rather expensive motor, and should be made as economical as possible; and this is accomplished by attaching to the large engines found at the collieries for pumping and hoisting than by a small separate cylinder, working without expansion. Wherever possible water is utilized. To avoid loss from the continuous running of the compressor when the drills, &c., may be stopped, a relief valve is made, which is set to any determined pressure, and opens a relief post from the pumps into the atmosphere as soon as that pressure is exceeded in reservoir and pipe, and this allows the pumps to run without accumulating pressure or consuming power.

Compressed air in a dry cylinder does not obviate the trouble with condensed water completely, as the vapor suspended in the atmospheric air, when taken in, is much more than can be held suspended in the diminished volume after compression, and after the air is cooled down again to common temperature.

To remove this vapor in the atmosphere a condenser is provided for cooling the compressed air completely, and depositing and running off the condensed water before the air enters the pipes. The great shafts of the Philadelphia and Reading coal and iron company at Pottsville, in Schuylkill county, the sinking of which was successfully accomplished with the use of compressed air and the Diamond drill. The result obtained from this source is highly satisfactory. The company succeeded in reaching the E or Mammoth vein in these shafts at a depth of 1,980 feet, besides all the overlying veins. The Primrose vein was found at a depth of 1,600 feet in

10 feet of excellent coal, and from this level the company are driving tunnels northward to reach the E or Mammoth vein on its south dip; and, besides, they then will, in connection with mining the Mammoth coal, mine the coal of the overlying veins also, which will, when in full operation, aggregate a production of —— tons.

The improvements and machinery used will far exceed anything of the kind ever erected in this country before. The shafts are a success in their style and finish, and the community take a great pride and interest in this great undertaking. This enterprise has been committed to the superintendency of General Henry Pleasants, who is chief engineer and general superintendent for the company. He has, in the execution and development of this great undertaking, given additional proof of his ability as a clear, practical officer.

It is estimated by competent authority that in the course of four years hence these twin shafts will be sufficiently extended and developed, that it will give employment to some five or six hundred men, and produce some 2,500 tons of coal daily.

Ventilation Law of 1870.

Section 1. *Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same*, That the owner or agent of every anthracite coal mine or colliery shall make, or cause to be made, an accurate map or plan of the workings of such coal mine or colliery on a scale of one hundred feet to the inch, and when there is more than one seam of coal worked in said coal mine or colliery the map or plan shall exhibit the workings in each seam of coal, and shall state the general inclination of the strata with any material deflection therein in said workings, and the boundary lines of the lands of said coal mines or colliery, a true copy of which map or plan the said owner or agent shall deposit with the inspector of coal mines, and collieries for the district in which the coal mine or colliery is situated, within four months from the passage of this act, and one copy shall be kept at the office at each colliery; and the said owner or agent shall furnish to the inspector aforesaid on the first day of January and July in every year hereafter a statement or map or plan of the progress of the workings of such coal mine or colliery during the year past up to date, to enable the inspector to mark the same upon the map or plan of the coal mine or colliery furnished him and deposited with said inspector as hereinbefore provided for; and when any coal mine or colliery is worked out preparatory to being abandoned, when any level or left thereof is being finished with a view and for the purpose of being abandoned, or when any of the pillars therein are to be removed, the owner or agent of such coal mine or colliery shall have the map or plan thereof furnished as hereinbefore provided, or such portions thereof as the case may require, carefully verified; and notice shall be given to the inspector of the coal mines and collieries for the district, in writing, of the purpose to abandon or remove the pillars, as the case may be.

Section 2. That whenever the owner or agent of any coal mine or colliery shall neglect or refuse or from any cause fail for the period of two months to furnish to the inspector the map or plan of, or the addition thereto provided for in the first section of this act, or if the inspector finds or has reason to believe that any plan or map of any coal mine or colliery furnished him under the provisions of this act is materially inaccurate or imperfect, he is hereby authorized to cause an accurate map or plan of the actual workings of such coal mine or colliery to be made at the expense

of the owner thereof, the cost of which shall be recoverable by law as other debts are from said owner.

SECTION 3. That four months from and after the passage of this act it shall not be lawful for the owner or agent of any anthracite coal mine or colliery worked by or through a shaft or slope to employ any person in working within such coal mine or colliery, or to permit any person to be in such coal mine or colliery for the purpose of working therein, unless they are in communication with every seam or stratum of coal worked in such coal mine or colliery, for the time being at work at least two shafts or slopes or outlets separated by natural strata of not less than one hundred and fifty feet in breadth, by which shafts, slopes or outlets distinct means of ingress and egress are always available for the persons employed in the coal mine or colliery; but it shall not be necessary for the two shafts, slopes or outlets to belong to the same coal mine or colliery if the persons therein employed have ready and available means of ingress and egress by not less than two shafts, slopes or outlets, one or more of which may belong to another coal mine or colliery: *Provided*, That a second opening can be had through coal, but that if any tunnel or shaft will be required work upon the same to commence immediately after the passage of this act and continue until its final completion, with not less than three shifts in each twenty-four hours and as many hands to be employed as can be put to work to advantage, the inspector to be the judge as to the least number of hands engaged per shift. This section shall not apply to opening a new coal mine or colliery, nor to any working for the purpose of making a communication between two or more shafts, slopes or outlets, so long as not more than twenty persons are employed at any one time in said new mine or working; and the term "owner," used in this act, shall mean the immediate proprietor, lessee, or occupier, of a coal mine or colliery, or of any part thereof, and the term "agent" shall mean any person having, on behalf of the owner, the care or direction of a coal mine, or colliery, or of any part thereof.

SECTION 4. The owner or agent of any coal mine or colliery to which there is only one shaft, slope or outlet may petition the court of common pleas in and for the county in which such coal mine or colliery is situated, which said court is hereby empowered to act in the premises, setting forth that in consequence of intervening lands between the working of his coal mine or colliery and the most practicable point or the only practicable point, as the case may be, at which to make or bring to the surface from the working of his mine he is unable to make an additional shaft, slope or outlet in accordance with the requirements of this act, whereupon the court may make an order of reference, and appoint three disinterested persons, residents of the county, viewers, one or more of whom shall be a practical mining engineer, all of whom, after being sworn to a faithful discharge of their duties, shall view and examine the premises and determine as to whether the owner ought or ought not, under the circumstances, to have the privilege of making an additional outlet through or upon any intervening lands, as the case may require, and report, in writing, to the next term of the court, which report shall be entered and filed of record. If the finding of the viewers, or any two of them, is in favor of the owner of such coal mine or colliery, he may make an additional shaft, slope or outlet under, through or upon intervening lands, as may be determined upon and provided for by the award. If the finding of the viewers is against the owner, or if no award be made by reason of any default or neglect on the part of the owner, he shall be bound to comply with the provisions of this act in the same manner as if this section had not been enacted. In case the said owner or agent

desires to and claims that he ought to make an additional opening under, through or upon any adjoining or intervening lands to meet the requirements of this act, for the ingress or egress of the men employed in his or their coal mine or colliery, he or they shall make a statement of the facts in the petition, with a survey setting forth the point of commencement and the point of termination of the proposed outlet which he or they, their engineers, agents and artists may enter upon said intervening lands and survey and mark as he or they shall find it proper to adopt for such additional outlet, doing no damage to the property explored; and the viewers shall state in their report what damage will be sustained by the owner or owners of the intervening lands by the opening, constructing and using of the outlet, and if the report is not appealed from it shall be liable to be confirmed or rejected by said court as to right and justice shall appertain; and any further and all proceedings in relation thereto shall be in conformity with like proceedings as in the case of a lateral railroad across or under intervening lands, under the act in relation to lateral railroads, approved the fifth day of May, 1832, and the supplements thereto, so far as the provisions of the same are applicable hereto; and the notices to the owner of intervening lands of the intention to apply for the privilege of making an outlet and meeting of the viewers shall be given, and the costs of the case shall be paid as provided in the said act of the fifth of May, 1832, and the supplement thereto.

Section 5. Any of the courts of law or equity of this Commonwealth having jurisdiction where the coal mine or colliery proceeded against is situated, upon application of the inspector of coal mines and collieries of the proper district, acting in behalf of the Commonwealth, shall prohibit, by injunction or otherwise, the working of any mine in which any person is employed in working or is permitted to be for the purpose of working in contravention of the provisions of this act, and may award such costs in the matter of the injunction or other proceedings as the court may think just, but this section shall be without prejudice to any other remedy permitted by law for enforcing the provisions of this act

Section 6. The owner, lessee, operator or agent of every coal mine or colliery shall erect or provide, at or near the mouth or entrance to such mine, and maintain the same at all times where men are employed in such mine, a suitable building or buildings, supplied with soft water, and properly lighted and warmed for the use of the men employed in such mine to wash and change their clothes when entering the mine and when returning therefrom.

Section 7. The owners or agents of every coal mine or colliery shall provide and establish for every such coal mine or colliery an adequate amount of ventilation, and not less than fifty-five cubic feet per second of pure air, or thirty-three hundred cubic feet per minute for every fifty men at work in such mine, and as much more as circumstances may require, which shall be circulated through to the face of each and every working place throughout the entire mine to dilute and render harmless and expel therefrom the noxious, poisonous gases to such an extent that the entire mine shall be in a fit state for men to work therein, and be free from danger to the health and lives of the men by reason of said noxious and poisonous gases, and all workings shall be kept clear of standing gas. The ventilation may be produced by using blowing engines, air pumps, forcing or suction fans of sufficient capacity and power, or other suitable appliances as to produce and insure constantly an abundant supply of fresh air throughout the entire mine, but in no case shall a furnace be used in the mine where the coal breaker and shute buildings are built directly over and covering the top of

the shaft for the purpose of producing a hot up-cast of air; and there shall be an in-take airway of not less than twenty square feet area, and the return airway shall not be less than twenty-five square feet.

SECTION 8. The better to secure the ventilation of every coal mine and colliery, and provide for the health and safety of the men employed therein, otherwise and in every respect the owner or agent, as the case may be, in charge of every coal mine or colliery shall employ a competent and practical inside overseer, to be called mining boss, who shall keep a careful watch over the ventilation apparatus, over the airways, the travelingways, the pumps and sumps, the timbering; to see, as the miners advance in their excavations, that all loose coal, slate or rock overhead is carefully secured against falling, over the arrangements for signaling from the bottom to the top and from the top to the bottom of the shaft or slope, over the metal tubes from the top to the bottom of the shaft or slope for the purpose of talking through, and all things connected with and appertaining to the safety of the men at work in the mine. He or his assistants shall examine carefully the workings of all mines generating explosive gases every morning before the miners enter the coal mine or colliery, and shall ascertain that the mine is free from danger, and the workmen shall not enter the mine until such examination has been made and reported, and the cause of danger, if any exist, be removed; and he or his assistant shall also, every evening when the workmen leave the mine or colliery, go over the mine and see that the doors of the passageways are all properly closed, and that all the airways are free and unobstructed to the passage of air through them; and it shall be the duty of the mine boss to measure the ventilation at least once per week at the inlet and outlet, also at or near the face of all gangways, and all measurements to be reported to the inspector once per month.

SECTION 9. All and every of the safety lamps used in coal mines or collieries shall be the property of the owner thereof, and shall be under the charge of a suitable person, under the direction of the mining boss, who shall keep them clean and in good order; and the mining boss shall provide that all doors used in assisting or effecting the ventilation of the mine shall be so hung and adjusted as that they will close of their own accord and cannot stand open, and the main doors on the traveling roads shall be double, and an extra door shall be fixed to be closed only in the event of an accident to one of the others; and the sides and top of such doors shall be well built with stone and mortar in mines in which the inspector shall deem it necessary and shall so order, and all main doors shall be provided with an attendant, whose constant duty it shall be to guard them and prevent them being left open; and every mine having explosive gas in every part of such a mine or mines shall be divided into two, four or more panels or districts, each ventilated by a separate spit or current of air, and fifty persons shall be the greatest number that shall work in any one panel or district at the same time, and bore holes shall be kept twenty feet in advance of the face of each and every place, and if necessary on both sides, when the same is driven towards or approaching an abandoned mine or part of a mine suspected to contain inflammable gas or which is inundated with water.

SECTION 10. The owner or agent of every coal mine or colliery opened and operated by shaft or slope shall provide and maintain a metal tube from top to bottom of such slope or shaft suitably calculated and adapted to the free passage of sound therein, through which conversation may be held by and between persons at the bottom and at the top of the shaft or slope; and also the ordinary means of signaling from and to the top of the shaft from the bottom; and also provide an improved safety catch and a sufficient cover overhead on every carriage used for lowering or hoisting persons;

and they shall provide and arrange the flanges or horns of sufficient dimensions are attached to the sides of the drum of every machine that is used for lowering or hoisting persons in or out of any mine; an adequate break shall be attached to every drum or machine, worked by steam or water power, that is or will be used for lowering or raising into or out of any of said mines, and the main link attached to the swivel of the wire or any other rope shall be made of the best quality of iron, and tested, by weights or otherwise, satisfactory to the inspector, and bridle chains shall be attached to the main link from the cross pieces of the carriage, and no single link chain shall be used for lowering or raising persons into or out of any of said mines; and no boy under twelve years of age shall work or enter any mine, and proof must be given of his age, by certificate or otherwise, before he shall be employed, and the father or any other person who shall conceal or misrepresent the age of any boy shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not less than ten dollars nor more than one hundred; and no owner or agent shall employ any boy knowing that he has not attained to twelve years of age. The neglect or refusal of any person or parties to perform the duties provided for and required to be performed by sections six, seven, eight, nine and ten of this act, by the parties therein required to perform them, shall be taken and be deemed a misdemeanor by them or either of them, and upon conviction thereof they or any of them shall be punished by imprisonment and fine or either, at the discretion of the court trying the same.

Section 11. No owner or agent of, or at any coal mine or colliery operated by shaft or slope, shall place in charge of any engine whereby the men are lowered into or out of the mine any but experienced, competent, sober engineers; and every engineer so placed in charge of an engine shall constantly attend to the engine of which he has charge, and shall not allow any person, except such as may be deputed by the operator or agent, to touch or meddle with it, or any part of its machinery. He shall work his engine slowly and with great care when any person is ascending or descending the shaft or slope, and when any person is about to descend or ascend the shaft or slope the men at the bottom or top, as the case may be, must inform the engineer by the metal tube, the signal, or otherwise, thereof; and no one shall interfere with or in any way intimidate the engineer in the discharge of his duties, nor ride upon a loaded wagon or cage in any shaft or slope, and in no case shall more than ten men ride on any wagon or cage at one time in any of said mines; and upon any person violating the provisions of this section he shall be held and deemed guilty of a misdemeanor, and upon conviction thereof he shall be punished by fine and imprisonment, at the discretion of the court trying the same.

Section 12. Whenever loss of life or serious personal injuries to any person shall occur, by reason of any explosion or other accident whatever, in or about any coal mine or colliery, it shall be the duty of any person having charge of such coal mine or colliery to give notice thereof forthwith, by mail or otherwise, to the inspector of coal mines and collieries for the district, and to the coroner of the county if any person is killed thereby, and due notice shall be given by the coroner of any inquest to be held as the result of any such explosion or accident; and it shall be the duty of the said inspector, or his deputy, to immediately repair to the scene of the accident and make such suggestions as may appear necessary to secure the safety of the men; and if the result of the explosion does not require an investigation by the coroner he shall investigate into and ascertain the cause of the explosion or accident, and make a record thereof, which he shall preserve with the records of his office; and to enable him to make

the investigation he shall have the power upon such occasion to compel the attendance of persons to testify, and to administer oaths or affirmations thereto, the cost of which investigation shall be paid by the county in which the accident occurred in the same manner as costs of inquests held by the coroner or justice of the peace are now paid; and the failure of the person in charge of the coal mine or colliery to give notice to the inspector and coroner, as provided for in this section, shall subject him to a fine of not less than twenty-five dollars nor more than one hundred dollars, to be recovered as other fines are to the county treasury.

SECTION 13. All boilers for generating steam in and about coal mines and collieries shall be kept in good order, and the owner or agent thereof shall have them examined and inspected by a competent boilermaker, or other well qualified person, as often as once in six months, and oftener if needed, and the result of such examination, under oath, shall be certified in writing to the inspector for the district; and all machinery in and about the mines, and especially in the coal breakers, where boys work, shall be properly fenced off, and the top of such shaft shall be securely fenced off by verticle or flat gates covering the area of said shaft, and the entrance of every abandoned slope and air or other shafts shall be securely fenced off.

SECTION 14. Upon the passage of this act the Governor of the Commonwealth of Pennsylvania shall, upon the recommendation of a board of examiners, selected for that purpose, composed of three reputable miners in practice and two reputable mining engineers, to be appointed by the judges of the courts of common pleas of Luzerne county, all of whom shall be sworn to a faithful discharge of their duties, appoint three properly qualified persons to fill the office of inspector of coal mines and collieries in Luzerne and Carbon counties, whose commissions shall be for the term of five years or during good behavior, but they shall be at all times subject to removal from office for neglect of duty or malfeasance in the discharge of duty as hereinafter provided for; and the person so appointed shall have attained the age of thirty years, be a citizen of Pennsylvania, and have a knowledge of the different systems of working coal mines, and have been intimately connected with the coal mines of Pennsylvania for a period of five years, and have had experience in the working and ventilation of coal mines where fire-damp and noxious gases are evolved. Before entering upon their duties they shall take an oath or affirmation, before an officer qualified to administer the same, that they will perform the duties of the office with impartiality and fidelity, which oath or affirmation shall be filed in the office of the prothonotary of the county; and they shall provide themselves with the most approved modern instruments and chemical tests for carrying out the intentions of this act. The examiners provided for in this act shall be appointed by the judges of the courts of common pleas for the county at the first term of the court in each year, to hold their places during the year, and vacancies shall be filled by the court as they occur; and the said examiners shall meet whenever candidates for the office of inspector of mines are to be appointed, of which meeting public notice shall be given in at least two papers published in the county at least two weeks before the meeting. The examiners shall agree in their recommendation of candidates to the Governor, and they shall recommend only such as they find qualified for the office; the said examiners shall receive three dollars per day for every day they are actually engaged in the discharge of their duties of examiners under this act, to be paid to them by the county; one inspector shall be appointed for the district in the Wyoming coal field, Luzerne county, lying east of and including Jenkins township, and one district shall be composed of that part of Wyoming coal field lying west of Jenkins township and west of the Sus-

quehanna river, and one other district shall be composed of that part of Luzerne county lying south of the Wyoming coal field, together with Carbon county.

SECTION 15. The term of office of inspector of coal mines, appointed under an act for the better regulation and ventilation of mines and for the protection of the lives of the miners in the county of Schuylkill, approved April the twelfth, one thousand eight hundred and sixty-nine, shall expire on the first day of June, Anno Domini one thousand eight hundred and seventy, and in his room three inspectors of mines, for the counties of Schuylkill, Dauphin, Northumberland and Columbia, shall be appointed by examiners, to be appointed by the court of common pleas of Schuylkill county in like manner and form provided by the fourteenth section of this act; and the said examiners and inspectors, when so appointed, shall be subject to like regulations and duties, and entitled to like privileges, franchises and salaries as are in the said section provided for the examiners and inspectors for the counties of Luzerne and Carbon; and the inspectors for the said counties of Schuylkill, Northumberland, Dauphin and Columbia shall be assigned to duty in separate districts in said counties, which said districts shall be laid out and fixed by the examiners as aforesaid, to be appointed by the court of common pleas of the county of Schuylkill.

SECTION 16. It shall be the duty of the court of common pleas of the proper county whenever a petition, signed by not less than fifteen reputable coal operators or coal miners, or both, setting forth that any inspector of coal mines or collieries grossly neglects the duties, or that he is incompetent, or that he is guilty of malfeasance in office, to issue a citation, in the name of the Commonwealth, to the said inspector to appear, at not less than fifteen days' notice, on a day fixed, before said judges, when the said court shall proceed to inquire into and investigate the allegations of the petitioners; and if the court find that the said inspector is grossly neglectful of his duties, or that he is by reason of causes that extend before the appointment, or that have arisen since his appointment, incompetent to perform the duties of said office, or that he is guilty of malfeasance in office, the court certify the same to the Governor of the Commonwealth, who shall declare the office of inspector of the district vacant, and proceed, in compliance with the provisions of this act, to appoint a properly qualified person to fill the office of inspector; and the costs of the said investigation before the court shall be borne by the removed inspector; but if the allegations of the petitioners are not sustained by the final judgment of the court the costs shall be borne by the said petitioners.

SECTION 17. The salaries of the said inspectors appointed for Luzerne and Carbon counties shall be three thousand dollars each; the maps and plans of mines and the records thereof, together with all papers relating thereto, shall be kept by the inspector properly arranged and preserved in a convenient place in the district for which each inspector shall have been appointed.

SECTION 18. Each of the inspectors of coal mines and collieries shall give his whole time and attention to the duties of the office; and it shall be his duty to examine all the coal mines and collieries in his district as often as his duties will permit him to do so, to see that every necessary precaution is taken to insure the safety of the workmen, to see that the provisions of this act are observed and obeyed; and it shall also be each inspectors duty to attend at every inquest held by the coroner, or coroners, in his district upon bodies killed in or about the coal mines or collieries.

SECTION 19. That any miner, workman or any other person who shall knowingly injure any safety-lamp, water gauge, barometer, air-course, brattice, or obstruct or throw open air-ways, or carry lighted pipes or matches

into places that are worked by safety-lamps, or handle or disturb any part of the machinery of the hoisting engine, or open a door and not have the same closed, whereby danger is caused in the mine, or enter any place of the mine against caution, or disobey any order given in carrying out the provisions of this act, or shall ride upon a loaded car or carriage in any shaft or slope, or on any plane in or around any of said mines, or do any other act whereby the lives or the health of persons, or the security of the mines or the machinery is endangered, or any miner having charge of a working place in any coal mine or colliery who shall neglect or refuse to keep the roof thereof properly propped and timbered, to prevent the falling of coal, slate or rock, shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by imprisonment and fine at the discretion of the court.

LIVE STOCK AMENDMENT.

That any engineer who leaves his work without giving due notice of the same, thereby endangering the lives of the live stock in the mines, shall be fined not less than fifty dollars, nor more than five hundred dollars, and six months imprisonment.

SECTION 20. It shall be lawful for any inspector to enter, inspect and examine any coal mine or colliery of his district, and the works and machinery belonging thereto, at all reasonable times, by night or by day, but so as not to impede or obstruct the working of the coal mine or colliery, and to make inquiry into and touching the state and condition of such coal mine or colliery, works and machinery, and the ventilation of such coal mine or colliery, and the mode of lighting and using lights in the same, and into all matters and things connected with or relating to the safety of the persons employed in or about the same, and especially to make inquiry whether the provisions of this act are complied with in relation to such coal mine or colliery; and the owner or agent of such coal mine or colliery is hereby required to furnish the means necessary for such entry, inspection, examination and inquiry, of which the said inspector shall make entry in the record of his office, noting the time and material circumstances of the inspection.

SECTION 21. No person who shall act or practice as a land agent, or as a manager, viewer or agent of any coal mine or colliery, or as a mining engineer, or be interested in operating any coal mine or colliery, shall act as inspector of coal mines or collieries under this act.

SECTION 22. It shall be the duty of each inspector to make an annual report of his proceedings to the Governor of the Commonwealth at the close of every year, in which he shall fully enumerate all the accidents in and about the coal mines and collieries of his district, marking, in tabular form, those accidents producing death or serious injury to persons, and the state of the workings of said mines with regard to the safety of the workmen therein and to the ventilation thereof, and the result of his labors generally shall be fully set forth.

SECTION 23. The salaries of the inspectors of coal mines and collieries, and the expenses of carrying into execution the provisions of this act, shall be paid by the State Treasurer, out of the treasury of the Commonwealth, upon the warrant of the president judge of the court of common pleas of Luzerne county for the salaries of the inspectors for Luzerne and Carbon counties, and upon the warrant of the president judge of the court of common pleas of Schuylkill county for the inspectors for the counties of Schuyl-

kill, Columbia, Northumberland and Dauphin; and all inspectors under this act shall reside in the districts for which they are appointed.

SECTION 24. That for any injury to persons or property occasioned by any violation of this act, or any willful failure to comply with it provisions, by any owner, lessee or operator of any coal mine or opening, a right of action shall accrue to the party injured for any direct damage he may have sustained thereby; and in any case of loss of life by reason of such willful neglect or failure aforesaid, a right of action shall accrue to the widow and lineal heirs of the person whose life was lost for like recovery of damages for the injury they shall have sustained.

SECTION 25. All laws of this Commonwealth that are inconsistent with the provisions of this act are hereby repealed.

BUTLER B. STRANG,
Speaker of the House of Representatives.

CHARLES H. STINSON,
Speaker of the Senate.

APPROVED—The 3d day of March, 1870.

To His Excellency, JOHN F. HARTRANFT,
Governor of the State of Pennsylvania:

SIR:—In conformity with an act of Assembly, in such case made and provided, I have the honor to submit to you the result of my labors in the capacity of Inspector of Mines for the First, or Pottsville district, during a period of three months, extending from September 22d to December 31st, 1875.

The number of accidents which have occurred during that period is fifty-nine, of which twenty persons lost their lives and thirty-nine were injured; full particulars of which have been given to the clerk of the district, and are embodied in his report.

Upon entering upon the duties of this office I found several of the collieries in a bad condition, in fact accidents were of daily occurrence for the two first weeks of my official career. The chief cause of these was that during the first six months of the year the collieries had been idle, owing to the deplorable strike which occurred in this district at that time. As the men refused to work at the wages offered by their employers the collieries were permitted to go out of repairs, and upon resumption some of them were in a very bad state. I am happy to be able to report that great improvement has taken place, and as I have the promise of most of the gentlemen superintending, that these matters shall receive every attention during the suspension of coal shipping in the winter, I have confident anticipations that at the commencement of the season of 1876 we shall find a better state of affairs prevailing in this district, and that I shall be enabled, in my next address to your Excellency, to report a marked diminution in the frequency of mining accidents.

As a proof of the wisdom and good policy of the enactment of the ventilation law I am happy to inform you that the condition of the coal mines, in regard to the health and safety of the men employed therein, is far better now than it has ever been in the history of coal mining. Old prejudices are fast dying away, and now, instead of encountering opposition from owners and superintendents, I find that in general they are fully conscious of the advantages to be derived, even by themselves, from the application of the provisions of the act, and express themselves as being willing to adopt any improvement that would inure to the safety of the men.

I am sorry to have to report that a majority of the accidents that occur in coal mines are the result of recklessness of the workmen themselves, being constantly inured to danger in following their obscure occupation they become so regardless of the dangers by which they are surrounded that for the purpose of gaining a trifling convenience or advantage they will run risks, at the sight of which men engaged at ordinary occupations would stand appalled with fear. And it is only when their torn and mangled bodies have to be recovered and conveyed through the gloomy caverns of the mine that their comrades are awakened to realize the folly and perversity of pursuing such a course of conduct.

Being cognizant of these facts I have concluded to issue an address through the medium of the public press, of which the following is a copy :

ADDRESS.

To all coal operators, superintendents, bosses, miners, laborers, and all others employed in and about the coal mines of the first, or Pottsville, district of Schuylkill county :

GENTLEMEN :—We have now entered upon the centennial year of the Declaration of the Independence of these United States, and no true lover of liberty can contemplate with indifference the immense advantages which have been conferred upon mankind by the application of the principles enunciated within that immortal document, and while we look back with emotions of pleasure and gratitude for the advantages which we ourselves enjoy, from the action of the noble men who have lived and died before us, such retrospection should be a lesson to us. We should be stimulated by the glorious example there set before us to endeavor, in our day and generation, to do what we can to alleviate the sorrows and sufferings and to elevate, as far as possible, the condition of the masses of suffering humanity.

I am somewhat pleased to find, by comparison, that the number of serious accidents which have occurred through the year now past is a little less than for the previous one, but still the roll is a grievous one, and is rendered still more so by the fact which I am compelled to admit, that more than one-half of them could have been prevented if every person connected with the occurrence had taken proper precaution to prevent them ; and now I hope that all parties will try to assist each other in carrying into effect the wise provisions of the mine ventilation act, as this terrible death-roll should, can and must be diminished.

To the Operators:

I beg to suggest that during this suspension you have ample time to attend to repairs, to get your air courses, traveling ways, ropes and machinery all put in a proper condition to insure the safety and health of the men in your employ. If you neglect to do this now and any accident occurs, consequent upon such neglect, you will render yourselves amenable to the law for all damages which the killed or injured persons may sustain, and as you will have no just excuse to offer no other will be accepted ; the law will be enforced against you, the rights of property are great, but human life is and must continue to be held sacred.

To Superintendents and Foremen:

The law makes it an important part of your duty to see that all the provisions of the act of Assembly are carried into effect in each portion of the collieries under your control. Your responsibilities are great; you have to protect your employer's property, and also the lives of the men under

your control; when both can be saved all is well, but when circumstances arise rendering it necessary to sacrifice one in order to save the other then no honorable man will hesitate one moment to relinquish either his own or any other person's property rather than to lose the lives of any human being. I have been informed that some superintendents are in the habit of riding up the slopes upon loaded cars or down the slopes on the wagon opposite to a loaded one. To such I say you can never expect another person to respect a law which you are habitually violating yourselves; you ought to set the example to the men under your control. If you place such a small estimate upon the value of your own lives you are not likely to be very careful of the lives of others. You are not competent to discharge the duties of the position you now hold. Your employers having regard to their own interests would do well to remove you and fill your places with more careful men; and if in future you are detected in any such flagrant violation of the law I shall ask the court to proceed against you with the utmost vigor.

To the Miners and Laborers:

I wish to address a few earnest words to you. The Legislature of the State, composed, to a very great extent, of men who have not any direct interest in your welfare, but, actuated by the most benevolent sentiments of humanity, have expended considerable time and labor in bringing to pass an act of Assembly providing for the protection of your lives and preservation of your health while engaged in following your usual occupation. Having accomplished this for your especial benefit, what can you say in your own behalf when you render all their labor and humane intentions nugatory by your own reckless and negligent conduct? Of all the accidents which have occurred since I entered upon the duties of this office nine-tenths of them could have been prevented if the men had only taken reasonable precaution to prevent them. If the Legislature should pass a new act every day for your protection it would avail nothing unless you endeavor to protect yourselves, and now I ask you, as you value your own lives and the welfare of those helpless ones depending upon you for support, as you value the friendship of the comrade who labors by your side, as you are moved to compassion by the wail of the widow and the cry of the helpless orphans which so often resounds in your ears, to assist me, not in violating but in carrying into effect the wise provisions of the act of Assembly. If you will do so I am confident that the number of casualties for the present year will be much diminished, which "is a consummation devoutly to be wished" by all classes of society, and by none more than

Yours, truly,

SAMPSON PARTON,
Inspector of Mines.

There are at present in operation in this district 66 collieries, most of which are in good condition, whilst some few are capable of much improvement, but as the owners of these have promised to give attention to this matter during the winter I forbear to mention them by name in this report, preferring rather to give them an opportunity to comply with the provisions of the law in an amicable manner than to cause annoyance by any unnecessary severity in compelling them to do so. I have always found it to be better to appeal to the reasoning faculties of mankind than to their passions, and have no doubt that it will be the case in this instance. If, however, I find any that will continue perversely, to set at nought the obligations and requirements of the law, I assure you that I shall proceed against

them with all the power that the laws of the Commonwealth permit me to use, regardless of fear, favor or affection.

It would be superfluous for me to attempt to inform your Excellency of the deplorable state of affairs which have prevailed in the coal regions for some time past. With these facts you are well acquainted. These unfortunate struggles which are continuously occurring betwixt labor and capital, by which the worst passions of mankind are excited, present a theme for the most profound study and reflection of every person who has a heart to feel for, and a wish to improve the condition of the masses of his fellowmen who are compelled, by stern necessity, to earn their living by the labor of their hands. I think that much of this difficulty is caused by the superficial and often useless education that boys obtain in our schools. I often meet with boys, and men, too, who can tell the heights of all the principal mountains and the lengths of all the principal rivers, who are at the same time as ignorant of the laws which govern business and trade as though they had never an hour's teaching in their lifetime. I confess I have very little hope that a better state of affairs will prevail in the coal regions until both employers and employed shall become acquainted with the laws of political economy, and shall make it a rule to apply it strictly in their business transactions with each other. It is a lamentable fact that for a number of years all parties connected with this business have been trying to conduct it in such a manner as to ignore or violate the natural principles upon which those laws are founded. In the year 1868 the market was glutted with an annual product of 10,000,000 of tons of anthracite coal. In 1869 the suspension or restrictive policy was inaugurated, all parties engaged in its production agreeing to adopt that policy. In that year 13,000,000 of tons were produced in nine months. In 1875 23,000,000 of tons had been produced in six months, and although the consumption has increased in such unparalleled ratio, still the market is glutted worse than ever. The workmen and employers, who were at first equally anxious to adopt this policy, are now at dagger-points with each other, each party watching for an opportunity to take an advantage of the other.

Now there can be no doubt that after the war had the coal trade been left to relieve itself of the depression by natural means, the same as every other trade, it would long ago have righted itself. Those operators who could not afford to sell coal at the low prices which prevailed as a natural consequence of the depressed state of the market would have gone out of the business, thus reducing the supply, the low prices would have stimulated the consumption until the demand would have been equal to the supply, and the trade would have been established upon the only true and permanent basis; but instead of this we find affairs growing worse every day, every suspension only creates cause for another, still increasing the evil instead of remedying it. And now, at this time when capital has succeeded it, asserting its superior power when labor lays prostrate at its feet, then men who have the direction and control of this capital seem as much determined as ever to continue the same selfish and fatal policy, with this difference, that they have not the excuse of ignorance to plead in extenuation of their folly.

Sir, it requires no prophet, gifted with supernatural powers, to predict what must be the natural result of such a policy. Then combinations contain within their own structure the germs of their destruction, and the time is not far distant when this very concrete, (namely, self-interest,) which binds them so closely together now, shall also be the cause of their dismemberment, then will commence an era of open competition, which, although disastrous for awhile, will in the end prove beneficial, prices for awhile will

be so low that only such collieries as possess superior physical advantages will be able to work at a profit, the others will stop, and thus reduce the production, the tide of emigration of labor, that has been flowing so steadily for a number of years to the coal fields, will be diverted in another direction, where there is still ample room and need for it, and where, instead of producing, it will add to the consumption of coal, the trade will gradually arise from this depression, and mankind will be taught another lesson from the book of nature. That all combinations for the purpose of fixing an artificial price upon the value of any commodity are wrong in principle, such values being governed by a law of nature, which is as infallible as any mathematical law, and a thousand times more unalterable than those of the Medes and Persians—namely, the law of supply and demand.

I have the honor to be

Your Excellency's obedient servant,

SAMPSON PARTON.

Names of persons who were killed in and about the collieries of the First or Pottsville district during the year ending December 31, A. D. 1875.

DATE.	Names of persons killed.	Names of the Collieries.	Wife.....	Children....	Remarks.
April 18,	Joseph Oerther	Black Valley	....	....	Killed by the drag of the drum.
July 8,	John Kenny	Hickory Shaft	....	....	Killed by the ascending cage.
23,	John M'Mannon	Oakdale	1	....	Killed by falling into a heading.
Aug. 8,	Thomas Tobin	Richardson	....	....	Killed by falling into an open breast.
22,	Mark Jones	Hickory Shaft	....	....	Died, injured on the 12th by a blast.
23,	Edward Corcoran	Eagle	....	....	Died of injuries from a fall of slate.
Sept. 9,	Joseph Borden	Kear	1	4	Died in the mine of hemorrhage.
15,	John Baggy	Thomaston	....	....	Died of injuries by a runaway wagon.
29,	William Leaver	Delaware Shaft	1	6	Killed by a fall of rocks.
29,	John Kelly	Mount Laffee	1	5	Killed by a fall of coal in a small mine.
30,	James Adams	Anchor	1	4	Killed, } These three men were killed by an explosion of gas
30,	Arthur Hunt	....do	1	6	Killed, } through neglect of the fire-boss's duty.
30,	Isaac Watkins	....do	1	4	Killed, }
30,	Patrick Walsh	Hickory Shaft	1	7	Died, fatally burned by fire-damp.
Oct. 6,	Thomas Kavanagh	Forestville	....	....	Killed by a fall of coal.
15,	James Luesley	Buckville	....	....	Killed by a rush of coal in the shute.
Nov. 2,	Edward Bevin	New Boston	1	1	Killed by a fall of slate.
8,	John Powell	Kear	1	6	Killed by a fall of coal.
17,	Thomas M'Govern	Palmer Vein	1	6	Died, injured by an explosion of powder.
20,	Christian Kopp	East Franklin	1	4	Killed by a rush of breast coal.
23,	Edward Corcoran	Eagle	....	....	Died, injured by a fall of slate on 16th.
27,	William T. Morris	Beechwood	1	4	Killed by a fall of coal.
30,	Hugh Sharp	Buckville	1	1	Killed, } These men were resting at foot of slope when the
30,	Patrick M'Intyre	....do	1	4	Killed, } chain broke, and were killed by fragments of the
30,	Hugh Mathews	....do	1	2	Killed, } wagon.
Dec. 1,	Thomas Kline	Greenwood	1	1	Killed by the fall of a trestling.
12,	William Kear	Hickory Shaft	....	....	Died, fatally burned by fire-damp.
12,	Hugh Calloran	....do	....	....	Died, fatally burned by fire-damp.

Thus showing that 28 persons lost their lives in and about the collieries of the district during the year, leaving 17 widows and 62 orphans; against 35 deaths last year, leaving 14 widows and 65 orphans. On the 22d of September the district had been enlarged, it comprises all the collieries in Schuylkill county that are situated south of Broad Mountain, and the collieries of New Boston basin, except Brookside colliery. The district at present contains double the number of collieries it did last year. The diminution in fatal casualties under its present management is very gratifying.

We here give the character of these fatal accidents, to compare them with those of former years:

CHARACTER OF FATAL ACCIDENTS.

Lost their lives by falls of coal	8
Lost their lives by falls of rocks and slate	3
Lost their lives by explosions of fire-damp	7
Lost his life by fall of timber	1
Lost his life by an explosion of powder	1
Lost his life by being crushed by wagons	1
Lost his life by fall of slope cage	1
Lost their lives by breaking of slope chain	3
Lost his life by stroke of a drum sweep	1
Lost his life by falling into an open breast	1
Lost his life by hemorrhage at work	1
Total fatal accidents during the year	28

The following statement exhibits the names of persons who were maimed and injured in Pottsville district during the year 1875.

Date.	Names of maimed persons.	Names of collieries.	Remarks.
April 3,	David Williams	York Farm	Severely burned by fire-damp.
3,	Adam Boertsel	....do	Severely burned by fire-damp.
8,	James Lewis	Richardson	Head fractured by fall of a casting.
27,	William Cooper	New Kirk	Hand cut and fingers cut off by timbers.
May 10,	Joseph Fisher	New Philadelphia	Severely injured by a blast.
16,	John Wise	Delaware Shafts	Severely cut with an axe.
21,	P. F. Moran	Beechwood	Severely injured by a blast.
22,	John Thomas	Thomaston	Severely injured in the slope by a wagon.
22,	John Reese	Beechwood	Severely injured by a fall of coal.
25,	Thomas Doolen	Thomaston	Back broken in riding on a wagon.
July 2,	Thomas Hughes	Hickory Shaft	Terribly burned by fire-damp.
2,	James Davis	....do	Terribly burned by fire-damp.
6,	Wm. Stamford	Richardson	Severely injured by a fall of coal.
6,	James Bergen	Oakdale	Severely injured by wagons.
20,	Lewis Weihl	Anchor	Terribly injured in getting off a wagon.
20,	John Eckle	Glen Carbon	Terribly burned by fire-damp.
24,	John Dolan, boy	Oakdale	Foot crushed by wagons.
28,	Michael Monaghan	Hickory Shaft	Severely injured by a discharge of shot.
Aug. 20,	Aaron Waddell	Jackson Drift	Severely injured by a fall of coal.
23,	William Darkin	Eagle	Severely injured by a fall of coal.
25,	James Crowley	....do	Severely injured; run over by wagons.
25,	Murty Gorman	....do	Severely injured by a fall of coal.
25,	James Blacker	Hickory Shaft	Severely injured by a fall of coal.
Sept. 2,	Michael Torpy	....do	Severely burned by fire-damp.
15,	James Boggy	Thomaston	Mortally injured by a prop and wagon—*died.*
18,	Thomas Magee	....do	Arm cut off in the cog-wheels.
19,	Peter Walsh	Hickory Shaft	Fatally burned by fire-damp—*died.*
19,	Thomas Walsh	....do	Severely burned by same; non-fatal.
19,	Martin Glenn	....do	Severely burned by same; non-fatal.
23,	John Lehey	Anchor	Slightly burned by fire-damp.
23,	John Kendrick, boy	....do	Slightly burned by fire-damp.
30,	Peter Franks	....do	Slightly burned by fire-damp.
30,	Michael Butler	....do	Slightly burned by fire-damp.
30,	Moses James, boy	....do	Slightly burned by fire-damp.
30,	Henry Miller	Colket	Nearly smothered by a fall of coal.
Oct. 5,	Michael Scally	Otto	Thigh broken by a fall of coal.
5,	Michael Coyne	Middle Creek	Slightly burned by fire-damp.

NAMES OF PERSONS WHO WERE MAIMED AND INJURED IN POTTSVILLE DISTRICT—*Continued.*

DATE.	Names of maimed persons.	Names of collieries.	Remarks.
Oct. 7,	William Manger	New Boston	Toes cut off by wagons.
9,	John Egan	....do	Leg broken by a fall of coal.
12,	Nathan Wagner	Lower Rauch Creek	Severely injured by a fall of slate.
12,	Lawrence Whemm	Kear	Leg cut off by a blast in coal.
12,	Patrick Burk	Pine Forest	Leg broken and burned by fire-damp.
12,	John Mason	....do	Severely burned by fire-damp.
18,	James Grant	Richardson	Hip broken by a fall of coal.
18,	John Morgan	Beechwood	Severely burned by fire-damp.
18,	James Devlin	....do	Severely burned by fire-damp.
18,	Charles Quinn	Otto	Severely injured by a blast.
23,	Nicholas Finnegan	East Franklin	Severely burned by fire-damp.
23,	Mathew Makin	....do	Severely burned by fire-damp.
23,	John Pritchard, boy	....do	Severely burned by fire-damp.
23,	James Gamble	....do	Severely burned by fire-damp.
23,	James Coxe, boy	....do	Severely burned by fire-damp.
23,	John Moran	Pyne	Severely injured by a drill.
24,	James C. Thompson	Kalmia	Leg broken by a fall of coal.
25,	William Morris	Beechwood	Severely crushed by a fall of coal.
Nov. 13,	Charles Murry	Eagle Hill	Body crushed by a blast.
16,	John Magovern	Palmer Vein	Fatally burned by powder—*died.*
16,	Peter Norris	....do	Severely burned by same accident.
16,	A driver boy	....do	Severely burned by same accident.
16,	A miner	Monitor, No. 1	Head fractured by a fall of coal.
16,	An assistant	....do	Severely crushed by wagons and props.
19,	George Athy	Colket	Severely crushed by wagons and props.
19,	Robert Evans	Lower Rauch Creek	Head and body crushed by a fall of coal.
19,	Jonas Leffler	....do	Slightly crushed by a fall of coal.
27,	Michael Norton	Beechwood	Severely burned by fire-damp.
30,	Hugh Wathens	Buckville	Fatally inj'd by fragments of broken wagon, caused by breaking of spreader-chain, while waiting to be hoisted out of mine.
30,	Patrick O'Donnell	....do	
30,	James Mullin	....do	Severely inj'd by fragments of broken wagon, caused by breaking of spreader-chain, while waiting to be hoisted out of mine.
30,	Patrick Duffy	....do	
Dec. 1,	John Commons	Hickory Shaft	Slightly crushed by a coal slide.

Ten others were more or less injured by sundry accidents, showing that 88 persons were injured. Of this number 23 are maimed for life and 5 others died of injuries.

To His Excellency, JOHN F. HARTRANFT,

Governor of the Commonwealth of Pennsylvania:

SIR:—In conformity with the requirements of an act of General Assembly of the 3d of March, A. D. 1870, I have the honor to herewith submit my official report of the collieries of my district for the nine months ending September the 22d, 1875, on which date my term of office expired, and my successor had been appointed conformably to law.

Statements of fatal and non-fatal accidents are hereto submitted, and the character of the accidents are given in detail, and the general condition of the district collieries as to their ventilation and safety.

It affords me great pleasure to be able to say at my retirement from the duties of inspector of mines that the collieries are, as a whole, in good order, and that the late law had a beneficial result.

I here beg leave to tender your Excellency my thanks, and to all operators and miners for the kind manner and many courtesies shown to me, and trust my duties were discharged with justice and to the best of my ability.

With great respect, I am

Your Excellency's obedient servant,

JOHN ELTRINGHAM.

WEST LEHIGH COLLIERY.—*Operated by Fisher & Hazzard.*

It is situated north of Mahanoy City, on lands of the Lehigh Valley railroad company. It consists of a double track slope, sunk on the south dip of the D or Skidmore vein. A tunnel opens the B or Buck Mountain vein north in 15 feet of good coal. At present ventilation is produced by natural means until the new outlet is completed, and the work gives me full satisfaction. Three engines, of 120-horse power, with 7 boilers, are used; 40 men and 20 boys are employed; 25 wagons and 11 mules, with 800 yards of track, are used.

PRESTON, No. 1, COLLIERY.—*Operated by P. & R. C. & I. Co.*

It is situated north of Girardsville, on the company's lands, and consists of slope sunk on the south dip of the 6-foot vein. A new outlet is now in course of completion, and will be open into the fan outlet. The breasts have double shutes. The plan of mining is satisfactory. Seventeen breasts are worked. A 20-horse fan is in use; ventilation is only medium; 3 engines, of 90-horse power, with 7 boilers, are in use; 80 men and 26 boys are employed; 5 mules, 50 wagons and 3,000 yards of tracks are in use. On the whole I find the improvement of the colliery is prosecuted with some vigor.

GIRARD (SHAFT) COLLIERY.—*Operated by Messrs. Beatty & Garretson.*

It consists of a shaft and two slopes sunk on the north dip and one on the south dip. All the work is connected by tunnels underneath, working the Mammoth vein by a tunnel in connection with the overlying veins. Two steam fans are used for ventilation, which produce 17,600 cubic feet of air per minute; some gases are generated here, but there is ample means to check it; 9 engines, of 540-horse power, with 22 boilers are in use; 22 mules and 43 wagons, and 2,250 yards of track are used. Can ship 400 tons per day.

HAMMON (SLOPE AND DRIFT) COLLIERY.—*Operated by Messrs. Moodey, Gross & Company*

It consists of a slope and three drifts, working the E or Mammoth vein; the breasts are 10 yards wide, with 8 yards of pillars left to each. Very large deposits of coal are upon the tract. There are two breakers used for manufacturing the coal. This colliery is one of the best in the district, the vein is 15 feet thick and of the best quality. Ventilation is good and the airways are ample; and I do pronounce the colliery to be in good condition. Four engines, of 230-horse power, and 16 boilers are in use; some 350 hands are employed, 600 tons of coal can be shipped daily; 26 mules, 60 wagons, 3,500 yards of track are in use.

GIRARDSVILLE (DRIFT) COLLIERY.—*Operated by Messrs. Moodey & Gross.*

The colliery is situated east of Girardsville, and was formerly owned by Col. J. J. Connor. It consists of several drift levels opening the Mammoth vein in lifts up the mountain; some 60 breasts of coal are open. Ventilation is produced by natural means, which answers its purpose; there are 3 engines, of 150-horse power, used with 6 good boilers; 125 men and 60 boys are employed; 24 mules and 50 wagons, with 2,900 yards of tracks are in use. I think this colliery one of the best managed of any in the district.

ST. NICHOLAS (SLOPE) COLLIERY.—*Operated by F. & J. Donaldson, on lands of the Philadelphia and Reading Coal and Iron Company.*

The slope is sunk on the south dip of the E vein, in 25 feet of coal, and was formerly owned by Gen. Henry L. Cake. The present is a second lift working; 68 yards of a tunnel opens the (D) Skidmore vein in 8 feet of coal, a tunnel driven south opens the Primrose vein. Ventilation is satisfactory; and I find, in all its appointments, the manager deserves credit for his industry. A new lift is now in progress of sinking, which when completed will raise the colliery to one of the first class.

BEAR RUN (SLOPE) COLLIERY.—*Operated by Wiggan & Triebles, on lands of the P. and R. Coal and Iron Company.*

The E vein is open by a slope, working some 16 breasts in 20 feet of coal. A tunnel opens the D vein on its south dip of the (E) vein, and also works a counter lift in this level, 40 breasts are open. And ventilation is very good, produced by the operation of two fans. There are 9 engines, with 20 boilers in use; 85 men and 40 boys are employed; 30 mules, 125 wagons and 1,525 yards of track are used. The shipments can be made to average 400 tons per day. I find the colliery in all its appointments to be in good condition.

GILBERTON (SLOPE) COLLIERY.—*Operated by Gilberton Coal Company, on lands of Gilbert & Sheafer.*

It consists of two slopes, opening the E vein. The shipments can be run up to some 350 tons per day. Ventilation is produced by a 15-horse power

fan, and supplies a sufficient quantity. Nine breasts are working; 6 engines, of 317-horse power, with 17 boilers, are in use; 105 men and 71 boys are employed; 22 mules, 55 wagons and 2,550 yards of track are in use; the colliery evidently is well managed; the air-courses and second outlets are of an ample area; am well pleased with its management.

Turkey Run (a slope and tunnel) Colliery.—*Operated by Brenizer & Co., on lands of Gilbert and others.*

It consists of a rock tunnel, opening the E vein in 50 feet of coal. A slope has been lately opened in a new lift, which yields an excellent quality of coal. Twenty-five breasts are open. The ventilation is produced by a 15-horse power fan, which supplies 18,150 cubic feet of air. I find the colliery, in all its appointments, to be in good condition. Four engines, of 140-horse power, with 15 boilers, in use; 150 men and 80 boys are employed; 29 mules, 125 wagons and 5,002 yards of tracks are in use; the average daily shipments are 400 tons.

Lawrence (slope) Colliery.—*Operated by Jacob Lawrence & Co., on lands of Gilbert & Sheafer.*

It consists of two slopes, opening the E vein on its north dip in 25 feet of coal. A suction fan is used for ventilation, which produces a sufficient supply. I found all the appointments of the colliery in excellent condition. There are 6 engines, with 15 boilers, used for the purpose; 150 men and 30 boys are employed; 20 mules, 60 wagons and 3,000 yards of tracks are in use; daily shipments=500 tons.

Colorado Colliery.—*Operated by the Philadelphia Coal Company, on the Girard lands.*

It consists of two upper level openings on the E vein, a new slope has been open to cut the top and lower benches of the same vein, turnouts are made on each side of the slope to accommodate the movement of haulage of coal. Ventilation is very satisfactory, and it is produced by a 20-horse power fan; I found 16,000 cubic feet of air in circulation, a quantum sufficiently adequate for this purpose. There are 6 engines, of 219-horse power, and seven boilers in use; 75 men and 51 boys are employed; 24 mules, 86 wagons, and 3,400 yards of track are in use. The present shipments will average 350 tons per day. Col. David P. Brown, of Pottsville, is resident engineer and general manager.

Locust Run (slope) Colliery.—*Operated by the P. and R. Coal and Iron Company, on lands of the said company.*

It consists of a slope sunk on the south dip of the Primrose vein (G) in 15 feet of coal. I found the ventilation to be ample. There is some gas in the mine, but by careful attendance it is not likely to become serious. There is an immense body of coal in the tract. The mine is in good condition. There are 4 engines, of 140-horse power, with 22 boilers in use; 152 men and 57 boys are employed; one 20-horse fan, 25 mules, 65 wagons

and 4,500 yards of tracks are in use. The average daily shipments is 350 tons. I found all the appointments of this colliery well conditioned.

TRENTON OR DELANO (SLOPE) COLLIERY.—*Operated by Atkinson.*

It consists of a slope sunk on the north dip of the Primrose vein (G.) There has been very little mining done on the bottom level, but counter levels are now opening, which will shortly greatly increase its production. There are 4 engines, of 140-horse power, with 9 boilers in use ; 52 men and 22 boys are employed; 12 mules and 30 wagons, and 2,500 yards of track are in use. The daily shipments will average 300 tons.

LOCUST DALE COLLIERY.—*Operated by the P. and R. Coal and Iron Company, on lands of the said company.*

It consists of a double slope lift on the E vein in 25 feet of coal, and an independent pump slope used for drainage, men and materials ; 36 breasts are open, all of double shutes ; 48 yards of a coal pillar supports the upper lift gangway, the gangways are 200 yards in advance of the breastings. Ventilation is good, 2,800 cubic feet of air is in circulation per minute. There are 8 engines, of 650-horse power, with 31 boilers in use ; 127 men and 75 boys are employed ; 27 mules, 45 wagons and 3,500 yards of track are in use ; the average daily shipments are 400 tons. I found the general condition of the colliery in all its appointments very good.

CUYLER (2 DRIFTS) COLLIERY.—*Operated by Heaton & Brothers, on the lands of Cuyler & Co.*

It consists of two drifts, opening the D and E veins, which are nearly flat workings off the gangway. Ventilation circulates into the E vein works and passes thence into the D works and returns to the fan outlet. I find this colliery not only secure but one of the best managed in the district. The coal in these seams is at least 35 feet thick, besides the company is working a counter level in the mine on both these veins. 33 breasts are open ; 5 engines, of 125-horse power, and 6 boilers are in use ; a 30-horse power fan is used for ventilation ; 160 men and 50 boys are employed ; 26 mules, 94 wagons and 4,600 yards of track are in use ; daily shipments, 450 tons. I am pleased to say the colliery is now in excellent condition.

PRESTON, No. 3, COLLIERY, NEAR GIRARDSVILLE.—*Owned and operated by the P. & R. C. & I. Co.*

It consists of 2 slopes, one for coal and the other for drainage, men and material. The E vein is mined extensively here, and ventilation is considered fair ; the condition of all its appointments is very good. There are 127 men and 50 boys employed ; 5 engines of 596-horse power, with 17 boilers, are used ; 4 mules and 45 wagons, with 1 50-horse power fan ; daily shipments will average — tons.

COPLEY (SLOPE) COLLIERY.—*P. & R. C. & I. Co., Owners and Operators. Lentz & Bowman, Operators or Agents on land of the Lehigh Valley Railroad.*

It consists of 5 drifts and a slope sunk in 3 lifts on the (B) Buck Mountain vein. The coal is excellent and in large quantity. Two engines of 70-horse power, with 6 good boilers, are in use; 22 mules, 85 wagons and 1,800 yards of tracks are in use; 125 men and boys are employed; ventilation is medium, the condition of which is not reported to me satisfactorily.

ELMWOOD (SLOPE) COLLIERY, NEAR MAHANOY CITY.—*Owned and operated by the P. & R. C. & I. Co.*

It consists of a slope sunk on the south dip of the E vein. Nineteen breasts are open in 14 feet of good coal; a 20-horse power fan produces ventilation; 5 engines of 356-horse power are used, with 10 good boilers; 9 mules, 24 wagons; 414 yards of track are in use; monthly shipments, 5,750 tons; 78 men and 11 boys are employed.

BOSTON RUN.—*Operators and land owners, the P. & R. C. & I. Co.*

This colliery consists of a slope opening on the E vein. There are 4 coal seams opening, making 34 feet in thickness. Good safety roads are opened on the D seam. One hundred and seventeen men and 79 boys are employed; 8 engines of 205-horse power, with 12 boilers, are used; 23 mules, 62 wagons; 500 yards of tracks are in use; daily shipments, 300 tons; 49 breasts are open. The condition of the mine is fair.

NORTH MAHANOY (SLOPE) COLLIERY.—*Operated and owned by the P. & R. C. & I. Co.*

It consists of a slope opening on the E vein. Thirteen breasts are open. There are 2 veins worked by this slope. The ventilation is produced by 2 fans. A tunnel opens the D vein on its south dip. The ventilation is produced by 2 steam fans. One hundred and fifty men and 43 boys are employed; 5 engines of 160-horse power, with 10 boilers, are used; 10 mules, 38 wagons and 1,000 yards of tracks are used. Daily shipments, 270 tons.

UNION (SLOPE AND DRIFT) COLLIERY.—*Operated by Judge Ryan and John Anderson, on lands of the Philadelphia City tract.*

It consists of a new slope opening and a drift. It has been in operation 9 years. The tract contains an immense deposit of excellent coal. The E and D seams are open in 34 feet of pure anthracite coal. These gentlemen have the experience and practical ability to make this one of the most remunerative collieries in the region. There are 115 men and 55 boys employed; 6 engines of 230-horse power and a shifting engine to do the haulage; 9 good boilers are in use; 21 mules, 85 wagons; 3,000 yards of track are in use. Daily shipments at present is 400 tons. When the slope workings are extended to afford a larger force to be employed the colliery will be able to ship 650 tons per day. The ventilation is produced by 2 furnaces and an air course, and renders satisfaction; 78 breasts are open,

each 10 yards wide, with 9 yards of a pillar. I find the colliery in good condition; and here take leave of expressing my sincere thanks for the marked favors I have had received from all parties in the discharge of my duties since my entry into office. Although the condition of the collieries are much better and far safer than they had been still there is a daily necessity arising which requires improving and attention.

With great respect, etc.,

JOHN ELTRINGHAM.

Twenty-second September, 1875, upon which date Samuel Gay succeeds Mr. Eltringham, and states that the following collieries were examined by him up to the close of the year, viz.:

To His Excellency, JOHN F. HARTRANFT,

Governor of the Commonwealth of Pennsylvania:

SIR:—In compliance with the requirements of an act of General Assembly of 1870, entitled "An Act providing for the health and safety of persons employed in coal mines," &c., I have the honor to submit herewith statements of fatal and non-fatal accidents that took place during the three months ending December 31, A. D. 1875, together with detailed statements of the condition in which I found the coal mines and collieries of this district on my assuming the duties of inspector of mines on the 22d day of September, ultimo, upon which date the term of office of John Eltringham expired, and the new district of Shenandoah had been created, which embraces all the coal mines and collieries now situated north of the Broad mountain, in Schuylkill county, and lying east of the eastern limits of the town of Girardsville, running north and south, and the Honey Brook collieries, which number will amount to 57 active collieries, giving employment to 11,569 men and boys. We also give the productive capacity of each colliery, and the power and force employed, and other matter of interest connected with this report.

All of which I respectfully submit for your consideration.

Your obedient servant,

SAMUEL GAY,

Inspector of the Second district.

Names of persons who were killed in and about the collieries of the Second or Shenandoah district during the year ending December the 31st, A. D. 1875.

Date.	Names of persons that were killed.	Names of the collieries.	Wife	Children....	Remarks.
Jan. 22,	George Hassell	St. Nicholas	1	4	Killed by an explosion of a boiler.
22,	Timothy Heatton	....do	1	3	Killed by the above accident.
23,	John Brill	....do	1	4	Died from injuries of same accident.
April 6,	James O'Brien	Union, No. 1			Died in the mine of heart disease.
June 8,	John Soudoskey	Mahanoy			Killed by a fall of coal.
July 28,	Daniel Hinkle	Koh-i-noor	1	4	Killed by a rush of coal.
Aug. 3,	Peter Smith	New Boston	1	5	Killed by a descending cage.
6,	Daniel Cornelius	Wm. Penn	1	4	Died from effects of work and disease.
9,	Charles Marberger	West Shenandoah	1	6	Killed by falling off a breaker building.
14,	John Carey (boy)	Cuyler			Killed in the rollers and screens.
15,	John Johns (boy)	Shenandoah			Killed; crushed in the breaker-wheels.
18,	John Hannon	Tunnel			Killed by a rush of coal in a breast.
22,	John Daugherty	Lost Creek			Died; injured by a fall of coal.
31,	Charles Kirby	Girard			Killed by a fall of top rock.
Sept. 6,	Frank Heaton	Mahanoy City			Killed by a fall of slate.
8,	John Drew (boy)	Shenandoah City			Killed by the slope rope.
17,	John Cleary	Union, No. 2			Killed by a fall of coal.
29,	Rowland Jones	Tunnel Ridge	1	5	Killed by a fall of coal.
Oct. 5,	John Bradley	Koh-i-noor			Killed; crushed by the wagons.
15,	Robert Evans	Bear Run			Killed by a fall of coal.
19,	John Dean	Plank Ridge			Killed by a fall of rocks.
Nov. 1,	Thomas Hinchell	Yeatesville			Killed by a fall of coal.
15,	Anson Smith (boy)	Shenandoah			Killed by the screens.
27,	Anthony Derrish	Mahanoy City	1	4	Killed; slipped into the rollers.
Dec. 11,	Margaret Fogle	Thomas			Died of injuries; she fell into an open breast.
20,	William Watkins (boy)	West Lehigh			Killed between screens and frame.

Showing that 26 fatal accidents occurred in this district during the year, leaving 11 widows and 49 orphans; and 114 persons were injured, 52 of whom were severely maimed, 3 of whom died subsequently of their injuries. The large coal veins worked in this district must naturally be more prolific of accidents than in small ones, as the supports, propping and timbering of coal seams that are ranging from 16 to 30 feet in thickness, and their angle of dip ranging from 50 to 80 degrees, makes them still more dangerous. Admitting there are very many practical miners engaged in these mines, there are others that are not considered experts in the profession, but had a proper deference been given to the law and the working rules, and regulation of the mines, a large number of these casualties would not occur.

Names of persons who were maimed and injured in Shenandoah district during the year 1875.

Date.	Names of maimed persons.	Names of collieries.	Remarks.
Jan. 1,	Edward Thompson	Stanton	Severely burned by a coal blast.
22,	John Brill	St. Nicholas	Leg torn off by a boiler explosion—*died.*
23,	Peter Brocius	Big Mine Run	Severely injured by a scaffold.
June 16,	A miner	Beaver Run	Leg broken by a fall of coal.
21,	Peter Monaghan	Shenandoah City	Severely burned by fire-damp.
21,	Frederick Danesocvich	Thomas	Severely injured in a coal shute.
21,	Michael Senkafshi	....do	Severely injured by falling into a shute.
22,	Joseph Cole	Beaver Run	Leg broken by a fall of coal.
22,	John Lawson	Reno	Severely injured by a fall of coal.
28,	Conrad Seilbach	Plank Ridge	Severely injured by a blast.
28,	A driver boy	Reno	Foot crushed by wagons.
July 3,	William Jones	Tunnel	Arm broken; he fell into a shute.
6,	Patrick Naughton	Big Mine Run	Severely crushed by wagons.
10,	John Williams	Bear Run	Slightly burned by fire-damp.
10,	Daniel Lardam	Oak Hollow	Severely injured in the mines.
15,	John Johns	West Shenandoah	Severely injured by a fall of coal.
16,	Patrick Haughney	Focht & Whittaker	Severely injured by a fall of coal.
16,	John Thomas	Indian Ridge	Arm and ankle broken by a fall of coal.
16,	Michael Cassady	....do	Fingers cut off by a fall of rocks.
17,	Michael Sullivan	Plank Ridge	Terribly injured by a blast.
17,	James M'Laughlin	Honey Brook	Fatally injured by a fall of coal.
17,	Benjamin Kantner	West Shenandoah	Arm dislocated by a fall of rocks.
20,	William Temple	Shenandoah	Arm and fingers broken by wagons.
20,	A miner	Suffolk	Leg broken by a fall of coal.
24,	Henry Geise	Beaver Run	Severely injured by a fall of coal.
25,	Edward Magettigan	Boston Run	Severely burned by fire-damp.
25,	John Maguire	....do	Severely burned by fire-damp.
26,	William Lyon	Glendon	Severely burned by fire-damp.
26,	George Lyon	....do	Severely burned by fire-damp.
28,	John Dougherty	Lost Creek	Fatally injured by a fall of coal—*died.*
28,	A miner	Beaver Run	Side injured by a fall of coal.
29,	Patrick M'Quade	Plank Ridge	Legs broken by a fall of coal.
29,	Enoch Walters	New Boston	Severely injured by a blast.
Aug. 2,	Edward Combs	Shenandoah	Leg broken by a fall of coal.
3,	Edward Valentine	Thomas	Foot crushed by wagons.
3,	William Lukenbill	Tunnel Ridge	Severely injured by a dumper.
4,	Thos. Kavanagh	Plank Ridge	Thigh broken by a fall of coal.

Aug.	12,	Edward Gettings	St. Nicholas	Hand cut off by a fall of coal.
	12,	Robert Gone	Shenandoah City	Hand crushed by spragging wagons.
	20,	A miner	....do	Ribs broken by a fall of coal.
	23,	A driver boy	Thomas	Fingers cut off by wagons.
	23,	Isaac Chadst	Girard	Head crushed by a falling plank.
	23,	Patrick Malluy	Plank Ridge	Side crushed by wagons.
	24,	Charles Gross	Koh-i-noor	Head and neck injured by a falling roof.
	25,	Charles Dunleavy	Shenandoah City	Shoulder and ribs crushed by fall of coal.
	25,	Thomas Buylen	Bear Ridge	Legs broken by a fall of coal.
	25,	John Cunningham	....do	Eyes injured by a piece of coal.
	25,	Michael Curley	Shenandoah City	Nearly smothered by a rush of gangway coal.
	25,	Michael Keefe	....do	Severely injured by a fall of coal.
	25,	Edward Conlon	Turkey Run	Severely injured by a fall of coal.
	27,	Thomas B. Reese	Thomas	Head injured by a fall of coal.
	31,	Patrick LaVelle	Girardsville	Severely crushed by a rush of coal.
	31,	Samuel Steinhilbert	Big Mine Run	Severely crushed between wagons and props.
	31,	William W. Lerors	Girardsville	Hands severely cut by a fall of coal.
	31,	Philip Evans	Girard	Back crushed by a fall of coal.
Sept.	1,	William Lambert	Gilberton	Body pierced by spout of an oil can.
	1,	Henry Schuyler	Bear Ridge	Badly injured by a rush of coal.
	4,	John Osman	Otto	Severely burned by fire-damp.
	4,	Henry Osman	....do	Severely burned by fire-damp.
	9,	Edward Williams	Suffolk	Arm broken; run over by dirt wagon.
	9,	Frank Lewis, boy	Wm. Penn	Fell off a mule into the sump.
	9,	George Quinn	Plank Ridge	Hand crushed by a fall of coal.
	10,	Thomas Dooley	Turkey Run	Injured by a rolling log.
	11,	Frank Heaton	Mahanoy City	Fatally injured by a fall of slate—*died.*
	14,	William Tresville	Furnace	Severely crushed by a fall of coal.
	14,	James Harris	Lawrence	Severely burned by fire-damp.
	14,	Reese Reese	Tunnel Ridge	Hand crushed by wagons.
	18,	Benjamin Tibby	Wm. Penn	Leg crushed by a fall of coal.
	18,	Michael Garvey	Koh-i-noor	Nearly crushed to death by a rush of coal.
	18,	His assistant	...do	Nearly crushed to death by a rush of coal.
	18,	John Leary	Suffolk	Terribly burned by fire-damp.
	24,	Joseph Dillman	West Shenandoah	Severely crushed by a fall of coal.
	24,	Jacob Schrader	....do	Severely crushed by a fall of coal.
	24,	Washington Brocius	...do	Severely crushed by a fall of coal.
	30,	Joseph Murphy	Bear Ridge	These four men were covered up by a rush of coal and had to be relieved by the miners of the Lawrence colliery.
	30,	David Evans	....do	
	30,	Ebenezer Evans	....do	
	30,	Two miners	....do	
	30,	Charles Kerby	Girard	Fatally injured by a fall of rocks—*died.*
Oct.	4,	John Kelley	St. Nicholas	Severely burned by powder.

NAMES OF PERSONS WHO WERE MAIMED AND INJURED IN SHENANDOAH DISTRICT—*Continued*.

DATE.	Names of maimed persons.	Names of collieries.	Remarks.
Oct. 5,	John Harrold	Knickerbocker	Shoulder crushed by a fall of coal.
5,	Dan. Murry	....do	Leg broken by a fall of coal.
5,	Frank Thomas	Primrose	Leg broken by a fall of coal.
6,	Thomas Cain	Plank Ridge	Thigh broken by a fall of coal.
7,	William Thomas	Mahanoy City	Leg broken by a fall of coal.
12,	William Southerns	Focht & Co	Spine injured by a fall of coal.
21,	Ebenezer Davis	Tunnel Ridge	Ribs broken by a fall of coal.
22,	Michael Loftes	Plank Ridge	Eye destroyed by a piece of coal.
23,	Michael Durkin	Koh-i-noor	Arm broken by a blast.
23,	Anthony Stack	Focht & Co	Foot severely injured by a spike.
24,	Samuel Ramsdale	Beaver Run	Collar-bone broken by a fall of coal.
24,	Andrew Hanick	Tunnel Ridge	Leg broken by wagons.
27,	John Hindrie	Koh-i-noor	Fingers cut off by a chain.
Nov. 5,	James Shields	Focht & Co	Slightly injured in the screens.
8,	Anson Smith	Ronoke	Leg crushed in the rollers.
13,	John Cohoon	Elmwood	Leg broken by wagons.
13,	Joseph Kerby	Fisk	Leg broken by the breaking of slope chain.
16,	A miner at	Lost Creek	Slightly injured by a fall of coal.
16,	His assistant	....do	Slightly injured by a fall of coal.
27,	Owen Dixon	Colorado	Severely burned by powder.
27,	John Keegan (boy)	Beaver Run	Wrist fractured by a dumper.
27,	Michael Learey	Suffolk	Severely burned by fire-damp.
27,	A miner	Mahanoy City	Legs broken by a fall of coal.
Dec. 1,	Nicholas Burgowin	Suffolk	Severely burned by fire-damp.
1,	Jacob Grimm	....do	Severely burned by fire-damp.
1,	Walter Gibbs	....do	Severely burned by fire-damp.
1,	A miner	....do	Severely burned by fire-damp.
1,	Six others whose names were not reported.		

One hundred and fourteen persons were maimed and injured, 4 of whom died subsequently of their injuries, 52 of whom are maimed for life.

It is gratifying to know how large a diminution there is in the death roll of this district this year. Eighteen fatal accidents less than last year, when the death roll was 44 fatal and 95 injured, leaving 20 widows and 71 orphans; while this year there are 26 fatal and 114 injured, leaving 11 widows and 49 orphans. This happy result exceeded our most sanguine expectations, showing that a radical change has taken place in the conduct of the men who are employed in and about these collieries, as well amongst the mine managers and those having charge of the same. Nothing will conduce so much to still reduce mine casualties as a respectful obedience to the law and to the rules governing the working of collieries. And every lover of human happiness will rejoice at the present information here given, and will hope for a still greater diminution in fatal accidents.

Second District.

Twenty-six fatal accidents occurred in and about the collieries of Shenandoah district during the year, against 44 cases of fatal accidents last year, being 18 deaths less this year. This district had its territory diminished on the 22d of September by adding to Shamokin district all the collieries north of the Broad Mountain, in Schuylkill county, and west of the eastern limits of the town of Girardsville, together with all the collieries in Columbia county

The Character of these Fatalities.

Lost their lives by falls of coal	8
Lost their lives by falls of rock and slate	3
Lost their lives by explosion of boilers	3
Lost his life by being crushed by wagons	1
Lost his life by being crushed by a cage	1
Lost his life by breaking of ropes and chains	1
Lost his life by being crushed in machinery	1
Lost their lives by being crushed in the rollers	4
Lost his life by disease of the heart	1
Lost his life by falling off a building	1
A lady lost her life by falling into an open breast	1
Lost his life, overcome by work and sickness	1
Total cases of fatal accidents	26

Leaving 11 widows and 48 orphans; and 106 injured persons, 52 of which are maimed for life.

Bear Ridge Colliery.—*Operated by the Bear Ridge Coal Company.*

It is situated north of Mahanoy planes, on the Girard estate. It consists of a new tunnel opening the E vein, in coal 25 feet thick. The breasts are worked by single shutes and jugular man-ways in each. Twelve breasts are working; the ventilation of the colliery is good; 69 men are employed inside and 75 outside; there are 4 good engines, of 125-horse power, in use, with 8 new boilers; 14,000 cubic feet of air supplied by a 20-horse power fan; 3,606 feet of track are used, with the average shipments=400 tons per day; 9 mules and 32 wagons are in use. I found the colliery in very good condition.

East Mahanoy Colliery.—*Operated by Focht & Whittaker as a shaft colliery, and mine the Buck Mountain vein in 16 feet of coal.*

The air-courses are of an area of 30 square feet. The breasts are worked with two shutes in each, with 85 yards of run. The pillars are 7 yards thick. Ventilation is often difficult, as the top runs to the 7-foot vein. Preparations are now going on that will remedy this defect. Counter-lifts are worked by means of inclined planes, and ventilation here is tolerably good. The gangway communicates with Bowman's mine. The force consists of 188 hands; 4 engines, of 125-horse power, with 6 boilers, all in good condition; 17 mules, 68 wagons and 2,450 yards of track are in use; shipments at 350 tons per day. I found everything connected with the colliery in very good order, and still improving any deficiencies that is necessary to require attention and security and insure success.

Glendon Colliery (near Mahanoy City.)—*Operated by J. B. Boylen, on the Delano lands.*

The coal may be sent by the Lehigh Valley or the Philadelphia and Reading railroads. The 7-foot vein is worked by a slope. The breasts have each but one shute and 5-yard pillars. Ventilation is produced by the operation of a steam fan. The air-ways and traveling-ways are good. A tunnel north opens the Buck Mountain vein in 12 feet of coal. The whole is well ventilated by a 25-horse power fan, supplying a sufficient quantum of air; 4 engines, of 95-horse power, with 11 good boilers; 1,545 yards of track are used, with 10 mules and 62 wagons; 126 men and 38 boys are employed; the shipments will average 300 tons per day.

Hartford Colliery (near Mahanoy City.)—*Operated by Richard Phillips & Co., upon the lands of the P. & R. C. & I. Co.*

It consists of a tunnel opening the Skidmore or D vein. Seventeen breasts are working on a north dip in excellent coal. Ventilation is produced by natural means. I find the colliery in good order. Its future prospects are promising. One engine, of 20-horse power, and 2 boilers in use; 60 men and 27 boys are employed; 5 mules, 25 wagons and 1,000 yards of tracks are used. At present the colliery is operated by joint-stock company, and for a colliery its location is admirable.

Delano Colliery (or Oak Hollow.)—*Atkinson & Co., Operators.*

It consists of a slope opening the G vein 110 yards under water level, in 14 feet of coal, and into the basin, which rises eastward, requiring the vein to be worked by counter-lifts. Fourteen breasts are open. Owing to a bad top rock it requires great labor to support it safely. A 20-horse power fan ventilates the mine; there are 3 engines=100-horse power, with 9 boilers, in use; a 40-horse power steam pump and 1 pole pump are used for drainage; 67 men and 44 boys are employed; 7 head of stock and 20 wagons are in use. I found the general condition of the colliery to be in good order.

Wm. Penn (shaft) Colliery.—*Operated by the Wm. Penn Coal Company, on the Girard lands.*

This shaft opens the E vein on its north dip, in 45 feet of coal, and worked in two lifts, working 56 breasts, each ten yards wide, backed by 8-yard pil-

lars. Ventilation is produced by the operation of a 30-horse fan, and to all appearance renders satisfaction. The production of coal for the year exceeds 112,000 tons. Twelve engines=367-horse power, with 16 good boilers, are in use; 300 men and 51 boys are employed; 45 mules and 159 wagons are in use.

Lehigh, No. 3.—*Operated by the Philadelphia Coal Company, on lands of Girard estate.*

The E vein is opened by 2 slopes at this colliery, one of which is only a single track on its lower lift, from which level a breast of coal will be worked up and timbered to the foot of the by-slope. That will be ready to be used as an additional lift when the present one has been worked off without creating any additional expense to the company. The practical management of this colliery reflects great credit on Col. D. P. Brown as its general manager and resident engineer. Ventilation is very good, and produced by a 20-horse power fan, having all legal appliances fully attached. I find the condition of the colliery fully up to the requirements of law. Seven engines=265-horse power, with 10 good boilers, in use; 152 men and 84 boys are employed; 10 mules, 55 wagons, are in use. Shipments per annum, —— tons.

Mahanoy City Colliery.—*Operated by the P. & R. C. & I. Co.*

The E vein is open by a slope 110 yards deep in 18 feet of coal, and the lift is worked by a counter lift in connection with the main one. The Primrose vein is opened by a tunnel in 16 feet of coal. A new lift is to be sunk shortly which will re-open these veins, but on a larger scale for supply. Compressed air will be used as a moter for these engines. Ventilation is produced by 2 fans, a 10-horse power and a 20-horse power, which supplies an adequate amount of air for all purposes. Eight engines of 530-horse power, with 18 good boilers, in use; 123 men and 61 boys are employed; 21 mules and 80 wagons are in use. Annual shipments, —— tons.

Stanton (slope) Colliery.—*Operated by Miller, Hock & Co., of the lands of John Gilbert and P. W. Sheafer.*

It consists of a double track slope sunk on the south dip of the E vein, which has been extensively worked for the last 6 years. It is contemplated to open the D and B veins by a tunnel driven north. Ventilation is produced by a 10-horse power fan, which renders satisfaction. I find the colliery, with all its appointments, in a very good condition. Five engines=242-horse power, with 13 good boilers, in use; 150 men and 85 boys are employed; 18 mules, 51 wagons, are in use. Annual shipments, —— tons.

Girard Mammoth Colliery.—*Operated by the Donaldson Brothers, on lands of the Girard heirs.*

It consists of a tunnel level and a slope openings on the E and B veins. The slope coal is hoisted out of the slope and unloaded by a self-acting dumper into the tunnel level, where it is again reloaded and hauled to the breaker by a locomotive. These veins run from 16 to 20 feet in thickness.

Ventilation is good and is produced by a 25-horse power Grubal fan. Eight engines=265-horse power, with 12 good boilers, are in use; 25 mules and 90 wagons are in use; 150 men and 53 boys are employed. Monthly shipments, 7,000 tons.

TUNNEL RIDGE.—*Operated by George W. Cole & Co., on lands of the P. & R. C. & I. Co.*

It consists of a slope opening the E vein 118 yards deep in its north dip in 35 feet of coal, and a tunnel driven south opens the D and B veins on their north dip. The top split of the E vein is 16 feet thick, the bottom split is 12 feet. The D vein is 14 and the B vein is 7 feet thick, or 49 feet of good workable coal is open in the colliery. A sufficient chain course of coal is left at breast tops to support the old level, and is considered safe for all purposes. Ventilation is produced by a 10-horse power fan and 3 furnaces, and appears to afford an ample supply of air for the men. Seven engines=300-horse power, with 15 good boilers, are in use; 197 men and 81 boys are employed; 26 head of stock and 58 wagons are in use. Annual shipment, 120,000 tons.

BEAR RIDGE TUNNEL, (A NEW OPERATION.)—*Operated by the Bear Ridge Coal Company, on lands of Girard heirs, but the improvements are erected upon the Gilbert estate.*

It consists of a tunnel opening the E vein northward in 25 feet of coal. It recently went into operation. The breasts are worked with a single-planked manway, and a manway in each alternate pillar in its centre turning in right and left to each breast. Ventilation is produced by the action of a propeller fan of the Grubal pattern, and of a 20-horse power, and so adjusted as to propel or exhaust the air at will, or as may suit the season of the year best. As the works are all above water-level it makes but very little difference at which course to run it, unless the air courses are properly secured by check-gates to force the air into its legitimate channels, as required by law. Five engines=110-horse power, with 8 good boilers, are in use; there are 100 men and 88 boys employed; 11 mules and 37 wagons are in use.

WARD & OLIVER COLLIERY.—*Operated by said firm, on the P. & R. C. & I. Co.'s lands.*

It consists of a tunnel opening the seven-foot vein on its south dip in 5 feet of coal. Nine full breasts are working at present, but the condition of the colliery is not creditable to the firm. Ventilation is effected in winter by natural air currents, while in summer a furnace is used. One 30-horse power engine hoists the coal and runs the breaker, affording employment to 22 men and 13 boys; 2 mules and 10 wagons are in use; there are 2 boilers in use. The monthly shipments will average 1,200 tons.

KOH-I-NOOR SHAFT (NEAR SHENANDOAH.)—*Operated by Richard Heckscher & Co., on the estate of Gilbert & Sheafer.*

It consists of a first-class shaft, opening the Mammoth vein 140 yards under the surface, in 45 feet of coal, and nearly in the centre of its basin.

The mine is worked in three different lifts or panels, by self-acting planes. In connection with this plan a new slope is nearly sunk to the basin, on an angle of 10° dip. This will open another large body of coal, which as a reserve can be drawn upon as required, so that the colliery has but few, if any in the region, to excel it in its details or economy. There are 60 breasts of coal open, and the general workings of the colliery are all well ventilated by a 50-horse power fan. The air-currents are well secured, so that all working places receive their full supply of fresh and pure air. Mr. Jacob Glover manages the mine in a creditable manner. Water-tanks, alternately hoisted, effect the drainage, doing away with the use of pump rods, pump columns and such trapping. Sixteen engines=660-horse power, with 14 boilers, are in use; 230 men and 53 boys are employed; 30 mules and 140 wagons, with 5,280 yards of tracks, are used; annual shipments will average —— tons.

Plank Ridge (near Shenandoah City.)—*Operated by the P. & R. C. & I. Co., upon their own lands.*

It consists of a double cage-way shaft, sunk to the E vein. The coal of this level is nearly exhausted, but a slope is sunk on the north dip of the vein 200 yards east, and sufficiently deep to allow it to be worked in three lifts, and touching an anticlinal axis in its lower east gangway. On its west the vein is open by a slope, 280 yards deep, and to the bottom of the basin, which is connected with the workings of the Indian Ridge colliery, from whose shaft workings the largest portion of this coal is hoisted out. Ventilation is not adequate to keep so large a mine in good working order. There is a large amount of powder used daily. The air-currents are moved only by natural means, so it is impossible to get adequate ventilation established. Nine engines=390-horse power, with 17 boilers, are in use; 300 men and 79 boys are employed; 34 mules and 100 wagons are in use; annual shipments will average —— tons.

Beaver Run (east of Mahanoy City.)—*Peter Bowman, Operator, on the lands of the Lehigh Valley Railroad Company.*

It consists of a tunnel opening two small and irregular veins, never proving to be a profitable investment, though Mr. Bowman has evidently sacrificed time and money in its developments. The prospects in the future are not encouraging. When we consider the expense attending the opening of 400 yards of tunnels, besides all other expenses, public sympathy must incline to his favor. Ventilation, consequently, cannot be expected to be what it should be, but the absence of noxious gases is a consolation in this case. One engine, of 40-horse power, with 2 boilers, are in use; 41 men and 13 boys are employed; 8 mules, 36 wagons and 1,760 yards of track are in use; monthly shipments=1,500 tons.

King, Tyler & Co.—*Operated by King, Tyler & Co., on lands of the P. and R. Coal and Iron Company.*

It consists of a tunnel driven south, cutting the B vein in 12 feet of coal, with 35 yards of breastings and 4 yards in pillars By natural currents the mine receives its ventilation, and from its well appointments it affords a

good supply of air. The power and force here employed consists of one engine, of 10-horse power, with 2 boilers; 24 men and 13 boys are employed; 8 mules and 30 wagons are in use; monthly shipments, — tons.

SHENANDOAH CITY OR THE LOST CREEK COLLIERY.—*Operated by the Philadelphia Coal Company, on the Girard Heirs Estate.*

It consists of 2 slopes opening Nos. 2 and 4. No. 2 is the old slope, of double track plan, while 100 yards east of No. 2 No. 4 slope is sunk; 200 yards deeper, while on its west gangway, and directly under the old slope, Mr. D. P. Brown contrives to work up a breast and timber it as a slope to connect the old one without further cost to the company, as is the case at Lehigh, No. 3, which is his plan. The principle work doing in No. 2 is robbing out pillars and draining the mine; while the No. 4 slope is driving gangways, air courses and second outlets, and starting breastings; all of which work carries no expense.

Six engines=440-horse power, 3 local locomotives and 16 boilers are in use; 228 men and 60 boys are employed; 16 mules, 70 wagons and 2,600 yards of tracks are used; 2 steam pumps of 500 horse power are in use; annual shipments will average — tons.

ELLANGOWAN (SHAFT) COLLIERY.—*Operated by the P. and R. Coal and Iron Company, on their own lands.*

Situated at Mapledale, midway between Mahanoy and Shenandoah cities. It consists of a shaft sunk 111 yards deep to the middle split of the E vein. The E vein is here found in three prongs, namely: The bottom prong is 12 feet thick, the middle prong is 11 feet, and the upper prong is 10 feet thick, with 194 yards of breast runs, which will bear to be divided into two lifts each, and worked by counter-workings, which when opened for full mining will give 12 gangways. West of the shaft a tunnel opens the Primrose or G vein, which when opened will again afford 4 more gangways, and which will allow of counter-workings 2 lifts, making 8 gangways of 95 yards of a lift; the colliery will afford 20 gangways, with 2½ mile run to each. The colliery, when under a full and fair working order, will be able to produce 1,500 tons of coal per day. The coal mined here at present is manufactured at the Knickerbocker breaker. Thirteen breasts are working; a 40-horse power fan is used for ventilation, which affords an ample supply for present purposes. Two engines, of 40-horse power each, with 6 boilers are in use; 60 men and 6 boys are employed; 13 mules and 60 wagons and 2,600 yards of tracks are in use.

GRANT COLLIERY, NEAR MAHANOY TUNNEL.—*Operated by Moodey & Co., on lands of the Lehigh Valley Railroad Company.*

It consists of 2 lifts opened by tunnels north opening the D and B veins. The B vein is still working, which is rendered somewhat difficult to work owing to an irregular top. Ventilation so far is produced by natural means but is inadequate for a full supply. Three engines, of 65-horse power, with 4 boilers are in use; 63 men and 21 boys are employed; 9 mules and 28 wagons are in use.

THOMAS COLLIERY, AT SHENANDOAH CITY.—*Operated by the Thomas Coal Company, on the Girard Estate.*

It consists of 2 slopes opening the separate splits of the E vein, a tunnel east of this slope opens the D and B veins. The coal in the E vein has been well extracted by main and counter-working. The coal on the tunnel lifts of the D and B veins are well exhausted, but breastings are so far untouched. A new breaker has been erected for preparing coal from new openings; and promises to become, in future, one of the first collieries in the district. Two locomotives are used, instead of animal power, to do the hauling in the mine. A 20-horse power fan produces an adequate supply of fresh air for ventilating the mine, which has rendered satisfactory results. Nine engines=500-horse power, with 16 good boilers are in use; 3 locomotives are used for haulage; 154 men and 112 boys are employed in and about the colliery. I am forced to acknowledge the ability and good judgment of Mr. Wasley in his management of this colliery.

SUFFOLK COLLIERY.—*Operated by Suffolk Coal Company, on lands of the P. and R. C. and I. Co., near St. Nicholas.*

It consists of a slope and water level drift openings. The slope opens the Primrose vein in 10 feet of coal, and is ventilated by means of air courses driven along the gangways in separate openings, which air can be utilized at will A 20-horse power fan is used in connection with ventilation, which has the desired result. The drift openings are upon the different branches of the E seam, and are tolerably well exhausted of coal, but 18 breasts are still working. The slope works produce some fire-damp gas, and it becomes a necessity to have it removed. As yet the excavations are not extensive, but enough has been demonstrated to warn those in charge to keep it in due bounds. Four engines, of 109-horse power, with 11 boilers are in use; 102 men and 30 boys are employed; 1 locomotive, 15 mules and 66 wagons are in use. Monthly shipments, — tons.

FURNACE COLLIERY.—*Operated by Messrs. Atkins & Bros., on Gilbert & Shaefer's lands.*

It consists of two tunnel openings on the B vein. A tunnel opens the E vein near the bottom of the basin. The coal of both lifts has been nearly exhausted. The B vein is open from the old tunnel in a small basin, which is likewise worked out pretty well. A furnace supplies ventilation for these works. A locomotive is used for animal power. The effects of its steam and rarified air are hurtful to the men. The present system of ventilation in use must be reversed in order to improve it. One engine, of 30-horse power, with 2 boilers, are in use; 95 men and 35 boys are employed.

PRIMROSE COLLIERY (NEAR MAHANOY CITY.)—*Operated by Primrose Coal Company, on lands of the Lehigh Valley Railroad Company.*

It consists of a slope opening the G or Primrose vein in its basin, allowing of working both south and north dips of the vein. The E vein is open by a tunnel driven south. The character of its coal is somewhat affected by the fragmentary condition of the roof rock, not often found elsewhere. In connection with the E vein a tunnel from the E vein opens the 4-foot

vein, and a continuation of this tunnel opens the D vein in 4½ feet of coal, and its still continuation opens the B vein in 5 feet of coal. There are 32 breasts working in all these openings. A 10-horse power fan supplies ventilation for all these different panels. Four engines, of 160-horse power, with 10 boilers, are in use; 112 men and 38 boys are employed; 15 mules and 50 wagons are in use.

Focht & Whittaker.—*Operated by Focht & Whittaker, on lands of the Lehigh Valley Railroad Company, at Mahanoy City.*

It consists of a 60 feet deep shaft, opening the B vein, in 16 feet of coal. An outlet is now ready to receive a fan for ventilating the mine. A counter-lift is worked by inclined planes. Twenty-nine breasts are open. Ventilation is produced by the use of a 10-horse power fan, but found to be inadequate to furnish a full supply of air for such extensive openings. Three engines, of 130-horse power, with 4 boilers, are used; 163 men and 50 boys are employed; 15 mules and 75 wagons are in use.

Honey Brook Mines.—*Operators, Lehigh and Wilkesbarre Coal Company, on the lands of said corporation*

It consists of four separate and distinct slope openings, each one a colliery in itself, with all and singular the premises thereto belonging, to wit: The No. 1 slope is sunk 185 yards in two lifts, being the oldest and most extensively worked, having over 15,000 yards of gangway opened. No. 3 slope is 240 yards deep and in the basin, touching the synclinal axis in its present depth, and both north and south dips. The Wharton vein is open on this lift by a tunnel, and is also extensively worked. No. 4 slope opens the E vein, 275 yards deep, on the eastern end of the basin, and working the south and north dips westward. Here a tunnel, run north, opens the Wharton vein in 8 feet of coal. No. 5 slope is open into the E vein in the western end of the basin. In connection with these extremely extensive works there are available traveling roads and outlets to all. The ventilation of all these mines is effected by furnaces and steam exhausts, which only supply a moderate quantum of air. The substitution of fans of the requisite capacity would cost less, and have the desired effect of improving the ventilation. There are 14 steam engines, with 2,165-horse power, and 59 steam boilers in use; 795 men and 142 boys are employed; 63 mules and 400 wagons, with seven miles of tracks, are in use; annual shipments will average —— tons.

Shenandoah City Colliery.—*Operated by J. O. Rhoades for James Neal, trustee, on lands of the P. & R. C. & I. Co.*

It consists of a slope and drift opening. The E and B veins have been extensively worked for the last 13 years. On the gangway of the slope, some 11,711 yards east, a new slope has been sunk to the basin, and still further east of this another slope has been opened, which connects the Plank Ridge workings. The drift coal is 18 feet thick, and has been extensively worked by a counter-level and inclined planes. Ventilation is produced by a fan of 20-horse power, while the drift works are ventilated by natural means. Nine engines, of 338-horse power, with 12 boilers, are in use; 295 men and 69 boys are employed; 26 mules and 60 wagons are in use.

WEST SHENANDOAH.—*Operated by the P. and R. Coal and Iron Co., on Gilbert & Sheafer's estate.*

It consists of a slope opening the B vein in two lifts. The old lift is extensively worked. The shaft opens a large body of flat-lying coal east of the slope workings, and all prepared at the breaker. At present the mines are ventilated by furnaces, but a 20-horse power fan is nearly ready to be put into operation for a better system of ventilation. There are 3 engines =100-horse power, with 8 good boilers, in use; 121 men and 73 boys are employed; 10 mules and 60 wagons are in use.

KNICKERBOCKER COLLIERY.—*Operated by the P. and R. C. and I. Co., on the Company's land, and 1½ miles west of Shenandoah City.*

It consists of a slope and drift opening on the G or Primrose vein, a tunnel opens the north dip of the vein; on the western end of the basin an incline plane opens into a flat body of coal, another tunnel opens the south dip of the seam, and another tunnel opens the bottom split of the E vein in 14 feet of coal. The general condition of the colliery is very promising. Two steam fans produce ventilation, which is quite satisfactory. No smoke or standing gases are met with in the mine. Six engines, of 185-horse power, with 11 boilers are in use; 151 men and 83 boys are employed; 20 mules and 80 wagons are in use.

INDIAN RIDGE COLLIERY.—*Operated by the P. and R. Coal and Iron Company, on their own lands.*

It consists of a shaft sunk on the E vein in its first basin, and has been extensively mined this last six years. The upper coal is worked by counter levels, the coal lowered on planes to the foot of the shaft, and thence hoisted out. All the underlying veins in this colliery, as well as all in the Shenandoah collieries, are not yet worked, and consequently very large fields of coal are yet untouched in this locality after the E vein coal may have been exhausted. Ventilation is produced by a 40-horse power steam fan, which supplies an abundance of air for all purposes. The general condition of the colliery and all its appointments are good; 72 breasts are working on 3 gangways; 221 men and 108 boys are employed; 9 engines, of 658-horse power, with 18 good boilers are in use; 21 mules and 100 wagons are in use; the monthly shipments will average 20,000 tons.

CENTENNIAL COLLIERY.—*Operated by the P. and R. Coal and Iron Company, on Gilbert & Sheafer lands.*

This colliery consists of a new slope opening. The south dip of the Mammoth vein is 100 yards deep, and when completed will constitute one of the largest producing collieries of the region. One 40-horse power engine, with 4 boilers and 3 small steam pumps are the only power yet needed; 28 men are employed in sinking and working at the colliery.

ELLANGOWAN DRIFTS.—*Operated by the P. and R. Coal and Iron Company, on their lands at Mapledale.*

It consists of water-level openings, in which the Mammoth, Orchard and Primrose veins are extensively worked above water-level, while the new shaft already described will open the same veins on their lower lifts, which will constitute this colliery one of the best producing collieries in the county. Ventilation is effected by a 40-horse power fan, supplying an adequate amount of air. Three engines, of 70-horse power, with 6 boilers are in use; 200 men and 85 boys are employed; 20 mules and 100 wagons are in use.

BANKS & CO.'S COLLIERY, OF SHENANDOAH.—*Operated by said firm, on the Gilbert & Sheafer estate.*

It consists of a drift opening on the G vein, for home and domestic use, employing 10 hands, and selling 500 tons per month.

DAVIS COLLIERY, OF SHENANDOAH.—*Operated by Mr. D., on lands of Gilbert & Sheafer.*

It consists of a single slope, on the Orchard vein, 30 yards deep, employing 6 hands; a 5-horse power engine hoists the coal and runs the breaker, with only one boiler.

JONES & CO., SHENANDOAH.—*Operated by the said firm, on the Gilbert & Sheafer lands.*

It consists of a drift opening on the Primrose vein, and affords employment to 8 men; one engine, of 6-horse power, with one boiler is used; and one mule with 4 wagons.

LEHIGH, NO. 4, COLLIERY, NEAR SHENANDOAH.—*Operated by the Philadelphia Coal Company, on the Girard estate.*

It consists of a slope opening the E vein on its south dip, and is a sister colliery to the Lost Creek colliery, and situated in the centre of the tract, between both collieries. It is intended to sink to the basin, and to erect one of the most famous breaker buildings in the whole region, for its use. The vast body of coal that underlies this tract is simply immense, and under the direction of Col. D. P. Brown it will be a success.

COMMUNICATION.

To His Excellency, JOHN F. HARTRANFT,
Governor of the Commonwealth of Pennsylvania:

SIR:—In conformity with the requirements of an act of General Assembly of the Commonwealth, approved the third day of March, A. D. 1870, entitled "An Act providing for the health and safety of persons employed in coal mines," I have the honor to herewith submit to you my report upon the condition of the collieries in my district, and also the number of fatal and non-fatal accidents that occurred during the year. These statements are in tabulated form, with remarks on the character of the same.

I also am able to show the number of hands employed in and about these collieries, the number and horse power of the steam engines and boilers in use, and other matter in detail in their relation. I am pleased to be able to inform your Excellency that the collieries are in much better condition and are receiving better attention than was the case heretofore.

I earnestly desire a strict compliance with the requirements of the sundry provisions of the mining law, both by the superintendents and miners, as with them it rests; and they are the responsible parties for a large number of these casualties that so frequently brings sorrow and grief to so many firesides in our midst.

I do find a large number of our operators desirious of making the necessary and safe improvements in and about their collieries. This they find to be greatly to their advantage, besides the men will perform more work when there is an evidence of security than when such is not the case. I do find the engineers and their assistants rapidly improving in their professions, giving better attention to steam boilers and machinery now than they had done before.

I also find a marked improvement in the practice and knowledge of the bosses generally, and in the system now adopted for mining and ventilation of mines. That with ordinary precaution I will hazard the opinion that at least one-third the casualties of the district could be diminished, which would be a consummation devoutly wished for by all.

On the twenty-second of September the examining board re-districted the territory which allotted to me all the collieries in Dauphin, (5,) all in Northumberland, (30,) all in Columbia, (12,) and 9 in Schuylkill. In discharging my duty I traveled 5,168 miles to and from these collieries and attended 34 inquests. Thirty-eight persons lost their lives and 106 were injured, leaving 13 widows and 49 orphans. The operators and miners have my greatful thanks for courtesies and civilities, although my duties shall be sternly discharged. With a confident hope I look forward for better improvement.

I am, with great respect,

Your obedient servant,

WILLIAM HEMINGRAY,
Inspector of Shamokin district.

Names of persons who were killed in the mines of Shamokin district in the year ending December 31, 1875.

DATE.	Names of persons that were killed.	Names of collieries.	Wife.....	Children.....	Remarks.
Jan. 1,	Daniel Segar	Colket	1	5	Died of his injuries received in November, 1874.
27,	Andrew Weary	Big Mountain	1	1	Killed by a fall of coal.
March 4,	Albert Baddorf	Williamstown	1	3	Killed by a fall of rocks.
16,	William Bents	Brookside	....	....	Died of his injuries.
19,	Joseph Gantley	Cameron	....	....	Killed by a fall of rocks.
April 29,	Tom Price, boy	Burnside	....	....	Killed by the elevator.
May 6,	Peter Becker	Monitor	....	....	Killed by a fall of coal.
27,	Thos. Edwards	Lykens Valley	1	5	Killed by a fall of coal.
30,	John Conroy	Burnside	....	....	Killed; crushed by wagons.
June 9,	John Murphy	Luke Fidler	1	1	Killed by a fall of coal.
22,	Edward Leonard	Buck Ridge	1	....	Killed by a fall of coal.
23,	Edward Troy	....do	1	....	Killed by a fall of coal.
23,	Mathew Kavanagh, boy	Lincoln	....	....	Killed by gangway roof.
29,	John Berkley	Stewartville	1	1	Killed by a fall of coal.
29,	Chas. Lunkhurst	Burnside	1	5	Killed by a fall of coal.
July 15,	John Thomas	Bear Valley	1	....	Killed by an explosion of powder.
15,	Patrick Maloney	Enterprise	....	....	Killed on the planes by wagons.
20,	Patrick O'Brien, boy	Buck Ridge	....	....	Killed by the dumper; run over his neck.
24,	Caleb Knabb	Brookside	....	....	Killed by a fall of coal.
Aug. 12,	Charles Fesler, boy	Alaska Shaft	....	....	Killed by the elevator.
18,	George Kurlinski	Buck Ridge	1	2	Killed by being run over by wagons.
21,	Peter Hoff	Luke Fidler	1	4	Killed by a fall of rocks.
24,	John M'Mannon	Big Lick	1	2	Killed by a fall of coal.
Sept. 1,	Lewis Cox	Cameron	....	....	Killed by loaded wagons by the breaking of the ring of the slope rope.
1,	William Wingle	....do	....	....	
17,	John Clarey	Union, No. 2	....	....	Killed by a fall of coal in the mine.
25,	William Hancock	Mariam	1	3	Killed by the discharge of a shot.
Oct. 12,	William Jackson	Keystone	....	....	Killed; smothered by gas in a shute.
12,	A. Genski	Enterprise	....	....	Killed by a fall of coal.
16,	Henry Welker	Burnside	....	....	Killed on the plane by a wagon.
29,	Patrick Kelly	Locustdale	....	....	Killed in the breaker machinery.

Nov.	18,	Alfred Steely	Locustdale	....	....	Killed by premature explosion of powder while seated on powder box at dinner; spark from naked lamp ignited powder.
	18,	John Durkin	....do	....	....	
	18,	Mordecia Jones	....do	....	....	Died from effect of above accident.
	18,	Robert Payne	....do	....	....	
	20,	Jacob Phœbic	Henry Clay	....	....	Died of injuries from a blast.
	23,	A. Hunsecker	Hazledell Tunnel	1	4	Killed by an explosion of fire-damp.
Dec.	4,	Anthony Lee	Big Mine Run	....	....	Killed; crushed by the rollers.

Thirty-eight deaths during the year.

Names of persons who were maimed and injured in and about the collieries of the Third or Shamokin district during the year ending December 31, A. D. 1875.

DATE.	Names of persons injured.	Names of collieries.	Remarks.
Jan. 2,	Henry Fry	Bear Valley	Severely injured by a fall of coal.
21,	John Becker	Cameron	Severely injured by wagons.
23,	Jefferson Berger	Big Mountain	Leg and arm broken by a fall of coal.
Feb. 8,	John Berry	Williamstown	Foot crushed by wagons.
23,	David Davis	....do	Leg broken by a fall of coal.
March 8,	Albert Baddorf	....do	Severely crushed by a fall of coal.
19,	James Narey	Cameron	Severely crushed by a fall of rocks. These six men were at dinner, all of whom received severe injuries, and another of the party, named Joseph Ganley, was killed.
19,	George Etly	....do	
19,	Wm. Eddie	....do	
19,	Wm. Baggie	....do	
19,	Reuben Trautman	....do	
19,	David Rhoades	....do	
April 22,	Elias Fire	Buck Ridge	Foot crushed by a fall of coal.
23,	James Swift	Franklin	Knee fractured by a fall of rocks.
23,	James King	Cameron	Foot injured by a drill.
28,	John Silvester	Franklin	Leg broken by a fall of slate.
May 3,	John Scott	Summit Branch mine	Arm broken by a fall of coal.
12,	William Long	Burnside	Foot crushed by wagons.
26,	Michael Farrell	Hickory Ridge	Severely injured by a fall of coal.
27,	A Polander	Luke Fidler	Severely injured by a fall of coal.
27,	Patrick Costello	....do	Severely burned by a cartridge.
27,	George Kreiss	West End	Foot crushed by a fall of coal.
27,	John Ellard	Cameron	Leg broken by a fall of coal.
27,	A miner	....do	Leg broken by a fall of coal.
27,	Samuel Houghten	Buck Ridge	Body crushed by a fall of coal.
June 7,	John Browne	Bear Valley	Badly burned by fire-damp.
7,	Andrew Gearey	....do	Fingers cut off by a fall of slate.
19,	Alexius Ignatovich	Luke Fidler	Severely injured by a fall of coal.
21,	Jacob Marshall	....do	Hand crushed by a fall of coal.
21,	John Conley	Franklin	Severely crushed by wagons.
21,	Joseph Murry	Big Mountain	Hand amputated by a fall of coal.
22,	John Evans	Pyne	Leg broken by a fall of coal.
22,	Abraham Stranser	George Fales	Severely crushed by a fall of coal.
22,	John Cresman	Buck Ridge	Severely crushed by a fall of coal.
22,	Michael Bonavits	Lower Rauch Creek	Shoulder crushed by a fall of rocks.
July 2,	Frank M'Cormack	Luke Fidler	Terribly crushed by a fall of coal.

	2,	Henry Conners	Mariam	Leg broken by a fall of coal.
	10,	John Simmons	Cameron	Severely injured by a fall of coal.
	13,	John Martin	....do	Severely injured by a fall of coal.
	17,	John Ellard	....do	Severely injured by a fall of coal.
	19,	Jerry Daily	Colket	Severely injured by a fall of slate.
	19,	John Trellsgar	E. Franklin	Severely cut with an axe.
	20,	William Wyre	Colket	Ankle crushed by a dumper.
	24,	Thomas Hewett	Cameron	Severely injured by a blast.
	24,	Edward Buttain	....do	Severely injured by a blast.
	24,	Nicholas Hants	West End	Severely burned by fire-damp.
	24,	Charles Mauder	Colket	Hand injured by a fall of coal.
	25,	David Pott	Middle Creek	Terribly injured; he fell 100 feet deep into a shaft.
Aug.	7,	Martin Kavanagh	Cameron	Severely injured by a fall of coal.
	10,	Robert Camp	Reliance	Severely injured by a fall of coal pillar.
	10,	Richard Phillips	Big Mountain	Severely injured by a fall of slate.
	11,	John Zimmiman	West End	Severely crushed by wagons.
	11,	Thomas Brannan	Big Mountain	Back injured by a fall of clay.
	11,	Morris Downey	Hickory Ridge	Back injured; he fell 60 feet into a shaft.
	12,	Frank Pershing	Henry Clay	Arm broken by a fall of coal.
	12,	Joseph Bromall	Big Mountain	Legs crushed by a fall of coal.
	12,	Robert Hughes	Greenback	Foot crushed by wagons.
	12,	Edward Reese, Sr	Short Mountain	Severely injured by a rush of water on gangway.
	12,	Edward Reese, Jr	....do	Severely injured by a rush of water on gangway.
	12,	A Polander	Excelsior	Severely injured by a fall of coal.
	21,	Peter Collier	....do	Severely injured by a fall of coal.
	31,	Thomas Cahil	Luke Fidler	Leg injured by a fall of coal.
	31,	Lewis Wallers	Excelsior	Hand injured by a fall of coal.
	31,	Alex. Campbell	Big Mountain	Hips and eyes injured by a fall of coal.
	31,	Joseph Athy	Colket	Severely injured; a 26 foot collar fell on him.
	31,	James Jones, Jr	....do	Eye destroyed by a piece of coal.
Sept.	1,	Jonas Romberger	Cameron	Leg broken by the breaking of a chain.
	1,	Henry Zerby	....do	Severely injured by the same accident.
	6,	Edward Burns	Burnside	Leg broken by a fall of coal.
	6,	Joseph Howe	Franklin	Hand severely cut in falling down a breast.
	8,	Joseph Falconbridge	Burnside	Hand severely cut by a fall of coal.
	8,	Frank Barlow	Locust Gap	Terribly injured by a fall of coal.
	9,	John Burns	Buck Ridge	Leg amputated; crushed by wagons.
	11,	Hugh Colton	Big Mountain	Severely injured by a fall of coal.
	15,	Peter Koibel	Franklin	Severely injured by wagons.
	15,	James Roole	Big Mountain	Hands severely injured by powder explosion.
	22,	William Brannan	Enterprise	Head cut by a fall of coal.
	22,	Thomas Anderson	Big Mountain	Terribly injured by a fall of rocks.
	23,	Elias Koons	....do	Foot crushed by prop timbers.

NAMES OF PERSONS MAIMED AND INJURED IN AND ABOUT COLLIERIES OF SHAMOKIN DISTRICT—*Continued*.

DATE.	Names of persons injured.	Names of collieries.	Remarks.
Sept. 23,	John Leamy	Luke Fidler	Internally injured by a fall of rocks—died December 31st.
23,	Charles Newman	Cameron	Hand crushed by a fall of coal.
Oct. 9,	Nathan Beecher	Centennial	Severely injured by falling down the slope.
11,	Patrick Donohoe	Cameron	Leg broken by wagons.
11,	Hugh Colton	Big Mountain	Leg and shoulder injured by a fall of coal.
12,	William Buck	Hickory Swamp	Leg amputated, injured by a fall of coal.
12,	William Jackson	Keystone	Fatally injured by choke-damp—died.
12,	John Hock	Buck Ridge	Foot crushed by wagons.
12,	Alexius Genaski	Enterprise	Fatally injured by a fall of coal—died.
15,	John Regan	Big Mine Run	Ankle broken by a fall of coal.
16,	Henry Weeker	Burnside	Fatally injured—subsequently died.
22,	John Yuram	Henry Clay	Leg broken by a fall of coal.
24,	John Webert	Cameron	Arm broken by wagons.
27,	Henry Feibie	Henry Clay	Severely injured by a blast.
27,	A Polander	do	Severely injured by a blast.
27,	John Boyle	do	Severely injured by a blast.
Nov. 12,	Chas. Schwank	Buck Ridge	Head injured by a fall of coal.
12,	James Browne	do	Leg amputated, injured by the above accident.
16,	Frank Pepper	Locustdale	Hip broken, being crushed by wagons.
17,	Alfred J. Steely	do	All four were fatally injured, a spark from one of their lamps ignited powder in a chest while they were seated upon it taking dinner, none survived the explosion.
17,	John Durkin	do	
17,	Mordecia Jones	do	
17,	Robert Payne	do	
27,	William Reese	Continental	Severely cut with a chisel.
29,	Mathew Kelly	Preston, No. 3	Severely injured by a blast.
29,	Michael Barns	do	Severely injured by a blast.
29,	John Klease	do	Severely crushed by a log rolling over him.
	Five others	Sundry	Slightly injured.

Thus 114 persons were maimed and injured in the Shamokin district during the year, six of whom subsequently died of their injuries, and 44 of whom are maimed for life.

ALASKA (SHAFT) COLLIERY.—*Operated by the P. and R. C. and I. Co.*

The colliery is situated at Alaska Junction of the Shamokin and Mount Carmel Railroad, in Northumberland county. It consists of a shaft opening the E vein on its south dip of 10° in 20 feet of coal. Mining operations are carried on by main and counter lifts. Ventilation is effected by the action of a powerful Grubal fan, located on an air shaft sunk to the anticlinal of the vein, a partitioned section of which has been used for men and mining material. In connection with this fan another fan of the Beadle pattern is located at the main shaft for ventilating purposes. The general condition of the colliery and all its appointments are satisfactory. 20,925 tons of coal have been mined, the engines=385-horse power, with 10 good boilers, a No. 7 Cameron steam pump is used for drainage, and 255 hands are employed.

BEAR VALLEY COLLIERY.—*Operated by John E. Rathbun, on lands of Northumberland Coal Co., 3 miles west of Mount Carmel.*

It consists of a drift opening the Lykens Valley vein in 7 feet of good coal, on a 20° south dip. Improvements are now under way for a more extended development of the mine the ensuing season. One engine, of 8-horse power, with one boiler in use; 12 men are employed on the premises.

BURNSIDE COLLIERY.—*Operated by May, Morgan & Co.*

It consists of a double track slope sunk on the 9-feet vein, and sunk to the basin; the seam is nearly flat; mining in the lower or No. 8 vein is suspended. Ventilation is good, and is produced by a 20-horse power fan. Drainage is effected by a 14-inch pump; 4 engines, of 180-horse power, with 11 boilers, and all their appointments are in good condition. A new slope is being sunk, intending to work the west basin. The opinion is that the colliery will ship a large amount of coal this season; 118,000 tons of coal had been shipped in 1875; 4 fatal accidents occurred during the year; 211 men and 90 boys are employed.

BIG LICK COLLIERY.—*Lykens Valley Coal Company & Summit Branch Coal Company, Lessees.*

The Lykens Valley vein is worked on its north dip by a slope 405 yards deep. The only work doing on its eastern gangway is robbing out pillars. 50 yards to the west of the bottom of this slope a new one is in course of sinking to a depth of 225 yards, counter level gangways are just open, an air outlet connects the whole workings through an opening in the small vein; 191 men and 60 boys are employed at the colliery, steam power=337-horse, with 22 boilers are in use. Under the superintendence of Col. E. G. Savage I find the colliery and all its appointments in a splendid condition for durability and adaptation.

BEAR VALLEY, No. 2.—*Heim & Goodwill, Operators, on lands of the P. & R. C. & I. Co.*

A tunnel south opens the Nos. 8 and 9 twin veins in 8 and 10 feet of coal. The east and west gangways reach the boundary lines. Ventilation

is produced by the action of 2 furnaces, located adjacent to both veins and renders ample satisfaction. Eastward the vein lies flat, while on the west the dip of the vein is 60°. Ninety-one thousand nine hundred and thirty-one tons of coal had been shipped during the season. One engine of 30-horse power, with 2 boilers, are in use; 172 men and 50 boys are employed.

Bear Valley (shaft) Colliery.—*Heim & Goodwill, Operators, on lands of the P. & R. C. & I. Co.*

The shaft is 110 yards deep. A tunnel driven south opens a lower lift than the drift levels on the north dip of these veins. The colliery is now fully developed for shipments. The buildings are substantial and permanent. One engine=150-horse power, with 10 boilers, are in use; for drainage one of Bannan & Allison's 16-inch pumps are used. One fatal accident occurred during the year.

Black Diamond Colliery.—*Swank & Co., Operators, on lands of Henry Saylor.*

The colliery is situated at Green Ridge, near Mount Carmel, Northumberland county. The twin veins are open by drift levels in 6 feet of coal each. Mining is principally confined to breast and pillar work. A new slope is sunk on the No. 8 vein in 8 feet of good coal. Large shipping developments are in progress for doing a large business this next season. Three engines=120-horse power, with 4 boilers, are in use. Five thousand three hundred and thirty-eight tons had been shipped this season, giving employment to 70 hands.

Big Mine Run (west) Colliery.—*Taylor & Steinhilbert, Operators, on lands of Locust Mountain Coal Company.*

It consists of 3 drift levels developing the B or Buck mountain vein in 14 feet of coal. The old drifts are at the boundary lines. Connections are made in the middle drift opening into the Hazledell colliery. The tunnel drift opens the E vein, and its extension opens the D vein in 16 feet of coal. I find the colliery ventilated by a 20-horse power fan. Sixty men and 60 boys are employed; 190-horse power engines, with 13 boilers, are in use, and with all their appointments are in good condition. Coal shipped during the season, —— tons.

Big Mountain Colliery.—*Edward Patterson & Llewellyn, Operators, on lands of the P. & R. C. & I. Co.*

Six drifts are working. Nos. 8 and 9 are worked by slant counters. No. 9 vein is worked westward and crossed the basin, working 8 breasts; and connections are made with No. 1 drift. A 20-horse power fan ventilates both drift workings to satisfaction. Nos. 3 and 4 drifts are ventilated by natural draft. Nos. 1 and 2 drifts, on the east side, are working in 11 feet of coal. Here the ventilation is effected by natural draft, all of which I find in good condition. Three engines of 70-horse power, with 5 good boilers, are in use; 350 men and 100 boys are employed. One hundred and ninety-eight thousand one hundred and thirty-five tons of coal had been shipped.

BROOKSIDE COLLIERY.—*Owned and operated by the P. & R. C. & I. Co.*

It consists of a double track slope and a tunnel opening the Lykens Valley vein in 10 feet of coal. The eastern panel is idle at present. The western panel is driven around the basin, and coming eastward 2 counter lifts are worked in the colliery. Fifty breasts are ready to ship coal from, and 13 breasts are ready in the tunnel level. A 20-horse power fan is used to ventilate the mine, which is found sufficient for the occasion. The pioneers of this extensive operation were Messrs. E. D. and James Savage & Kauffman, who mined and developed the mine extensively until it passed into the ownership of the Philadelphia and Reading Coal and Iron Company, who still increased its facilities for producing coal and making it one of the best collieries in the region. Sixty-eight thousand five hundred and forty-seven tons of coal had been shipped. Two hundred and thirty men and 60 boys are employed; 220-horse power engines, with 22 good boilers, are in use.

BIG RUN GAP COLLIERY.—*James Fennel, Operator, on lands of the Summit Branch Coal Company.*

This is a land sale colliery, consisting of 2 drifts extracting the top coal of the old Short Mountain vein, employing some 20 hands.

NORTH SIDE COLLIERY.—*Edward Miller, Operator, on lands of Summit Branch Coal Company.*

It consists of a drift on the Lykens Valley vein, near Gratztown. One 10-horse power engine, with one boiler, is used, employing eight men, and shipped 3,000 tons of coal.

BIG MINE RUN (EAST) COLLIERY.—*Operated by the P. & R. C. & I. Co.*

It consists of a slope 308 yards deep, opening the E vein on its south dip, in 24 feet of coal, and a pump slope, which is used for men and mine materials. Its eastern panel is comparatively idle. Work has been continued in its western panel. Ventilation is produced by the action of a powerful steam fan. A large supply of air is in circulation in the mine and practically applied. A large quantity of fire-damp gas is generated in the mine, requiring the use of safety-lamp only for all purposes in the mine. The D vein is worked in two lifts in 14 feet of coal. The drift level is being ventilated by natural draft. 330-horse power engines, with 25 boilers, are in use, employing 163 men and 121 boys; 72,122 tons of coal had been shipped.

DIAMOND COLLIERY.—*Alfred Bancroft, Operator, on lands of the P. and R. Coal and Iron Company.*

It consists of a drift for land-sale use. One 15-horse power engine and one boiler in use, employing 12 men. The condition of the mine is safe for working.

VAUGHAN COLLIERY.—*David Vaughan & Co., Operators, on land of the P. and R. Coal and Iron Company.*

This is a small land-sale colliery, taking out the coal from the top level of the old Pioneer. The coal is four feet thick. Six men are employed in mining and preparing coal.

EXCELSIOR COLLIERY.—*C. W. Kingsley, Operator, on lands of the P. and R. Coal and Iron Company*

It consists of six drifts on the twin veins, Nos. 8 and 9. Drifts A and C are on the No. 9 vein and B and D on No. 8 vein, while Nos. 1 and 2 are on 8 and 9 veins on their north and south dip. Four gangways are open on Nos. 1 and 2 drifts, and worked as one vein in 20 feet of coal. Ventilation is produced by natural means, and appears to be satisfactory. 43,463 tons of coal had been shipped this season, employing 120 men and 60 boys; 1 breaker engine, of 65-horse power, with 6 boilers, are in use; in condition they are reported to be good.

ENTERPRISE COLLIERY.—*Thomas Baumgarden, Operator, on lands of the P. and R. Coal and Iron Company.*

It consists of a slope sunk 210 yards on the north dip, or No. 8 vein, into the basin. Both dips are worked. The basin ascends eastward in coal 8 feet thick. It is anticipated the colliery will produce a large shipment in 1876, as all the necessary facilities for that end are being completed. Ventilation is produced by a 20-horse power fan, and fully adequate to furnish a full supply of air. 230-horse power and 13 good boilers are in use. The drainage is effected by a 14-inch pole pump and a 10-inch Bannan & Allison pump. Two fatal accidents took place during the year. 52,665 tons of coal had been mined; 160 men and 20 boys are employed; the general condition of the colliery is good.

ENTERPRISE COLLIERY, No. 2.—*J. R. Cleaver, Operator, on lands of the P. and R. Coal and Iron Company.*

It consists of a small slope opening the Holmes vein on its south dip. Its western panel has been abandoned in a rock fault; it is nearly exhausted of coal; 54 hands had employment here; 45-horse power engines, with 4 boilers, are in use; ventilation is produced by a 10-horse power fan, and a 6-inch pole pump is used for drainage.

BRADY COLLIERY.—*Thomas Gorman, Operator, on lands of the P. and R. Coal and Iron Company and the Lehigh Valley R. R. Co.*

It consists of 4 drifts on the 8 and 9 and Skidmore veins. No. 8 is open in 5 feet of coal. Both Nos. 8 and 9 veins are worked in the lower drift. It is connected with the Excelsior works eastwardly, and all ventilated by natural currents, but this system is to be superseded by a fan. 20,377 tons of coal had been mined this season, employing 70 men and 25 boys; 50-horse power engine, with 5 boilers, are in use, with all their appointments are found to be in good condition.

FRANKLIN COLLIERY.—*Lovell, Booth & Co., Operators, on lands of the P. and R. Coal and Iron Company.*

It consists of 2 drift levels. No. 10 vein is open in 4 feet of coal, and idle. The Red Ash vein is open in the counter drift, and mining is solely confined to robbing out pillars. Ventilation is effected by natural air currents, and is found sufficient for its purpose. Ten thousand tons of coal has been mined. One steam engine of 8-horse power, and 1 boiler, is used; 30 men and boys are employed. The general condition of the colliery is good.

GEORGE FALES' COLLIERY.—*Heim & Goodwill, Operators, on lands of the P. and R. Coal and Iron Company.*

It consists of a slope sunk 220 yards on the north dip of No. 10 vein. Mining on the east panel is confined to robbing back pillars. A tunnel opens No. 11 vein in 7½ feet of coal. The chief supply is mined in the basin measures and some on the counter gangway. An air shaft has been open and a furnace erected for ventilating the mine, which gives satisfactory results. A 40-horse power engine, with 6 boilers, are used, and 2 pumps do the drainage. Thirty-two thousand five hundred and seventy-six tons of coal has been mined, employing 95 hands.

HENRY CLAY COLLIERY.—*I. Langdon & Co., Operators, on lands of the P. and R. Coal and Iron Company.*

It consists of a slope opening the No. 8 vein on its western limits. Mining is confined to robbing out pillars. Six feet of slate separates Nos. 8 and 9 veins. Ventilation is effected by a 20-horse power fan, located on the counter drift. Its results is not adequate to produce a proper supply of air for ventilating the different panels. Notices have been served upon the superintendent to remedy all defects and to place the colliery in a lawful working condition. Since then efforts are making to comply with the legal requirements of the act of Assembly. Eighty-five thousand nine hundred and forty-five tons of coal had been mined, employing 145 men and 40 boys; 90 horse power engines, with 6 boilers and a pole pump for drainage, in use.

COAL RIDGE COLLIERY.—*Burton & Bro.'s, Operators, on lands of the Coal Ridge Improvement Company.*

It is situated at Bell's Tunnel, near Mount Carmel, and consists of a double track slope, 110 yards deep, opening the south dip of the E vein. It is a new operation in fact. A new steam fan has been introduced this year to ventilate the mine. Nothing has been done lately except draining the mine. 150-horse power engines, with 16 boilers, are in use; 40 men and 25 boys are employed. The condition of the colliery is satisfactory. Twelve thousand four hundred and eleven tons of coal had been mined.

LOCUST GAP COLLIERY.—*Kimbell & Graber, Operators, on lands of the P. and R. Coal and Iron Company.*

Two slopes are used on the E vein in 22 feet of coal. A partition slate separates the vein forming the Nos. 8 and 9 seams. The lower vein is 7 feet thick. The breaker had been burned in spring and consequently detered mining until a new one had been built up, and will be ready in the spring. Ventilation was not as good as should be, but efforts are now making to remedy the defects. 18,830 tons of coal had been shipped. Two hundred men and 40 boys were employed; 270-horse power engines, with 12 boilers, are in use; a first-class Grubal fan has been put in operation, which will insure a plentiful supply of air for all purposes.

LOCUST SPRING COLLIERY.—*P. and R. C. and I. Co., owners and operators.*

The colliery is situated at Locust Gap, in Northumberland county. A slope 400 yards deep opens the E vein on its south dip. No. 2 breast is used as a self-acting plane for working the upper part of the lower lift; a 20-horse power fan is used, which supplies a sufficient amount of air for the colliery; 16 breasts are working, and the general condition of the colliery is good; 21,393 tons of coal had been mined; 90 men and 50 boys are employed; 170-horse power engines, with 11 boilers are used, and a pole pump has been used for draining.

MORETON COLLIERY.—*Thomas Moreton, operator, on lands of the Northumberland Coal and Railroad Company.*

It is situated west of Mount Carmel, and consists of two drift openings, but mining is chiefly confined to robbing out pillar coal from a small local basin. A 15-horse power engine, with one boiler is used; 20,803 tons of coal has been mined; 45 hands are employed. The general condition of the colliery is good.

LILLY COLLIERY.—*George Thrautman, operator, on lands of the Locust Mountain Coal and Iron Company.*

It is situated one-half mile west of Centralia, and consists of a single slope driven across the measures of the Centralia colliery to get the top coal of the vein. Nine men and 5 boys are employed here; 9,326 tons of coal had been mined and shipped by the Lehigh Valley Railroad. The character of the work done is considered safe.

WADLEY COLLIERY (AT ASHLAND.)—*Owned and operated by the Philadelphia and Reading Coal and Iron Company.*

The colliery has been idle for a number of years past. The company has had the water taken out preparatory to mining coal, of which there is a large body. A 60-horse power engine, with 4 boilers, and a steam pump are in use.

Out crop Colliery.—*Kuff & Duskin, operators, on lands of the Locust Mountain Coal and Iron Company, near Centralia.*

It is a small drift on the top of the Centralia vein, employing 2 men.

Centralia Outcrop Colliery.—*Thomas Garretty, operator, on lands of the Locust Mountain Coal and Iron Company.*

This is a small drift open on the outcrop of Centralia slope workings, employing 10 men in its operation.

Short Mountain Colliery.—*Owned and operated by the Summit Branch Railroad Company.*

The colliery is situated near Wiconisco, in Dauphin county. It consists of a slope 500 yards deep in 2 lifts under water-level on the Lykens Valley vein in 10 feet of coal. Shutes and headings are worked in conjunction with the driving of the gangway for the purpose of better ventilation. The counter lift is exhausted of coal, No. 3 counter is used for a return air course, 2 self-acting planes deliver the coal on the main gangway. The east gangway is driven under the old Lykens Valley slope. The upper 2 lifts are worked through the Lykens Valley slope eastward. All the coal is prepared at the Short Mountain breaker; a locomotive engine is used for hauling. The Lykens Valley colliery is operated by the same company, with a slope 435 yards deep; 2 counters are worked in connection with this slope. The drainage power in connection with these three collieries consists of a 500-horse power Cornish bull-pump and 5 other steam pumps, which drain the Short Mountain, Lykens Valley and Big Lick collieries. Ventilation is produced by a steam fan, and the rarefied air of 6 boilers are utilized in connection with it. It is necessary to keep a special watch on the strengthening of the gangway, owing to a tendency of the upheaval of the bottom slate, making it a most difficult matter to manage. This colliery is under the superintendence of E. C. Hanna, and James Fennell, inside boss; 225 men and 75 boys are employed; —— tons of coal had been mined. In all its appointments I find it to be one of the best managed collieries in the region.

Reliance Colliery.—*Thomas Baumgarden, Operator, on lands of the P. and R. Coal and Iron Company.*

A slope 370 yards deep in two lifts opens the E twin veins. The two veins are formed into one on the lower west panel, while on the east side 9 feet of a partition slate separates 8 and 9 veins. The old slope level is still working, and also is the water level lift working, but mining is chiefly confined to finishing breasts and robbing out pillars. Ventilation is effected by the operation of a 20-horse power fan, and gives satisfactory results. I find the general condition of the colliery to be good. 38,920 tons of coal had been mined, employing 85 men and 30 boys; 245-horse power engines, with 11 boilers, are in use; only one pole pump is needed for drainage.

SUMMIT BRANCH COLLIERY, (WILLIAMSTOWN, DAUPHIN CO.)—*Summit Branch Coal Company, Owners and Operators.*

The colliery is situated at Williamstown, and consists of a tunnel 1,244 yards long, cutting through the mountain into the Bear valley and opening the L. V. vein in 343 yards. The big vein coal in this level has been worked out, but a cross-cut opens the L. V. vein, and mining continues in it. Three slopes are sunk on the big L. V. vein of the following depths: of 150, 225 and 530 yards. The first slope is nearly exhausted of coal. The second slope is nearly in a like condition. The third slope has 24 breasts working, with 2 self-acting planes in operation, in 8 feet of excellent coal. It is intended to sink an additional lift of 180 yards in this slope. This very extensive colliery has been well managed in all its details, with a fine rock top covering the whole vein. Two 20-horse power fans are used for ventilation. 290,878 tons of coal has been mined; 560 men and 60 boys are employed; 2 fatal accidents occurred during the year. All these Dauphin county collieries are directly under the general superintendency of Major Joseph Anthony, and Col. E. G. Savage, local superintendent, and inside boss W. E. Thomas. Steam power=650 horse power, with 24 boilers, in use.

ROYAL OAK COLLIERY.—*Tillett & Co., Operators, on the lands of the P. and R. Coal and Iron Company.*

It consists of a drift opening a 5-foot Red Ash vein. Counter gangways are open in connection with the main gangways, it being a new colliery of the land sale character, shipping some 815 tons, employing 4 hands, but the character of the work done is considered safe.

MARSHALL COLLIERY.—*Reese & Bros, Operators, on lands of Wm. H. Marshall.*

It consists of a single slope, sunk into a basin of a Red Ash vein. Both dips have been worked by separate gangways, and mining at present chiefly confined to robbing out pillars 2,911 tons of coal have been shipped; 1 engine, of 8-horse power, with 2 boilers, are in use, and a small steam pump is used for drainage.

MONITOR COLLIERY.—*George W. Johns & Bro., Operators, on lands of the P. and R. Coal and Iron Company.*

It consists of two slopes, to wit: The first slope is sunk 104 yards deep on the E vein to a flat, which is 66 yards in breadth. From this point a slope of 175 yards in length is sunk on a 14° dip. The east gangway is 1,800 yards long, and passes around an anticlinal. Two gangways are open on the west panel. The north dip is extensively worked. The lower lift gangways are tolerably well worked out. A counter-lift is now ready on the east, intending to work out the coal by this counter. 32 breasts are open in its eastern panel. A 20-horse power fan is in use, with satisfactory results. The general condition of the colliery and all its appointments cannot be excelled. 48,855 tons of coal had been mined; 180 men and 60 boys are employed. The breaker received a new addition, which will increase the facilities of preparing coal 50 per cent. Pumping engines have

been introduced at the A. S. Wolf colliery for draining this colliery. The inclination of the dip westward affords the water drip to pass off west without interfering with the Monitor workings.

TREVERTON COLLIERY.—*P. and R. Coal and Iron Co., Owners and Operators.*

It consists of three drifts on the twin veins and a slope opening the Lykens Valley vein in 10 feet of coal. The old flat workings in the twin veins have been idle most of the year. A 20-horse power fan ventilates the mine. The east gangway on No. 3 slope is also idle. Its west panel is working. It is necessary to pay strict attention to correct the air-currents in the slope workings, as the blocking of shutes and manways often checks the proper course of the air, otherwise the colliery is found in good ordinary condition. 76,419 tons of coal had been mined during the year; 293 men and 110 boys were employed; steam power=365 horse, with 25 boilers, in use; 1 steam pump is used for drainage.

LOCUST RUN COLLIERY.—*P. and R. Coal and Iron Company, Operators, on lands of the Locust Mountain Coal and Iron Company.*

A slope opens the E vein on its south dip Mining is chiefly confined to its western panel. The east panel is comparatively idle. Ventilation is produced by the operation of a 20-horse power fan, which renders satisfactory results. A tunnel opened the B vein in 14 feet of coal, which works are ventilated by natural currents. The general condition of the colliery is good, and well handled. 43,053 tons of coal had been mined; 210 men and 62 boys were employed; steam power=270-horse, with 24 boilers, and 3 steam pumps are used for drainage.

TUNNEL (SLOPE) COLLIERY.—*Operated by the P. and R. Coal and Iron Company, on their own lands.*

It consists of 2 slopes sunk on the 6-foot vein; a tunnel south opens the E vein; 49 breasts are open, each 12 yards wide with 10 yards of a pillar to each, all of which are double shuted. The whole mine is well ventilated by a powerful steam fan. Another tunnel further south opens the 12-foot vein. 35,000 cubic feet of air is supplied in the colliery. The company have recently remodeled the colliery, and increased its power and capacity so that the coal of the Pioneer colliery may be worked out in connection with its own. I find its condition very satisfactory. There are 10 engines, of 1,445-horse power, with 36 boilers; 169 men and 47 boys are employed; 30 mules, 60 wagons and 1,200 yards of tracks are used; present shipments 300 tons per day.

KEYSTONE (SLOPE) COLLIERY.—*Operated by the land-owners, the P. and R. Coal and Iron Company.*

It consists of 2 slopes, one used for coal hoisting and the other for drainage, men and materials. Ventilation is produced by a 50-horse power fan, which supplies a sufficient quantity of air; considerable improvements

have been made in the colliery; there is an immense amount of coal on the tract, which cannot be exhausted for a number of years to come. There are 9 engines, of 918-horse power, with 36 boilers in use; 19 mules, 33 wagons and 2,500 yards of tracks are in use; 100 men and 34 boys are employed. The present daily shipments will average 250 tons, but the colliery can soon be in a condition to ship 500 tons daily.

PRESTON, No. 1, COLLIERY.—*Owned and operated by the P. and R. Coal and Iron Company.*

It consists of a slope opening the H or Orchard Red Ash vein in 7 feet of coal; and a drift opens the D vein, which produces a large amount of coal, and well ventilated by a 20-horse power fan; the vein here is 13 feet thick. A self-acting plane opens a counter lift, and a second counter lift is still run up 110 yards, the coal of which passes down a counter shute where it is re-loaded. This panel is ventilated by natural air currents, which is found sufficient for the present. 8,219 tons of coal had been mined; 120 men and 25 boys are employed. I find the colliery in good ordinary condition; 105-horse power engines with 7 boilers are in use, 2 steam pumps are used for drainage.

PRESTON, No. 2, COLLIERY.—*Owned and operated by the P. and R. Coal and Iron Company.*

The E vein is opened by a slope 202 yards deep in 25 feet of coal, 48 breasts are working on its west panel and 5 on its east panel. A tunnel north opens the D vein in 15 feet of coal, with 19 breasts open on its west panel and 2 breasts on its east panel. The G vein is open southward by another tunnel in 11 feet of coal. An outlet is in course of construction in this vein, which will increase ventilation to satisfaction. The E vein panels are ventilated by a 20-horse power fan; 39,528 tons of coal had been mined; 200 men and 30 boys are employed; steam power=175-horse, with 13 boilers; 2 steam pumps are used for drainage, and 2 fans are used for ventilating the mines, all of which with their sundry appointments are in good condition.

PRESTON, NOS. 3 AND 4, COLLIERIES.—*Owned and operated by the P. and R. Coal and Iron Company.*

No. 4 consists of a tunnel opening the E vein south, and mining chiefly confined to robbing out pillar coal. No. 3 consists of a slope for coal and a pumping slope. Both slopes are sunk in the E vein. Its west gangway has changed to east, rounding an anticlinal in 20 feet of coal, and the coal in its eastern panel is 23 feet thick. A tunnel is driving south to open the Hunter basin on its north dip of the E vein. All the coal mined in both collieries is prepared at No. 4 breaker, the haulage done by a locomotive. Ventilation is produced by a 40-horse power fan, and affords an ample supply of air. 16,356 tons of coal had been mined; 100 men and 50 boys are employed; a 30-horse power engine is used to run No. 4 breaker, while a 500-horse power Bull pump and 315-horse power engines, with 17 boilers, are used at No. 3 slopes. I found the colliery with all its appointments in excellent condition.

HAZLEDELL COLLIERY (COLUMBIA COUNTY.)—*Robert Gorrell, Operator, on lands of the Locust Mountain Coal and Iron Company.*

It consists of two slopes and a tunnel operation. Very little mining had been done during the year, the lower works being flooded out. The tunnel opens the B vein in 12 feet of coal. Fourteen breasts are open in its west panel. A large amount of blasting is done in this tunnel, requiring a powerful current of air to remove the smoke. This work is being ventilated by natural currents, and although quite strong yet not sufficient to make ventilation a success. A very large number of hands were at work in this tunnel, which accounts for the large body of powder smoke in circulation; otherwise the condition of the mine is excellent, and the character of the work done is safe; 21,000 tons of coal had been mined; 163 hands are employed; 360 horse power engines, with 12 boilers, are in use, and one large steam pump is used for drainage.

CENTRALIA COLLIERY.—*Operated by Dr. Provost, on lands of the Locust Mountain Coal and Iron Company, at Centralia, Columbia county.*

It consists of a slope and a tunnel opening. The slope workings are filled with water during the year. The D vein is opened in the tunnel in 15 feet of coal. A dry slope is sinking on this tunnel lift for hoisting the coal to the slope breaker. Eighteen hands are employed here; 340-horse power steam engines, with 14 boilers, and 2 pole pumps are in use.

LUKE FIDLER COLLIERY (NORTHUMBERLAND COUNTY.)—*Mineral Railroad and Mining Company, Owners and Operators.*

A slope through 20 yards of rock strata to meet a tunnel which opens the Nos. 8, 9, 10, 11 and 12 coal veins, which latter lift is used for drainage outlet. An inside slope is sunk on No. 10 vein, and in its course opens the twin veins, 8 and 9. Eight feet of coal are worked on No. 8 and seven feet of coal are worked in No. 9 vein. Two self-acting planes open up a series of counter-workings, with 46 breasts open. The colliery is well ventilated by a 20-horse power fan, and the colliery is generally in a good condition; 5 engines, of 175 horse power, with 8 boilers, are in use; 108,300 tons of coal had been mined; 213 men and 50 boys are employed.

LOCUSTDALE COLLIERY, IN COLUMBIA COUNTY.—*Owned and Operated by the P. and R. Coal and Iron Company.*

It consists of 2 slopes, one for coal purposes and the other used for drainage, men and materials, opening the E vein in 25 feet of coal; 6 breasts are open on its east panel, with a retaining pillar of 50 yards left to support the upper level workings, 4 breasts are open on its west panel. Owing to the generation of a large amount of fire-damp gas shots are only discharged by permission and in the presence of a boss miner. The use of naked lights is prohibited, and a full observance of the requirements of law is strictly adhered to. Otherwise I found the colliery in excellent condition. Five fatal accidents occurred during the year, 4 of which had been caused by an explosion of powder while the men were seated on the powder chest taking dinner when the explosion took place. Ventilation is effected by a 25-horse power fan; 6 engines=790-horse power, with 25 boilers are in use; 150 men and 71 boys are employed; one 500-horse power bull pump and a steam pump are used for drainage; 40,910 tons of coal had been mined.

MERRIAM COLLIERY.—*Owned and Operated by the P. and R. C. and I. Co.*

It consists of 2 slope openings, to wit: A coal slope and a pumping slope. The coal is hoisted in tanks 140 feet above the slope to the breaker level. A self-acting plane is used to work the counter levels, 38 breasts are open in the colliery, and all admirably worked. The works are ventilated by a 20-horse power fan, and its results are quite satisfactory, and is classed as one of the best in the district. Steam power=375-horse, with 20 boilers are in use; 190 men and 55 boys are employed; 86,630 tons of coal had been mined.

HELFENSTINE COLLIERY.—*Owned and Operated by the P. and R. Coal and Iron Company.*

It consists of a tunnel and slope opening, the tunnel is now idle. The slope is sunk inside, opening the Lykens Valley vein in 12 feet of coal, with 8 breasts open, nothing is done at present on its east panel, nothing of importance had been done during the year. The power is=165-horse, with 5 boilers. The colliery is well ventilated by a 20-horse power fan. 15,974 tons of coal had been mined since resumption took place, employing 165 hands.

BEN FRANKLIN COLLIERY.—*Operated by Thomas Baumgarden, on lands of the P. and R. Coal and Iron Company.*

It consists of 2 drift openings. The Lykens Valley vein is open in 8 feet of coal, its east panel is idle, 12 breasts are open on its west panel and 12 breasts are open on the upper panel in 4½ feet of coal; a slope is now in course of sinking which will when completed constitute this one of our best collieries. The good top rock makes mining a safe operation. One engine, of 25-horse power, with 3 boilers are in use; 100 men and 30 boys are employed; 46,905 tons of coal had been mined.

BUCK RIDGE COLLIERY.—*Isaac May, Operator, on lands of Renshaw & Johnson.*

It consists of 2 slopes and 5 drift openings. Twenty-five men are employed in robbing out pillars in these drifts. A slope is sunk through these levels, and a cross-cut tunnel opens No. 9 vein at the foot of the slope. Both gangways are comparatively idle. Twenty-five breasts are open in this slope. No. 9 vein is open by a new slope, which will extend 100 yards under the level of the old slope. The colliery is ventilated by a 20-horse power fan. A good traveling way is available in the west panel. The power is=200, with 14 boilers. 110,000 tons of coal had been mined. One hundred and fifty men and 40 boys are employed.

CAMERON COLLIERY.—*Mineral R. R. and Mining Co., Owners and Operators.*

It consists of 2 slopes and 4 drift openings on Nos. 8, 9 and 10 veins. A local basin is open by a slope, where 12 men are employed in robbing pillars and 5 breasts are working. This panel has been ventilated by a 20-horse power fan. The No. 2 slope has 12 breasts open in its western panel, and 10 breasts are open in its eastern panel. In this level No. 8 vein is opened by a cross-cut, with 3 breasts open, and 7 breasts on its eastern

panel. Six breasts are open on No. 7 vein. The Tape vein is also open by a cross-cut. There are 16 gangways open in the colliery and 49 breasts are working, employing 450 men and 100 boys. Four engines=190-horse power; 17 boilers in use. Ventilation is very good, and produced by the operation of 2 fans. Two powerful steam pumps are in use. The condition of the colliery and all its appointments are satisfactory.

STEWARTSVILLE COLLIERY.—*Wm. Montilius, Operator, on lands of the Locust Mountain Coal and Iron Company.*

It consists of 2 slopes working the E and D veins in 20 and 13 feet thick. The upper slope opens the basin, and the coal nearly exhausted. The D vein is opened by a tunnel, and the coal nearly all extracted. Twenty-six men are employed in robbing back-pillar coal. The B vein is intended to be open by a new tunnel. The new slope has been sunk inside at the bottom of the first lift on the E vein in 25 feet of coal. The vein is nearly flat. A gangway is driven south through the basin. One steam engine=50-horse power, with 6 boilers, are in use; 44,694 tons of coal had been mined; 120 men and 80 boys are employed.

RED ASH TUNNEL.—*Achmuty & Beckel, Owners and Operators.*

It consists of a tunnel opening the Lykens Valley vein. Gangways have been open east and west. A new breaker has been built, and preparations made for shipping a considerable amount of coal in 1876. One engine and 2 boilers are used. The general condition of the colliery is good.

HICKORY SWAMP COLLIERY.—*Mineral Railroad and Mining Company, Owners and Operators.*

It consists of a slope opening the 8 vein. The west panel is nearly exhausted of coal. Nos. 8 and 9 veins are opened in the east panel in 7 and 6 feet of good coal. I find the colliery in excellent condition, and ventilation is produced by a 20-horse power fan; 140-horse power engines, with 7 good boilers, are in use; 170 men and 55 boys are employed; 70,519 tons of coal had been mined, and the general condition of the colliery is satisfactory.

HICKORY RIDGE COLLIERY.—*Mineral Railroad and Mining Company, Owners and Operators.*

It consists of a tunnel and a slope opening. No. 9 vein is worked by the slope in 6 feet of coal, with 5 breasts working, and on the west side the coal is 8 feet thick. No. 8 vein is not worked at present. Exhaust steam is utilized for ventilating the mine, discharged into the upcast air-course. A 20-horse power fan is to be introduced for this purpose; 178 yards of a tunnel opens the south dip of the vein, where 16 breasts are working, and ventilated by the operation of a furnace; 18,940 tons of coal had been mined, employing 92 men and 30 boys; the power is=to 190-horse, with 9 boilers, in use. I found the colliery with all its appointments in good condition, and the men in charge evincing great industry in getting the colliery in good order.

RENO COLLIERY.—*Hoagland & Co , Operators, on lands of the Coal Ridge Improvement Company.*

This is a land-sale colliery. It consists of a dry slope sunk on the crop of the Lykens Valley vein in coal from two to five feet thick. The slope is worked by horse power, employing six hands, and shipping some 1,000 tons of coal.

BUSSEN & WAGONSELLER COLLIERY.

The colliery consists of a drift level, working the top coal of Hazledell vein; employing 5 men, and mined 340 tons of coal during the season.

LANCASTER COLLIERY.—*Smith & Keiser, Operators, on lands of the Mineral Railroad and Mining Company.*

It consists of 3 drifts on the Twin veins, Nos. 8 and 9. No. 2 drift opens No. 8 vein in 6 feet of coal, 6 breasts are open in this panel; No. 3 drift is open on No. 8 vein in 6½ feet of coal, with 8 breasts open; No. 9 vein has 7 breasts open in 5 feet of coal. The colliery is ventilated by natural air currents. With ordinary care mining in this colliery is a safe operation. 24,998 tons of coal has been mined; 54 men and 16 boys are employed; one 20-horse power breaker engine, with one boiler is used. I am pleased to say the condition of the colliery is good

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Number and description of the collieries of the Shamokin district, under the late division of the territory as given above, showing that 60 collieries have been examined in detail, comprising in all:

Shaft collieries	3
Slope collieries, many of which have 2 slopes	55
Drift collieries, many of which have 4	57
Tunnels, many of which have 3	23
Engines in use, and of all classes	151
Horse power of the same	10,956
Steam boilers in practical use	592
Pole pumps	14
Cornish bull pumps	7
Steam fans for ventilation	36
Furnaces used for ventilation	7
Boys employed at the collieries	2,296
Miners, laborers, etc., employed	7,068
Total number hands, or general force	9,364
Official visits made	186
Miles traveled	5,168
Fatal accidents occurred during the year	37
Non-fatal accidents occurred during the year	106
Widows were left in consequence	13
Orphans were left in consequence	30
Tons of coal shipped	2,848,726
Tons consumed in the district	540,000
Aggregate tons mined in district	3,388,726
Tons to each fatal accident	89,177

REPORT

ON THE INSPECTION OF COAL MINES IN THE SOUTHERN PORTION OF THE COUNTY OF LUZERNE, TOGETHER WITH CARBON COUNTY, FROM THE 19TH OF JULY, 1875, TO THE 31ST OF DECEMBER, 1875, INCLUSIVE.

To His Excellency, JOHN F. HARTRANFT,
Governor of the Commonwealth of Pennsylvania:

SIR:—In compliance with the requirements of an act, entitled "An Act providing for the health and safety of persons employed in coal mines, approved the 3d day of March, 1870," I had the honor of receiving my commission for the aforementioned district from you June the 30, and I assumed my official duties on the 19th of July, 1875. I now beg leave most respectfully to submit the following report of my proceedings up to the 31st of December, 1875:

Through the courtesy of the superintendents at the collieries I am able to furnish accidents to persons and other information essential for the completion of a report of the whole year's business. I have arranged accidents resulting in death and serious personal injury in a tabulated form. From them it will appear that 21 persons lost their lives and 77 were injured. Some of the latter were badly hurt, while the injuries of others were not considered of a very serious nature.

There has been an output of coal of about 2,555,888 tons, of which there were shipped to market 2,323,535$\frac{15}{20}$ tons. This affords a means of ascertaining the ratio of the number of tons of coal mined for each life lost. There were 121,709 tons of coal mined for each life sacrificed, or 110,644 tons shipped to market for each life sacrificed, or 1 life lost for each 405 persons employed in and about the mines. A superficial examination of the causes of the accidents given in the accompanying tables exhibits the very numerous sources of danger which exist, some permanent, but which from their number, variety and other causes an inspector may not always be able to detect, some occasionally depending on conditions not in existence at the time of inspection, whilst others occur from the spontaneous act or neglect of a workman. Although I must say it is a common error to attribute accidents to the fault of the men when the system of working a colliery is bad or the provisions against accidents have been palpably neglected.

When there are no rules the men pay little regard to the common safety, partly from ignorance, partly from the feeling that collectively they are under the direction of a superior whose duty it is to attend to it. The peculiar and sudden changes of circumstances, which are perpetually occurring in mines, demand the enforcement of an unusual degree of discipline, as essential to the safety of the employed. It is sometimes contended that the loss of human life in mines has increased, and is increasing, which, if true, is to be attributable to the recent rapid development of the coal trade, a much larger population being employed and an increase of coal mined under disadvantageous circumstances than heretofore. The mines become more dangerous as they descend into the bowels of the earth, much more difficult to ventilate, more men being employed, &c.

The list of fatal casualties of 1875, compared with that of 1873, (no report of 1874 being made,) is comparatively small. There is no part of mining where our labors as inspectors seem to have had so beneficial an effect as in ventilation, the true knowledge of which seems steadily progressing; and I know that an ill-ventilated mine cannot be a profitable one.

Since my first visit to some of the collieries mechanical ventilation of mines has made some progress in my district by the erection of ventilating fans. There have been two fans, each of 16 feet in diameter, erected at Cross Creek colliery, Drifton, by Coxe Bros. & Co., and four at Summit Hill collieries, by the Lehigh and Wilkesbarre Coal Company; also two at East Sugar Loaf collieries, Stockton, by Linderman, Skeer & Co., capable of producing the highest amount of ventilation required in mines, with a regularity of action, capable of control, economy in working and power of overcoming resistance or obstacles in mines which the other powers hitherto employed or proposed are incapable of attaining.

I have advocated, in several instances with success, the adoption of fan ventilation, for when its merits are fully known it is certain to make great progress in the district. The ventilation of a mine is a main point to look to, but it is not by any means the only one to be attended to, as seen by the list of accidents accompanying this report.

It is very satisfactory to me to be able to state that great improvements are being made by many of the operators, and if others would do likewise, in erecting ventilating fans instead of the boiler fires, steam exhaust, &c., (although the latter does very well where the mines are not extensively worked,) an important amelioration would be effected, and the requirements of the existing mines would be met.

I enclose with this report a map of a section through slope No. 1, "Beaver Brook mines."

There are 776 cylindrical steam boilers, equal to 3.968+miles in length of an average diameter of 33 inches, carrying an average pressure of 69 lbs. per square inch, in the district. There has been no accidents from explosion of boilers during the year, which speaks well for the care that is taken in having them cleaned and examined every six months according to law. There are 210 steam engines in use, estimated horse power 11,280, all of which are in good order.

Perhaps it is useless for me to reiterate what has been suggested by some of the older inspectors in relation to the distribution of the Inspectors' Reports, nevertheless I feel in duty bound to say a word in reference to it. I have written twice to Harrisburg for some copies and received answers stating that the members had demanded their full number and that the supply had been exhausted. I think there ought to be about 200 copies given to each district, where they could be advantageously distributed. I observe, by the Legislative Record, that measures have been proposed to remedy this evil. This is considered very important by the public here.

The time has been rather short for me to give a fuller report than I have done.

I take the liberty of returning my sincere thanks to all with whom I had any official business transaction for their complacence.

I have the honor to be

Your most humble and obedient servant,

T. D. JONES.

Inspector of Coal Mines.

Hazleton, *February* 10, 1876.

DAMAGES TO PROPERTY.

An engine house burned down at Yorktown, slope No. 1. The loss is not considered very great, as the mine was about being abandoned, although the machinery was considerably damaged.

A fire took place in No. 1 Stockton slope from the boiler flue, which extends up to No. 5 slope gangway. The fire was first discovered April 7, 1875, in the flue near the boiler. On May 7, 1875, it had extended up to No. 5 gangway, thence through the return airway to a point 1,200 feet east, at which place it was checked and fought back 1,200 feet to where the flue came up from No. 1 to slope No. 5, west gangway. The present stopping is erected 240 feet east of the flue. No. 1 workings connects by an inside slope and by a pumpway with No. 5. Nos. 1 and 2 slopes are now partly drowned owing to the fire. The difference of elevation between the top of No. 2, the highest point working, and the top of No. 4, the lowest point working, is 38 feet. Perpendicular height from where the fire is in No. 5 to the top of No. 4 slope is 355 feet. The present method of extinguishing the fire, by means of putting in stoppings, is a very tedious operation, and cannot be successfully accomplished unless those stoppings can be made airtight, which is a thing of rare occurrence in connection with old workings. I have visited these workings twice to see that the necessary precaution was taken for the safety of the men, as there had been four suffocated by working at the fire previous to the date of my commission. The nearest point that I could get to the fire was 240 feet, where the stopping is erected in the gangway, as before stated. It is evident that if the present mode of extinguishing does not meet their expectation they can do so by drowning No. 5. The extinguishing of the fire is under the supervision of Mr. Lewis Jones and ———, from Wilkesbarre, both men of experience.

The fire in tunnel No. 6, at Summit Hill, is still burning. The company have spared neither labor nor expense in trying to extinguish this fire. After trying the application of carbonic acid gas, &c., without success, and the filling up of the old fall ins on the mountain, it was deemed expedient to discontinue the process and to resort to cutting off the fire by driving a slope on each side of the fire, working the coal from the top rock to the bottom as far down as practicable, then fill this space with clay leaving the fire to burn out the part cut off. This did not prove satisfactory, as the pillars on each side of the cut gave way causing the top rock to fall in. After working at this sinking for about 2 years scarcely could it be observed what amount of work had been accomplished. So the company thought it best to stop the sinking and resort to building a *dam* on a level with the Nesquehoning tunnel to prevent the fire from coming in contact with the tunnel and to extinguish the same.

RECAPITULATION *of coal improvements in the South district of Luzerne and Carbon counties during the year ending December* 31, 1875.

Upper Lehigh, Luzerne county, on the estate of Tench Coxe, operated by the Upper Lehigh Coal Company.—Have sunk two new slopes since 1873 on the north dip of the Buck Mountain vein, and have built a new breaker, with all the modern improvements, to prepare the coal mined at Nos. 3 and 4 slopes.

Drifton, Luzerne county, on the estate of Tench Coxe.—Have sunk a new slope on the south dip of the Buck Mountain vein, and a new breaker has been built, with all the necessary improvements, to prepare the coal mined

at said slope. Two ventilating fans are now being erected to ventilate these collieries, and if other parties would do the same the ventilation in the South district would be more commendable.

Highland, Luzerne county, on the estate of the Highland Coal Company, operated by G. B. Markle & Co.—Have sunk a new slope on the north dip of the Buck Mountain vein, and are now building a new breaker to prepare the coal from said slope No. 2.

Eckley, Luzerne county, on the estate of Tench Coxe, operated by J. Leisenring & Co.—Are sinking a new slope on the south dip of the Buck Mountain vein, and a new breaker is in contemplation of being built.

Buck Mountain, Luzerne and Carbon counties, operated by Buck Mountain Coal Company.—Have sunk two new slopes on the north dip of the Buck Mountain vein, called Nos. 5 and 6. A new breaker is proposed being built at slope No. 5 to prepare the coal mined at Nos. 4 and 5 slopes.

Hollywood, Luzerne county, on the estate of Big Black Creek Improvement Company, operated by Calvin Pardee & Co.—Have sunk two new slopes on the south dip of the Mammoth vein, and a new breaker has been built, with all the improvements essential for the preparation of the coal.

Milnesville, Luzerne county, on the estate of the Stout Coal Company.—Have finished sinking No. 7 slope, which was reported in 1873, and the breaker has been completed and is in operation.

Stockton, Luzerne county, on the estate of Smith, Roberts & Packer, operated by Linderman, Skeer & Co.—Have sunk a new slope on the north dip of the Mammoth vein.

Beaver Meadow, Carbon county, situated on the estate of Tench Coxe, operated by Ely & Co.—Have sunk two new slopes, one on the north dip of the Mammoth vein, and the other on the north dip of the Wharton vein. A new breaker is now being built to prepare the coal from the new slopes.

Coleraine, Carbon county, situated on the estate of William T. Carter & Co.—Have sunk a new slope on the north dip of the Wharton vein, and are building a new breaker to take the place of the old one which has become too dilapidated to do the required work.

Beaver Brook, Luzerne county, situated on the estate French Coal Company, and operated by the Beaver Brook Coal Company.—Have sunk a new slope on the south dip of the Wharton vein.

Yorktown, Carbon county, situated on the estate of the New York and Lehigh Coal Company, operated by A. L. Mumper & Co.—Have sunk a new slope on the south dip of the Wharton vein, and are building a new breaker to prepare the coal mined at said slope.

Summit Hill, Carbon county, situated on the estate of the L. C. and N. Company, operated by the L. and Wilkesbarre Coal Company.—Have sunk a new slope in tunnel No. 9, on the north dip of the Mammoth vein, and another on the same vein from the surface, called No. 7. A double 16 feet diameter fan has been built to ventilate this slope, and two fans to ventilate No. 9. A new breaker is being built at tunnel No. 9, with all the facilities of modern improvements. Calculated capacity 1,500 tons per day.

Of which there are 2 slopes now sinking, 16 having been sunk; 6 new breakers now being built and 3 having been built, since 1873, in the South

district of Luzerne and Carbon counties; also during 1873 there had been 6 fans put up at the collieries, as follows:

Two fans, 16 feet diameter, at Cross Creek, Drifton.
Two fans, 16 feet diameter, at No. 7, Summit Hill.
One fan, 16 feet diameter, at No. 9, Summit Hill.
One fan, 12 feet diameter, at No. 9.
One fan, 7 feet diameter, at No. 7, Stockton.
One fan, 16 feet diameter, at No. 5, Stockton.

RECAPITULATION OF MACHINERY.

Number of steam engines in use	210
Estimated horse power	11,280
Number of steam boilers in use	776
Average length of boilers	27 ft.
Average diameter of boilers	33 in.
Average pressure per square inch	69 lbs.
Estimated lineal feet of boilers in district, (equal to 3.968+miles),	20,952

UPPER LEHIGH COLLIERIES.

Situated 11 miles north of Hazleton, in Luzerne county, on the estate of the Nescopec coal company and partly on land belonging to the estate of Tench Coxe, and operated by the Upper Lehigh coal company.

SLOPE, No. 1.—Sunk on the south dip of the Buck Mountain or B vein, at an angle of about 24¼°, a distance of 365 feet, vertical 181 feet. The top or mouth of the slope is 1,807 feet above mid-tide, and at the bottom of the same 1,626 feet. The vein is about 12 feet thick, and the coal of superior quality. The east gangway has been driven 1,400 feet and the west gangway 5,460 feet, with 19 breasts working. Those breasts are opened 36 feet wide, leaving a pillar of 18 feet for the support of the superincumbant strata.

SLOPE, No. 2.—Sunk on the same dip of the same vein, at an angle of about 32°, a distance of 455 feet. Elevation above mean tide at top of slope, 1,787 feet; at the bottom, 1,547 feet; perpendicular depth of slope, 240 feet. The east gangway has been driven 2,400 feet, with 13 breasts working, and the west gangway 4,600 feet, with 41 breasts working. There is a counter gangway about midway in the slope, and the hoisting from the bottom and the counter is done by having the hoisting drum of different diameter, and works to perfection. They have 49,094 feet of T iron track in and about Nos. 1 and 2 slope, and 187 mine cars, with a breaker capacity of 800 tons of coal per day. The one breaker prepares the coal from both slopes. They employ at the two slopes 2 bosses, 93 miners, 56 laborers, 31 company men, &c., 11 drivers, 3 door boys in the mines, 10 mechanics, 4 head and plate men, 8 breaker hands, 3 drivers, 64 slate pickers, in all 75 men and boys and 51 mules. They shipped during the year ending December 31, 1875, 114,812.18 tons of coal, and used 1,882 kegs of mining powder, and worked 142 days.

Ventilation.—This is produced by a 12-feet diameter ventilating fan. Whenever the fan gets out of repairs the mines are ventilated by exhaust steam from the pump. The air is conducted to the face of the gangway by means of bratticing along the side of the gangways, as the vein will not admit of an airway being driven in solid coal owing to the irregularity of the pitch of the vein, &c. They have doors wherever required, and they close of their own accord. They have a traveling way for men to travel

to and from their work. The air has been measured and reported according to law. Air circulating through the mines: Slope, No. 1, intake, 8,910 cubic feet; face of gangway, 7,700 cubic feet, and 20,355 cubic feet at outlet per minute; men employed, 50. Slope, No. 2, inlet, 28,890 cubic feet; cubic feet in face of gangway, 16,050; cubic feet at outlet, 33,819 per minute; men employed, 106, per report for December.

Machinery consists of 4 hoisting engines, 188-horse power; 1 breaker engine, 60-horse power; 4 pumping engines, 163-horse power; and 4 steam pumps and 40 steam boilers reported safe and in good condition, examined and cleaned December 5, 1875. Total horse power, 426; number of engines, 10. They have a metal speaking tube, and an adequate brake and flanges of sufficient strength and dimensions for safety attached to their hoisting drum. The ropes, chains, &c., are in good condition. They have a safety valve on every nest of boilers, and a steam gauge to indicate the pressure of steam, and 1 fan engine of 15-horse power.

Remarks.—They have furnished maps of their workings, made to a scale of 100 feet to an inch. They have a wash house for men to wash themselves. There are no boys under 12 years working inside. They do not allow persons to ride upon loaded cars in the mines. The engineers seem to be experienced, competent and sober men. The mining boss is a practical and competent man.

Slopes Nos. 3 and 4 are located about $\frac{3}{4}$ of a mile west of their other works and on the estate of Hon. Tench Coxe. Slope No. 3 is sunk on the north dip of the Buck Mountain or B vein, at an angle of about $9\frac{1}{4}°$, a distance of 534 feet, perpendicular depth 86 feet. The top of this slope is 1,818.67 feet above mean tide, and the bottom 1,732.67 feet. The east gangway has been driven 740 feet, and the west gangway 534 feet, at which point they struck the synclinal raising westward to the surface. There are 12 breasts opened in both gangways; there are 6,719 feet of T iron track in and about the mines, and 38 mine cars. Hands employed: 19 miners, 25 laborers, 1 company man, 2 drivers, — door boys; total inside, 47. Hands employed outside: 1 boss, 2 mechanics, 12 head and plate men and breaker hands, 1 driver, 36 slate pickers; total, 52. Coal shipped during the year ending December 31, 1875, 18,288.11 tons; powder used, 264 kegs; days worked, 49.

Slope No. 4.—This is a new slope just sinking. The coal from both slopes is prepared at the same breaker. The coal from No. 3 is hauled by a locomotive engine to where the breaker is built, (about $\frac{1}{2}$ mile west,) at slope No. 4. They have built a magnificent new breaker, with all the modern improvements. These works are not in full operation yet, and are not likely to be till spring.

Machinery.—They use 2 hoisting engines, 104-horse power; 1 breaker engine, 50-horse power; 2 pumping engines, 52-horse power; total number of engines, 5; aggregate horse power, 208; 1 locomotive engine, 25-horse power. The hoisting is all done by friction cones. The engine is kept continually going, after the car is dumped. The engineer loosens his brake, the car descends the slope with the rapidity of lightning, and before the car reaches the bottom the engineer checks the speed by the brake attached to the hoisting drum, and whenever they are ready to hoist, the engineer pulls in the cone lever and in less than a minute the car is on the top of the breaker; and everything works smooth as clock-work. They have a splendid machine shop and a steam saw mill at their east workings.

The management of the colliery speaks for itself, and is worthy of commendation. Daniel Bartsch, general superintendent; William Powell, mine boss; Thomas M. Righter, outside foreman.

Woodside Colliery.

Situated about eight miles north-east of Hazleton, on the estate of the Jeddo Coal Company, and operated by Coxe Bros. & Co.

Slope, No. 1.—Sunk on the south dip of the Buck Mountain or B vein, a distance of 255.07 feet; average pitch, 37°; perpendicular depth, 137.29 feet; elevation above tide at top of slope, 1,854 feet; at bottom of the same, 1,716 7/10 feet; length of west gangway, 2,029 5/10 feet; number of breasts working, 11; extension in eastern direction, 2,049 feet; reached the outcrop; number of breasts working, 7; top of slope, No. 1, is 76,044 feet below top of slope, No. 2; top of slope, No. 2, 161,995 feet below top of slope at Woodside. It was supposed that this slope was worked out some years ago, since which time it has changed hands and underwent great improvements, and the production of coal is likely to continue for some years. Their mine capacity is about 350 tons of coal per day, with a breaker capacity of 400 tons. The mines are well timbered, and are considered safe.

Ventilation is produced by boiler fires, located at the bottom of the outlet in the west gangway, and is ventilated on the east side by exhaust steam from the pump, air circulating 14,634 cubic feet per minute; men employed, 35; air good.

Machinery.—They use 1 hoisting engine of 40-horse power, 1 breaker engine of 20-horse power, 2 pumping engines of 60-horse power; in all 4 engines; aggregate horse-power, 120; and 7 steam boilers, which have been cleaned, examined and reported safe and in good condition.

Remarks.—They employ 1 boss, 33 miners, 22 laborers, 10 Co. men, 4 drivers in the mines, 1 boss, 3 mechanics, 17 breaker men, 10 slate pickers; in all 101 men and boys in and about the mines. They shipped 24,336.08 tons of coal during year ending December 31, 1875, and used 630 kegs of powder and worked 116¼ days. Arthur M'Clellan, superintendent; Benjamin Gibbon, mine boss.

Cross Creek Colliery.

Located at Drifton, on the estate of Tench Coxe, and operated by Coxe Bros. & Co.

Slope, No. 1.—Sunk on the north dip of the Buck Mountain or B vein. Length of first lift of slope, 361.65 feet; average pitch, 16° 13′ 30″; perpendicular depth, 101.05 feet; length of east gangway, which has been abandoned, 2,552.11 feet; extremest extension in western direction, 3,114.6 feet; extremest extension in southern direction, 1,122 feet; number of breasts working, 56. Second lift, length of slope from first lift, 392.74 feet; average pitch, 20° 40′; perpendicular depth below first lift, 138.58 feet; length of west gangway, (in basin,) 1,466 feet; extension on east side, (north gangway, 917.43 feet, and south gangway, 621.56 feet,) 917.43 feet; number of breasts working, 4. A gangway has been driven across the pitch from a point about 1,200 feet west of the bottom of the slope, (first lift,) forming as it were a triangle by which the cars are run by gravity nearly to the face of the breasts. Then they are hauled by mules to the miner. After they are loaded they are hauled to the top of the grade, thence by gravity to the bottom of the slope, thereby facilitating the hoisting of the coal and decreasing the cost of haulage, as the west gangway rises very rapidly to the point above specified. This vein has an excellent roof and the coal is of very good quality. The bottom lift generates carburetted hydrogen gas, (or fire-damp,) but not to a great extent. The mines are in very good condition and are considered safe.

Drift, No. 2.—Driven on the same vein. Measured from center of slope: Extension in eastern direction, 2,191.5 feet; extension in western direction, 1,673 feet. Not working at present.

Slope, No. 2.—Sunk on the south dip of the same vein, and is 451 feet long; average pitch, 28°; perpendicular depth, 212 feet. The east gangway has been driven 618 feet, and the extension in western direction 339 feet. This is a new slope and has been discontinued until the new breaker is ready, and also the completion of the new transportation railroad now under construction by the Central Railroad of New Jersey, Lehigh and Susquehanna division. The breaker is large and commodious, well adapted for the preparation of the coal mined in the Buck Mountain vein. Great improvements are now being made in and about the mines, and the condition of the same is commendable.

Ventilation is produced by a 16-feet diameter fan, and another fan 16 feet in diameter is being built to ventilate the other dip. Air circulating 28,900 cubic feet per minute. Men employed, 139. When I first visited this mine the air was inadequate for the support of the men. But when I made it known to the operator he immediately ordered the erection of those fans before mentioned, and now the ventilation is very satisfactory.

Machinery.—They use 5 hoisting engines of 160-horse power, 1 breaker engine of 30-horse power, 2 pumping engines of 350-horse power, 2 fan engines of 80-horse power, in all 10 engines; aggregate horse power, 620; and 12 cylindrical steam boilers, which have been cleaned, examined, reported safe and in good condition.

Remarks.—They employ 1 boss, 84 miners, 52 laborers, 10 drivers, 2 door boys in the mines, 3 bosses, 9 mechanics, 52 breaker men, 41 drivers and slate pickers, in all 254 men and boys employed in and about the mines. They shipped 72,705.13 tons of coal during the year ending December 31, 1875, and used 1,360 kegs of powder, and worked 124¼ days. Breaker capacity, 750 tons of coal per day; pumping capacity, 8,280 tons of water per 24 hours, equal to 2,229,793 gallons of water in the same time, reckoning 36 cubic feet to the ton. Arthur M'Clellan, superintendent; E. L. Powell, mine agent.

Highland Collieries.

Located 9 miles north-east of Hazleton, on the estate of the Highland Coal Company, and operated by G. B. Markle & Co.

Slope No 1.—Sunk on the south dip of the Buck Mountain or B vein, a distance of 753 feet, at an angle of about 30°. The east and west gangways proper are now being robbed of pillars. About 285 feet west of the bottom of the main slope is where another inside slope has been sunk 240 feet long, at an angle of about 15°. The most of the work is done on the east side, the vein is about 15 feet thick, the roof is good and the coal is of a very good quality. The breasts are opened 30 feet wide, 18 feet of pillar reserved for the support of the roof.

Ventilation is produced by the exhaust steam from the pump. The slope being the intake and the pumpway the outlet; air tolerable, 17,050 cubic feet at face of gangway, per air report for November.

Slope No. 2 is a new slope lately sunk on the north dip of the Buck Mountain or B vein, gangways are now being turned off east and west of the slope. The coal is good, and an excellent roof as far as can be judged from the part of the work which has been opened. They are now building a new breaker to prepare the coal mined from this new slope. They employ at both places: One boss, 60 miners, 5 laborers, 2 company men, 13 drivers, 2 door boys, in the mines; 1 boss, 6 mechanics, 23 breaker men, 1

driver, 29 slate pickers, in all 143 men and boys in and about the mines. They shipped 56,211.09 tons of coal during the year ending December 31, 1875, and used 1,060 kegs of powder, and worked 132¾ days. They have a breaker capacity of 500 tons of coal per day; and 21 mules.

Machinery.—They use 2 hoisting engines of 80-horse power, 1 breaker engine of 30-horse power, and 3 steam pumps and 18 boilers, (including 6 at No. 2,) cleaned and examined, and reported safe and in good condition. They have a brake on their hoisting drum, steam gauges on their boilers. They have no speaking tube, owing to the distance being too long to conduct the free passage of sound.

John Turner, general mine superintendent; Peter Brown, mine boss; William Mills, outside foreman.

Buck Mountain Mines.

This colliery is situated about 11 miles north-east of Hazleton, on the estate of the Buck Mountain coal company, and operated by said company. The mines are located in Luzerne county, and the tower and breaker in Carbon county.

Slope, No. 2.—Sunk on the north dip of the Buck Mountain or B vein, at an angle of about 35¼°, and is 270 feet long; vertical, 160. The top bench or seam is about 9 feet thick, and the bottom seam about 6 feet. A slate from 2 feet and upwards separates those seams. The slope has been sunk in the 9-feet seam. A tunnel has been driven on the west side, cutting the same vein on the south dip. An underground slope has been sunk on the east side of the tunnel, and contains several counter-gangways. There is also a counter-gangway about 100 feet on the pitch above the gangway proper, from which the coal is dumped into a shute and re-loaded on the main gangway into the regular mine cars. The system of working those seams heretofore has been to mine the upper seam first, then the lower or 6-foot. There is also an underground slope on the west side of the tunnel, with numerous gangways. Neither of those slopes are sunk to the basin, but a dip heading in the west gangway has.

Slope, No. 4.—Sunk on the south dip of the same vein, at an angle of about 34°, and is 726 feet long. This slope is located about 2 miles north of the breaker, and reached by balance planes. The coal from this slope is first let down from the top of the slope by a balance plane 525 feet long to the bottom of the first valley; then it is hoisted 1,825 feet by a stationary engine to the top of the mountain; thence the cars run by gravity to the second balance plane, 5,376 feet; then they are let down this plane, which is 2,500 feet long, to the level of slope, No. 2, from which place the cars are let down by another balance plane, 1,400 feet long, to the breaker.

Slope, No. 5, or "Owl Hole."—Is sunk on the north dip of the same vein, at an angle of about 25°, and is 270 feet long. This is a new slope, sunk to the basin, and located about a mile east of No. 4. A small tunnel has been driven from the foot of the hill to the east gangway, connecting on a level with the same for the purpose of drainage.

Slope, No. 6.—Sunk on the north dip of the same vein, at an angle of about 40°, and is 300 feet long. These two slopes (Nos. 5 and 6) are new and not much work has been done. The coal from this slope (No. 6) will be let down by another balance plane to a level of No. 2. This vein, including both the seams, is about 15 feet thick, and of superior quality of coal. They have about 6½ miles of T iron railroad in and about the mines, and 222 mine cars, with a breaker capacity of 825 tons of coal per day. They employ 4 bosses, 122 miners, 44 laborers, 25 Co. men, 12 drivers, 3 door boys, in all the mines; 4 bosses, 24 mechanics, 25 head and plate men,

38 breaker men and 31 slate pickers; in all 333 men and boys and 68 mules. They shipped during the year ending December, 1875, 55,616 tons of coal, and used for mine purposes 7,938 tons, and sold to individuals 2,000 tons. Total tonnage mined, 65,554 tons. They used 1,200 kegs of powder and worked 113 days.

Ventilation is produced partially from the exhaust steam from the pumps and atmospheric action. In No. 4 they have a sort of a furnace erected in the old upper workings, which does not afford adequate ventilation. I have requested the parties in charge to improve the ventilation. The superintendent has promised to put up a ventilating fan at slope, No. 4, which I think will meet the requirements of the mine.

Machinery.—They use 10 hoisting engines of 368-horse power, 1 breaker engine of 30-horse power, 1 pumping engine of 60-horse power and 8 steam pumps; total number of engines, 12; aggregate horse-power, 458; they have 45 steam boilers, cleaned, examined and reported in good condition; they have steam gauges on their boilers; they have no brakes on the hoisting drums nor speaking tubes in the slopes; they have traveling-ways for men to travel to and from their work. William Spencer, superintendent; John M'Ginley, assistant superintendent; Evan Daniels, general mine superintendent; J. M'Cole, mine boss; James M'King, outside foreman.

Council Ridge Collieries, Eckley.

These collieries are located 9 miles north-east of Hazleton, on the estate of Hon. Tench Coxe, and operated by J. Leisenring & Co.

Slope No. 2.—Sunk on the north dip of the Buck Mountain or B vein, a distance of 486 feet, at an angle of about 35°, vertical 330 feet. The top of the slope is 1,698.67 feet above tide, and the bottom is 1,368.67 feet. The vein is about 13 feet thick, and the coal of very good quality. The west gangway has been driven 1,647 feet, and the east gangway 3,345 feet, with 28 breasts opened. There is an inside slope in No. 2, sunk to the basin, a distance of 477 feet, vertical 84 feet. The west gangway has been driven 1,701 feet, with 16 breasts working. This mine has been very extensively worked.

Slope No. 4.—Sunk on the north dip of the same vein, a distance of 327 feet, at an angle of about 40°, perpendicular depth of slope 210 feet. The top of the slope is 1,681.85 feet, and the bottom is 1,471.67 feet above tide. The east gangway has been worked around the circumference of the basin. And an inside slope sunk 261 feet, elevation above tide, at the top of inside slope 1,471 feet, at bottom 1,425 feet. The east gangway has been driven 729 feet, and the west 1,623 feet, with 19 breasts working. The old slope, No. 3, is now kept for pumping, the coal has been worked out.

Slope No. 5.—This is a new slope sunk on the south dip of the Buck Mountain or B vein, elevation above tide 1,659 feet. The gangways are now being turned off east and west of the slope. This mine has all the appearance of becoming an excellent colliery. The vein at this point dips about 45°, and the coal is of superior quality. A new breaker will be built to prepare the coal from this slope. They have in use at all the mines 145 mine cars, 8,118 feet of T iron track, (in Nos. 1 and 2 slopes,) and a breaker capacity of 950 tons of coal per day. They employ 3 bosses, 78 miners, 48 laborers, 11 company men, 29 drivers, 6 door boys in all the mines. 2 bosses, 12 mechanics, 9 head and plate men, 7 breaker men, 6 drivers, 94 slate pickers, in all 354 men and boys. They shipped 76,453$\frac{6}{20}$ tons of coal during the year ending December 31, 1875, and used 1,495 kegs of powder, and worked 125 days.

Ventilation is produced by natural draft, assisted by the heat from the steam boilers and steam exhaust from hoisting engines placed inside of No. 2 to hoist from the inside slope; the amount of air is insufficient. This vein requires a great deal of blasting, causing much powder smoke to linger in the face of the breasts, which makes it very unpleasant and unhealthy to the miners. I have requested the parties in charge to stop one part of the mine, owing to an inadequate amount of air. Slope No. 4 is not much better—it is ventilated by the steam exhaust from the pump—but will be made better, as the present firm intends making great improvements on the property both in and around the mines.

Machinery.—They use 7 hoisting engines of 345-horse power, 2 breaker engines of 90-horse power, 1 pumping engine of 45-horse power, total number of engines 10, aggregate horse power 480. They have 35 steam boilers which have been cleaned, examined and reported in good condition, and 10 steam pumps.

Remarks.—This colliery is now operated by John Leisenring & Co., formerly by Sharp, Weiss & Co.

John S. Wentz, superintendent; Thomas Edwards, general inside foreman; John Rickert, master mechanic

Oakdale Collieries

Situated at Jeddo, about 7 miles north-east of Hazleton, on the estate of the Union Improvement Company, and operated by G. B. Markle & Co., and consists of 2 slopes and 2 breakers.

Slope, No. 1.—Sunk on the south dip of the Mammoth or E vein a distance of 627 feet, at an angle of about —°. The west gangway is driven 750 feet, to where a balance plane is made to let the coal down from the counter gangway to a level of the gangway proper. The east gangway has been driven around the basin into the north dig, going west. There are also two basin gangways on the east side. The synclinal dips westward. There are two locomotive engines in this slope, hauling the coal a distance of nearly 2 miles from the turnout (where they are met by teams) to the foot of the slope. An air hole has lately been driven near the face of the north dip, west gangway, to the surface, which has improved the ventilation considerably. This vein is about 30 feet thick and the coal of good quality. The breasts are opened 30 feet wide, reserving a pillar of 18 feet for the support of the roof, which is good. The upper range of this slope has been worked from the old Jeddo slope. The mode of working is considered safe, and the condition of the mines is favorable. They employ 1 boss, 75 miners, 9 laborers, 3 company men, 14 drivers, 2 door boys, in the mines; 1 boss, 3 mechanics, 19 breaker men, 2 drivers, 37 slate pickers, in all 166 men and boys and 24 mules. They shipped 62,114.02 tons of coal during the year ending December 31, 1875, and used 991 kegs of powder, and worked 126¼ days. Breaker capacity, 500 tons of coal per day.

Ventilation is produced by the exhaust steam from the pump, which has been considerably improved since my first visit by the new air hole, as previously stated; 12,700 cubic feet at face of gangway per minute, per air report for month of November; men, 98,.

Machinery.—They use 2 hoisting engines of 90-horse power, 1 breaker engine of 30-horse power, in all 3 engines of 120-horse power; 1 steam pump and 12 steam boilers, which have been cleaned and examined and reported safe and in good condition.

Slope, No. 2, (Oakdale or Jeddo, No. 5.)—Sunk on the same dip of the same vein, and is 846½ feet long; elevation above tide at top of slope, 1,577 feet. The west gangway has been worked out and connects with slope

No. 1. The east gangways are driven on the switch back system in order to overcome the pitch. There are numerous breasts in these works, all of which are in good working order. They shipped during the year ending December, 1875, 60,102.16 tons of coal, and used 825 kegs of powder, and worked 128½ days. They employ 1 boss, 76 miners, 3 laborers, 4 company men, 11 drivers, 4 door boys, in the mines; 1 boss, 3 mechanics, 20 breaker men, 1 driver, 34 slate pickers, in all 158 men and boys and 30 mules, and a breaker capacity of 500 tons of coal per day.

Ventilation is produced by the exhaust steam of the pump, the slope being the intake and the pumpway the outlet; ventilation, good; 14,175 cubic feet at face of gangway per minute, per air report for November; men employed, 100.

Machinery.—They use 2 hoisting engines of 80-horse power, 1 breaker engine of 30-horse power; total number of engines, 3; aggregate horse power, 110; and 4 steam pumps and 12 steam boilers, and 4 tubular boilers, which have been cleaned, examined and reported safe and in good condition; also 2 steam boilers at Jeddo saw mill reported in good condition. John Turner, general mine superintendent; William H. Thomas, mine boss, No. 2; Peter Brown, mine boss, No. 1; William Mills, outside foreman, No. 1; G. G. Schollenberger, outside foreman, No. 2.

Ebervale Collieries.

These collieries are situated about four miles north-east of Hazleton, on the estate of the Union improvement company, and operated by the Ebervale coal company.

Slope, No. 1.—Sunk on the south dip of the Mammoth or E vein a distance of 820 feet, at an angle of about 30°; vertical, 273 feet. This slope has been sunk to the basin. The east gangway has been driven 2,100 feet. There are two gangways on the east, one on each dip. Those gangways come together at about — feet from the bottom of the slope. This gangway has been driven to the boundary line. The west gangway connects with No. 2 slope east gangway. A new traveling-way has lately been made for the men to travel to and from their work.

Slope, No. 2.—Sunk on the south dip of the same vein a distance of 853 feet, at an angle of about 30°; vertical, 284 feet. This slope has been sunk to the basin. The basin dips from east to west. The difference of elevation between the bottom of No. 1 and No. 2 slopes is 20 feet. The coal from the west side of No. 3 counter is dumped into a shute and re-loaded on No. 1 slope gangway, and part of the coal on the east side of No. 3 is dumped into a shute and re-loaded on the west gangway of slope, No. 2. The coal from Nos. 1 and 2 slopes is prepared by the same breaker

Slope, No. 3.—Sunk on the north dip of the Mammoth or E vein a distance of 915 feet; vertical, — feet; length of first lift, 365 feet; length of second lift, 305 feet; length of third lift, 245 feet to basin. The east gangway has been driven 3,900 feet to the boundary line, with 13 breasts working. Third lift, west gangway, has been driven 1,200 feet and the east gangway 2,400 feet, with 23 breasts working; width of breast, 30 feet; width of pillar, 18 feet; thickness of vein, 30 feet. There is an excellent roof in all the slopes, and the mines are well timbered to prevent the falling of coal, rock, slate, &c. There are two large commodious breakers on the property. They have breaker capacity of 1,500 tons per day. They employ in all the mines 123 miners, 65 laborers, 9 drivers, — door boys, 41 company men, in the mines; 5 bosses, 11 mechanics, 16 head and plate men, 76 company men, about the breaker; — driver boys, 71 slate pickers;

all men and boys employed, 417; mules, 53; they shipped during the year 166,900 tons of coal, and used — kegs of powder and worked — days.

Ventilation is produced by the exhaust from the pump. These mines are well ventilated. No. 3 is ventilated by a furnace, air circulating 35,000 cubic feet per minute at face of all the gangways; men employed, 330.

Machinery.—They use two mine locomotives inside; they use 5 hoisting engines of 200-horse power, 2 breaker engines of 50-horse power, 5 pumping engines of 320-horse power; in all 12 engines of 450-horse power; they have a brake on the drum at No. 1 but not on the other slopes; they have no speaking tube; they have examined their boilers and reported the same in safe and good condition; they have steam gauges on their boilers and also safety-valves. The breaker machinery is fenced off for the safety of the employed.

Remarks.—They have furnished maps of their workings and reported all serious accidents to persons; they have no boys under twelve years of age working inside. I have caused legal proceeding to be taken against three persons for violation of section eleven of the mining law, for riding more than 10 men at one time at these collieries. I deemed it proper to let them go by paying the cost, as they pleaded ignorance of the law, and that it had been a customary thing, promising never to do so again. Wm. S. Harris, superintendent; A. Nesbit, mine agent.

Harleigh Colliery.

Situated two miles north of Hazleton, on the estate of the Big Black Creek Improvement Company, and operated by the Harleigh Coal Company. It consists of 2 slopes and 2 breakers, and one slope kept for pumping.

Slope No. 1.—Sunk on the south dip of the Mammoth or E vein, a distance of 461 feet; elevation at top of slope above mid-tide 1,518 feet, at bottom 1,363 feet, thickness of vein 27 feet. In the south-east gangway there is an inside slope of about 240 feet in length, driven across the pitch, and the coal is hoisted to a level or bottom of the slope proper; shutes have been put in for the purpose of working the coal left in the upper gangway. Those shutes extend from the bottom of the subterranean slope to the upper gangway. A great deal of coal from the old workings can be thus mined, and the company remunerated for their investments.

Ventilation is produced by the exhaust steam from the pump, and from the heat of the steam pipes which affords the power of rarefaction. Slope No. 2, which is now kept for pumping, is the intake and the slope being the outlet. The air has been measured and reported according to law, 1,000 cubic feet at face of gangway, at outlet 25,000 cubic feet per minute; men employed, 68.

Machinery.—They use 2 hoisting engines of 74-horse power, 1 breaker engine of 24-horse power, 2 pumping engines of 120-horse power; total number of engines 5, of 218-horse power. They have 26 steam boilers, reported safe and in good condition. There is a brake attached to the hoisting drum, and a car with bridle-chains expressly made for the men to ride up and down the slope.

Remarks.—They have furnished maps of their mines, they have a practical mining boss, boys are not allowed to work inside under 12 years of age, and they do not allow any person to ride on loaded cars. The parties in charge understand their duty in case of serious accidents to persons. They employ, in slope No. 1, 26 miners, 40 laborers, 6 company men, 12 driver boys, 2 door boys, 1 boss, total inside, 87; 3 outside bosses, 5 mechanics, 10 head and plate men, 15 company men about the breaker, 5

drivers, 42 slate pickers, all men employed outside, 80; mules, 13; coal mined during the year, 91,919.15 tons; days worked, 91; powder used, 690 kegs; capacity of breaker, 450 tons per day.

Slope No. 2 has been worked out, and is now used for pumping.

Slope No. 3.—Sunk on the same vein and on the same dip, a distance of 708 feet, vertical 297 feet, average thickness 27 feet. The top of the slope is 1,521 feet above mid-tide, at the bottom of the same 1,224 feet. A gangway is now being driven eastward under the slope in order to mine some coal which could not be worked heretofore. They employ inside 1 boss, 45 miners; 54 laborers, 11 company men, 15 drivers, 3 door boys, total inside, 129; outside 2 bosses, 5 mechanics, 5 head and plate men, 11 company men, 3 drivers, 51 slate pickers, total outside, 77; mules, 33; powder used, 770 kegs; number of days worked, 122½.

Ventilation.—This is effected by the exhaust from the pump, 11,000 cubic feet of air per minute at face of gangway, and 25,000 cubic feet per minute at outlet; men employed, 108; air good.

Machinery—They use 3 hoisting engines of 128-horse power, 1 breaker engine of 24-horse power, and 2 steam pumps, (Allison's,) total number of engines 4, aggregate horse power 152.

James H. M'Kee, general superintendent; John Lloyd, mine boss; William Silver, outside foreman.

Lattimer Collieries.

These collieries are situated about 3 miles north of Hazleton, on the estate of the Black Creek Improvement Company, and operated by Pardee Bros. & Co.

Slope, No. 1.—Sunk on the north dip of the Mammoth or E vein a distance of 489 feet; vertical, 297 feet; thickness of vein about 30 feet. This slope has been sunk to the basin. The east gangway has been driven about 2,400 feet and the west 1,200 feet, which has been discontinued; breasts working, 23; width of, 30 feet; width of pillar, 18 feet. A good travelingway has been made for men to travel to and from their work. They employ 1 boss, 53 miners, 9 laborers, 6 company men, 6 drivers, 1 door boy, in this slope; outside, 1 boss, 2 mechanics, 2 head and plate men; 12 breaker men, 2 drivers and 50 slate pickers, in all 145 men and boys. They shipped 67,400$\frac{4}{20}$ tons of coal from this slope, and used 928 kegs of powder, and worked 134 days. The breaker is calculated to prepare 800 tons of coal per day.

Ventilation is produced by the exhaust steam from the pump; 7,500 cubic feet per minute at face of gangway; at outlet, 8,000 cubic feet per minute; all men employed inside, 76. They have measured and reported according to law.

Machinery.—They have 1 hoisting engine of 100-horse power, 1 breaker engine of 25-horse power, 2 pumping engines of ———. They have 14 boilers; have been cleaned, examined and reported safe and in good condition. They have steam gauges on their boilers and safety valve.

Slope, No. 2—Sunk on the south dip of the same vein as No. 1 a distance of 360 feet; perpendicular depth, 297 feet. The east gangway has been driven across the basin, connecting with slope, No. 1, on the north dip. The west gangway has been driven 4,500 feet. A locomotive engine hauls the coal from the turnout to the bottom of the slope. The coal from the counter is dumped into a shute and reloaded on the main gangway. The counter gangway has been driven about 450 feet; width of breast, about 30 feet; width of pillar, 18 feet; thickness of vein, about 30 feet. They employ 1 boss, 46 miners, 13 laborers, 13 company men, 6 drivers, 2 door

boys, in the slope; and 1 boss, 3 mechanics, 2 head and plate men, 7 breaker men, 2 drivers, 54 slate pickers, in all 150 men and boys. They shipped 60,909$\frac{1}{20}$ tons of coal from this slope during the year ending December, 1875, and worked 130 days, and used 928 kegs of powder. They have 2 large and commodious breakers.

Ventilation is produced by the exhaust steam from the pumps; 8,600 cubic feet at face of gangway; men employed, 81.

Machinery in this slope and breaker consists of 1 hoisting engine of 120-horse power, 1 breaker engine of 25-horse power, 1 pumping engine of 150-horse power; total, 3 engines of 295-horse power, and 1 locomotive engine inside, and 12 boilers, which have been cleaned and examined January 1, 1875, and are reported safe and in good condition. They have steam gauges on the boilers and a brake on the hoisting drum.

Remarks.—They are making a map or tracing of the mines. There are no boys under 12 years of age working in the mines. They comply, generally, with the requirements of the law. M. M. Cooper, superintendent; William Martin, mine boss; M. M. Cooper, outside foreman.

Milnesville Collieries.

Situated three miles north of Hazleton, on Porter's estate, and operated by the Stout coal company.

Slope, No. 6.—Sunk on the north dip of the Mammoth or E vein a distance of 294 feet to the basin; vertical, — feet. The east side has not been worked owing to the boundary line being so close to the slope. The west gangway has been driven on the basin to the surface. The mining of the coal is now confined to the stripping or patching of the same from the surface. The coal is taken through a gangway to a point about midway in the slope; thence it is hoisted to the breaker. As the synclinal rises so rapidly westward it would be very difficult to mine this coal otherwise than the way as before stated, because the wash or the surface would cave in, causing great loss of coal.

Slope, No. 7.—Sunk on the south dip of the Mammoth or E vein a distance of 441 feet, at an angle of about —°, and is sunk to the basin. The upper lift has been worked by the old Milnesville slope. There are two gangways on the west side, one on each dip. The east gangway has been driven considerable distance, and contains — breasts, which are opened by a shute 7 feet long and about 9 feet wide to where a battery is erected to prevent the coal from rushing too rapidly into the shute, &c., from which place the breast is widened to about 30 feet, leaving ample pillar on each side for the support of the roof. Cross-cuts are driven through these pillars whenever required for the ventilation of the breastings. They employ 2 bosses, 35 miners, 35 laborers, 10 company men, 11 drivers, 2 door-boys, in the mines; and 2 bosses, 7 mechanics, 58 breaker-hands and choppers, 34 slate pickers; in all 196 men and boys. They shipped 66,000 tons of coal during the year ending December 31, 1875, and used 1,160 kegs of powder, and worked 265 days at the two breakers, which have a capacity of about 800 tons of coal per day.

Machinery.—They use 3 hoisting engines of 180-horse power, 2 breaker engines of 60-horse power; in all 5 engines of 240-horse power, and 4 steam pumps and 21 boilers, cleaned, examined and reported safe and in good condition December 25, 1875.

Ventilation is produced by the exhaust steam from the pumps, the slope being the intake and the pump-way the outlet. The ventilation is good in these mines, as there are good air-ways driven along the main gangway,

which affords an exit for the foul air. William S. Harris, superintendent; Charles Kernbaugh, assistant superintendent; Paul Winters, mining boss; John A. Mason and James Wanent, outside foremen.

Hollywood Colliery.

Situated about 3 miles north west of Hazleton, on the estate of the Big Black Creek Improvement Company, and operated by Calvin, Pardee & Co.

Slope No. 1.—Sunk on the south dip of the Mammoth or E vein, nearly to the basin, at an angle of about —°, and is 242 feet deep. The east side of the slope has not been worked, owing to the old works of Milnesville being full of water, and there is no map to show the thickness of pillar left. The west side is worked by two gangways, one on each dip. These gangways came together as they advanced west, owing to the basin narrowing, so that both dips are now worked by the one gangway. The basin dips eastward. There are 17 breasts working in the slope. The ventilation is tolerable.

Slope No. 2.—Sunk on the south dip of the same vein, but in a separate basin, and is 289 feet deep, nearly to the basin, perpendicular depth — feet. As yet this slope has not proved very satisfactory to the operator, as the gangway seems to spoon out in the face of the gangway. The east side has not been worked. This is a new slope, and the timbering can not be excelled in the district. The coal will be prepared at breaker No. 1. If the vein proves good the company intend putting up first-class machinery. They have a breaker capacity of 600 tons of coal per day. They mined 53,741.18 tons of coal during the year ending December 31, 1875, and used 1,117 kegs of powder, worked 128 days. They employ 1 boss, 34 miners, 24 laborers, 4 company men, 3 drivers, 1 door boy in the mines; 1 boss, 4 mechanics, 6 breaker men, 1 driver, 37 slate pickers, in all 135 men and boys, and 11 mules.

Ventilation is produced by grate fires placed in the outlet, and the slope serving as an intake, 5,400 cubic feet at face of gangway; men employed, forty-nine.

Machinery.—They use 2 hoisting engines of 130-horse power, 1 breaker engine of 15-horse power, 2 pumping engines of 90-horse power, total 5 engines, aggregate horse power 235, and 16 steam boilers, which have been reported cleaned and examined December, 1875, and are in good condition, and one locomotive boiler for sinking purposes, reported in good condition according to law.

Remarks.—This is a new place and has not been reported heretofore. There is a great quantity of coal which will be mined by stripping or uncovering the coal from this tract of land which is of superior quality.

D. S. Wintersteen, superintendent; William Beachel, mine boss; William Garlach, outside foreman.

Stockton or East Sugar Loaf Collieries.

Situated on the estate of Smith, Roberts & Packer, and partly on the estate of Tench Coxe, and operated by Linderman, Skeer & Co.

Slope No. 2.—Sunk on the south dip of the Mammoth or E vein, a distance of 1,450 feet, at an angle of about 31°, perpendicular depth of slope 803 feet. The top of the slope is 1,584 feet above mean-tide, and at the bottom of the same 781 feet. The east gangway has been driven 1,853 feet, and the west gangway 875 feet. The workings of this slope connects with No. 1, and No. 1 connects by an inside slope with No. 5. No. 2 is

now drowned, owing to the fire in No. 1 slope, which took place from the boiler flue April 7, 1875.

Slope No. 3.—Sunk on the estate of Hon. Tench Coxe a distance of 1,096 feet on the Mammoth or E vein, at an angle of about 17°. The top of the slope is 1,578 feet above tide, and at the bottom of the same 1,262 feet, perpendicular depth 316 feet. This slope is now kept for pumping, the coal being worked out.

Slope No. 4.—Sunk on the north dip of the same vein, a distance of 461 feet, at an angle of about 33¼°, perpendicular depth of slope 261 feet, height above tide at top of slope 1,545 feet, at bottom 1,284 feet. The east gangway has been driven 1,250 feet, with 15 breasts worked. The bottom lift has been worked out, and a counter gangway has been driven to work the crop coal. The coal from this slope is prepared at No. 5 slope breaker. Ventilation 6,872 cubic feet; men employed, 29.

Slope No. 5.—Sunk to the basin on the north dip of Mammoth or E vein, a distance of 642 feet, at an angle of about 34¼°, perpendicular depth of slope 359 feet, elevation above tide at top of slope 1,549 feet, at bottom 1,190 feet. The east gangway has been driven 1,800 feet, with 6 breasts working. The west gangway has been driven a considerable distance, with numerous breasts. There are 2 balance planes in this slope for letting the coal from the counter gangways to the level of No. 5 slope west gangway. By these counter gangways they are able to work the coal left by the proper gangway, owing to the range becoming too long for the miner to carry his lumber up the pitch so great a distance, and sometimes due to other causes, such as the top rock falling before the breast is half-way up, &c.

Ventilation.—This is produced by a 16 feet diameter fan, assisted by the exhaust steam from the pumping engine, ventilation 9,760 cubic feet at face of gangway, at outlet 18,920 cubic feet; men employed, 84.

Slope No. 7.—Sunk on the south dip of the Mammoth or E vein, a distance of 560 feet, at an angle of about 33¼°, height above mean-tide at top of slope 1,551 feet, and at the bottom 1,249 feet, perpendicular depth of slope 302 feet. The west gangway has been driven 1,400 feet, with 18 breasts opened. The east gangway has been driven 1,200 feet, with 12 opened. These breasts are opened at right angles with the gangway. A shute 21 feet in length is driven up the pitch 9 feet wide to where a battery is erected to prevent the coal from rushing too rapidly into the shute, &c., from which place the breast is widened to 27 feet. These breasts are worked by one man-way, which affords very poor ventilation for the miner, as the cross-cuts which are driven through the pillar become blocked with coal, preventing the circulation of the air, and as a general thing in the system of opening breasts by one man-way perhaps half dozen men are made to suffer on account of one man not having his breast far enough up to drive his cross-cut. I have tried to persuade different parties to carry 2 man-ways for their benefit and safety, (especially where the vein pitches very rapidly.) But this being not quite as remunerative to the miner and costing a litte more to the operator, and an inovation upon their custom, I find it is up hill work.

Slope, No. 8, is a new slope sinking on the north dip of the Mammoth or E vein. A new breaker will be built to prepare the coal from this slope. There are 65,918 feet of T iron track in and about all the mines, with 88 mine cars, and a breaker capacity of 1,900 tons of coal per day. Amount of coal shipped from all the breakers during the year ending December 31, 1875, 110,000 tons; quantity of powder used, 2,250 kegs. There are 3 bosses, 160 miners, 90 laborers, 65 company men, 20 drivers, 1 door boy, in all 339 men and boys employed inside; and 6 bosses, 37 mechanics, 20

head and plate men, 67 men about the breaker, 8 drivers, 80 slate pickers, in all 218 outside, and 52 mules.

Ventilation.—This is produced by a 7-feet diameter fan at slope, No. 7. There are good air-ways driven parallel with the gangway. The breasts are not very satisfactory ventilated, owing to the one man-way system of mining.

Machinery.—They use 7 hoisting engines of 340-horse power, 3 breaker engines of 60-horse power, 3 pumping engines of 180-horse power, 2 fan engines of 25-horse power; total number of engines, 15; aggregate horse power, 605.

Wm. Airey, general superintendent; Wm. Barber, foreman.

South Sugar Loaf Colliery.

Located in Hazle township, Pa., bounded on the east by Stockton and on the west by Hazleton, on the estate of the Diamond coal company, and operated by A. Pardee & Co.

Slope, No. 3.—Sunk on the north dip of the Mammoth or E vein, at an angle of 24° to 50°; length of slope, 667 feet; perpendicular depth, 382 feet; elevation above tide at top of slope, 1,571 feet; at the bottom of the same, 1,189 feet. This slope connects in the west gangway by an air-hole with the plane or counter-gangway, and also connects by another air-hole, 285 feet deep, with Sugar Loaf or No. 2 slope. This slope (No. 2) yields carburetted hydrogen gas, or fire-damp, but not to a great extent. These mines are well timbered wherever required, and great care is exercised for the safety of the men, and the mode of working is considered safe.

Ventilation is produced by the steam exhaust from the pump; tolerably ventilated, 10,000 cubic feet per minute circulating through the mines, per air report for November. Operatives, 96.

Machinery.—They use 1 hoisting and pumping engine of 90-horse power, 1 breaker engine of 25-horse power; in all 2 engines of 115-horse power, and 8 steam boilers, cleaned, examined and reported safe and in good condition.

Remarks.—They employ 1 boss, 63 miners, 20 laborers, 7 company men, 4 drivers, 4 door boys, in the mines; 1 boss, 5 mechanics, 33 breaker men, 1 driver, 45 slate pickers; in all 184 men and boys in and about the mines and 15 mules. They shipped (including Sugar Loaf) 68,430.05 tons of coal, and used 840 kegs of powder; worked $129\frac{7}{10}$ days during year ending December 31, 1875; breaker capacity, 500 tons of coal per day.

C. Pardee, superintendent; Thomas Dickinson, general mine superintendent; William Fatkin, mine boss; John W. Cooper, outside foreman.

Sugar Loaf Colliery.

Located in Hazle township, on the estate of the Diamond Coal Company, and operated by A. Pardee & Co., and consists of 2 slopes and 1 breaker.

Slope, No. 1.—Sunk on the south dip of the Mammoth or E vein at angle of about 32° 36′, and is 1,615 feet long; perpendicular depth, 870 feet; elevation above tide at top of slope, 1,619 feet; at bottom of the same, 749 feet. This slope is being re-timbered preparatory to being re-worked. Sunk to basin.

Slope, No. 2.—Sunk on the same dip of the same vein. Length of slope, 1,188 feet; perpendicular depth, 659 feet; elevation above tide at top of slope, 1,587 feet; at the bottom of the same, 928 feet. This slope has been sunk 5 lifts. A tunnel on the east side has been droven, cutting the big vein on the north dip. Connects with South Sugar Loaf, or No. 3

slope. The work done in No. 2 principally consists of robbing pillars in the old workings, but in the tunnel not much work has been opened. The works are considered safe.

Ventilation, tolerable.

Machinery.—They use 2 hoisting engines of 120-horse power, 1 breaker engine of 40-horse power, 1 pumping engine of 60-horse power, in all 4 engines; aggregate horse power 220, and 23 steam boilers, which have been cleaned, examined and reported to be safe and in good condition December 12, 1875.

Remarks.—They employ 1 boss, 26 miners, 14 laborers, 4 company men, 4 drivers, in the mines; 1 boss, 5 mechanics, 25 breaker men, 1 driver, 24 slate pickers, in all 105 men and boys in and about the mines, and 10 mules. They used 185 kegs of powder, and worked $95\frac{8}{10}$ days during the year. For shipments see South Sugar Loaf, or No. 3, slope report.

C. Pardee, superintendent; Thomas Dickinson, general mine superintendent; Robert Stevens, mine boss; Harmon Minick, outside foreman.

Laurel Hill Colliery.

Located at Hazleton, on the estate of the L. V. R. R. Co., and operated by A. Pardee & Co.

Slope, No. 2, (or Hazleton, No. 4.)—Sunk on the north dip of the Mammoth or E vein, at an angle of 33° 2′, and has been sunk three lifts, the first lift 86 feet deep, the second 217 feet and the third 239 feet; total length, 542 feet; perpendicular depth, 296 feet, and is now used for lowering and hoisting the men and also for pumping the water from No. 5.

Slope, No. 3, (or Hazleton, No. 5.)—Sunk on the same vein to the level of No. 2, and contains three tracks to the second lift. The west gangway in the second lift has been driven to the boundary line. Another gangway has been driven across the pitch, crossing the old water level gangway, in order to mine the coal left by said gangway. On the east side of the slope they are making preparations to start a gangway across the pitch to work the coal left by the old breasts. The west gangway in the bottom lift has been driven to the boundary line, and is about 8,040 feet long, and contains 15 breasts working and 115 breasts worked out. These breasts are opened by a shute 18 feet long to the battery; thence it is widened out to 30 feet, leaving a pillar between each breast of 24 feet for the support of the superincumbent strata. A locomotive engine hauls the coal from the turnout to the bottom of the slope, a distance of about 4,800 feet. The part the locomotive engine runs on is ventilated by a separate current of air. The east gangway has been driven 2,850 feet to where a balance plane is made, and is 163 feet long, angle 19°. The plane or counter-gangway connects by an air-hole with the west gangway of slope, No. 3, or South Sugar Loaf. Difference of elevation between these two gangways, — feet. The west gangway proper connects by an air-hole with slope, No. 1, or Hazleton mines, and also connects by the old west gangway in the upper lift with slope, No. 4, or East Crystal Ridge. The vein is about 30 feet thick, and the coal of superior quality.

Ventilation is produced by exhaust steam from the pumps and atmospheric action. At present the inlet is located in the upper west workings, and the air circulates through down to No. 3 west gangway; thence to the heading and returns *via* the airway and down to No. 1 or Hazleton mines by an air-hole connection, as previously stated. The ventilation in No. 3 Laurel Hill slope is very satisfactory.

Machinery.—They use 3 hoisting engines of 170-horse power, 1 breaker engine of 25-horse power, 1 pumping engine of 60-horse power; in all 5

engines; aggregate horse-power, 255, and 5 steam pumps, with 24 steam boilers, cleaned, examined and reported safe and in good condition.

Remarks.—They employ 2 bosses, 70 miners, 44 laborers, 21 company men, 6 drivers, 4 door boys, in the mines; 1 boss, 10 mechanics, 51 breaker men, 3 drivers, 80 slate pickers; in all 192 men and boys in and about the mines, and 45 mules. They worked 131¼ days, and used 1,110 kegs of powder; shipments of coal, see report of Hazleton, No. 1, mines. They have a breaker capacity of 800 tons of coal per day; there has not been any accident to person of any note in any of the Hazleton collieries during the year. Great care is taken on the part of the officers of the company for the safety of the men.

C. Pardee, superintendent; Thomas Dickinson, general mine superintendent; George Karchner and James Durkin, mine bosses; Jacob Pippert, outside foreman.

Hazleton Colliery, No. 3.

Located at the above named place, on the estate of L. V. R. R. Co., and operated by A. Pardee & Co.

Slope No. 3.—Sunk on the south dip of the Mammoth or E vein, and is 1,047 feet deep, perpendicular depth 555 feet, elevation above tide at top of slope 1,640 feet, at the bottom of the same 1,085 feet, and is sunk to the basin. They are now just opening their new lift. Scarcely any work has been done except driving gangways and air-courses. Great improvements are being made in the machinery.

Ventilation is good. They employ 1 boss, 9 miners, 20 laborers, 5 company men, 1 driver, in the mines; 1 boss, 4 mechanics, 19 breaker men, 2 drivers, 8 slate pickers, in all 70 men and a boy in and about the mines. They used 90 kegs of powder, and worked 136 7/15 days during year ending December, 1875. Breaker capacity 300 tons of coal per day.

Machinery.—They use 1 hoisting engine of 70-horse power, 1 breaker engine of 15-horse power, 2 pumping engines, one of 90-horse power and the other of 60-horse power, in all 4 engines, aggregate horse power 235, and 21 steam boilers—cleaned, examined and reported in good condition.

C. Pardee, superintendent; Thomas Dickinson, general mine superintendent; Isaac Smith, mine boss; Charles Heckman, outside foreman.

Hazleton Colliery.

Located at the above named place, on the estate of the L. V. Railroad Company, and operated by A. Pardee & Co.

Slope, No. 1, has been sunk eight lifts on the Mammoth or E vein a distance of 2,236 feet to the basin; vertical, 808 feet; elevation above tide at top of slope, 1,673 feet; at bottom, 865 feet. The lower lift is not working. It is probable the coal from the bottom lift will be mined from the west gangway of slope, No. 3, as the old west workings of the same slope was left to be worked by No. 1 slope, east gangway, which consists of about 9 breasts working. The west gangway has been worked out. A tunnel, 150 feet long, has been driven on the west side, cutting the same vein on the north dip. The gangway has been worked about 300 feet on each side of the tunnel, and continues in good coal. This part of the mine connects by an air hole with the west gangway of slope, No. 3, Laurel. Thickness of coal, about 27 feet; width of breasts, 30 feet; width of pillar, 24 feet; length of shute, 18 feet.

Ventilation is produced by atmospheric action. The inlet is located at the head of the tunnel after traversing the workings. The current of air

is conducted through the tunnel to the outlet; 3,750 cubic feet per minute at face of gangway, per air report for November; men employed, 33.

Remarks.—The old workings are nearly worked out. I requested the boss to stop one gangway owing to an inadequate amount of air. As this gangway was about being finished the parties very readily complied. They employ 1 boss, 35 miners, 21 laborers, 4 company men, 7 drivers, 4 door boys, in the mines; 1 boss, 5 mechanics, 33 breaker men, 21 slate pickers, 4 drivers, in all 136 men and boys in and about the mines. They shipped (including Laurel Hill, No. 3, and No. 3, Hazleton) 121,420.19 tons of coal to market, and worked (at No. 1) 113$\frac{7}{10}$ days, and used 455 kegs of powder. Breaker capacity, 450 tons of coal per day.

Machinery.—They use 1 hoisting engine of 60-horse power, 1 breaker engine of 20-horse power, 1 pumping engine of 60-horse power, in all 3 engines; aggregate horse power, 140; and 11 boilers, reported cleaned and examined and in good condition, and steam gauges on the boilers, to indicate the pressure of the steam.

C. Pardee, superintendent; Thomas Dickinson, general mine superintendent; Peter Watson, mine boss; Christ Wetteran, outside foreman.

Cranberry Colliery.

Located about 1 mile west of Hazleton, on the estate of A. S. & E. Roberts, and operated by A. Pardee & Co.

Slope No. 1.—Sunk on the south dip of the Mammoth or E vein, at an angle of about 15° 45′, and is 732 feet long, the top of the slope is 1,622 feet above mean tide, and at the bottom 1,423 feet, perpendicular depth 199 feet. The west gangway on the south dip has been worked to the boundary line. The west gangway on the north dip consists of 18 breasts working. The ventilation is somewhat defective in this gangway. The east gangway on the north dip has been worked out, but is now used for taking the coal from the rock slope. This is a slope sunk through rock from the surface to the gangway, thence to the basin, and consists, on the west side, of two gangways, one on each side of the dip. This part of the slope is nearly worked out. The east gangway has been driven a considerable distance, and 8 breasts working and room for 28 more. The coal reserved will be taken via "Crystal Ridge," or slope No. 4.

Ventilation is produced by natural causes. There are good air-ways driven parallel with the main gangway, but there being no appliances to create the draft necessary for this mine, especially in the west gangway on the north dip. The air is not very commendable. I have requested that the ventilation be improved.

Machinery.—They use 1 hoisting engine of 60-horse power, 1 breaker engine of 20-horse power, 1 pumping engine of 60-horse power, 1 saw mill engine of 20-horse power, in all 4 engines of 160-horse power, and 15 boilers—cleaned, examined and reported safe and in good condition.

Remarks.—They employ 1 boss, 64 miners, 28 laborers, 9 company men, 7 drivers, 2 door boys, in the mines; 1 boss, 7 mechanics, 30 breaker men, 1 driver, 45 slate pickers, in all 195 men and boys in and about the mines; and 29 mules. They shipped 80,973.14 tons of coal (including East Crystal Ridge) during the year ending December 31, 1875, and used 1,080 kegs of powder, and worked 122$\frac{3}{4}$ days. Breaker capacity 550 tons of coal per day.

C. Pardee, superintendent; Thomas Dickinson, mine superintendent; Cronrod Miller, mine boss; Thomas W. Howells, outside foreman.

Crystal Ridge Colliery.

Located near Hazleton, on the estate of A. S. and E. Roberts, and operated by A. Pardee & Co.

Slope, No. 3.—Sunk on the north dip of the Mammoth or E vein, and is 344 feet long. This slope is partly sunk through rock to the vein passing the east gangway from Cranberry slope, and is sunk to the basin. Elevation above tide at top of slope, 1,571 feet; at the bottom of the same, 1,338 feet; perpendicular depth of slope from surface, 233 feet, to basin. The hoisting from this slope is done by the machinery used heretofore to hoist the coal from slope, No. 2, Crystal Ridge, or Cranberry, No. 3. For further information concerning this slope see Cranberry report.

Slope, No. 4, East Crystal Ridge, or Cranberry, No. 5.—Sunk on the north dip of the same vein at an angle of about —°. Length of slope, 237 feet; perpendicular depth, 101 feet; elevation above tide at top, 1,600 feet; at the bottom of the same, 1,499 feet. Slope, No. 2, as previously reported, has been abandoned and the coal worked out. Slope, No. 4, or East Crystal Ridge, cuts off the water level gangway driven from Laurel Hill slope, and is sunk a lift below it. The west gangway in the lower lift will be driven to connect with the east side gangway of the rock slope, No. 3, as before stated in Cranberry slope report. Slope, No. 4, contains a counter gangway or a continuation of Laurel Hill gangway, with 8 breasts working, all in good order, and the mode of working is considered safe.

Ventilation is produced by atmospheric action. The slope and the old gangway being the intake and the pump-way the outlet. There are good air-ways being driven along the main gangway. Ventilation good.

Machinery.—They use 2 hoisting engines of 120-horse power, 1 breaker engine of 25-horse power, in all 2 engines of 115-horse power; and 16 steam boilers, cleaned, examined, reported safe and in good condition.

Remarks.—They employ 1 boss, 24 miners, 25 laborers, 2 company men, 3 drivers, in the mines; 1 boss, 4 mechanics, 18 breaker men, 17 slate pickers, in all 95 men and boys in and about the mines. They worked 96¾ days, and used 530 kegs of powder. They have a breaker capacity of 500 tons of coal per day. There is a large commodious new breaker built to prepare the coal from this slope. Everything is in first-class working order. For shipments see report of Cranberry colliery.

C. Pardee, superintendent; Thomas Dickinson, general mine superintendent; Christ. Snyder, mine boss; George Gerlock, outside foreman.

Mount Pleasant Colliery.

Situated 2 miles west of Hazleton, Luzerne county, on the estate of C. Koons and others, and operated by William Taggart. This colliery hereafter will be operated by A. Pardee & Sons, as the lease of the former operator having expired.

Slope No. 2.—Sunk on the north dip of the Wharton or D vein, thickness about 9 feet, length of slope 508 feet, perpendicular depth 229 feet, the top of the slope is 1,706 feet above tide, and at the bottom 1,477 feet. There is a counter gangway about halfway in the slope, on the east there is a counter gangway being driven to work the coal left by the lower lift.

Ventilation.—This is produced by the steam from the pump and atmospheric action. The ventilation is not very commendable, but there is some hopes of having it improved hereafter by the new operators.

Machinery.—They use 1 hoisting engine of 50-horse power, 1 breaker engine of 15-horse power; total, 3 engines of 140-horse power.

Remarks.—They have furnished a map of mines. No person is allowed to ride upon loaded cars. They have no brake on the hoisting drum, nor speaking tubes in the slope. They have no boys under 12 years of age working inside. They have no wash-house for the men to wash in. They have not reported accidents. Men employed inside: 1 boss, 40 miners, 22 laborers, 7 drivers, 2 door boys; outside, 1 boss, 9 mechanics, 4 head and plate men, 6 company men, 4 drivers, 24 slate pickers; total number men and boys inside, 72; outside, 48; mules, 23. Coal shipped, 62,000 tons; sold to individuals, 600 tons; powder used, 1,495 kegs; number of days worked, 255.

William Taggart, superintendent; Hugh Sheriden, mine boss; John Brown, outside foreman.

Humboldt Colliery.

Situated four miles west of Hazleton, on the estate of the L. V. R. R. Co, and operated by Linderman, Skeer & Co.

Slope, No. 1.—Sunk on the Wharton or D vein, dipping north about $24\frac{1}{4}°$; length of slope, 390 feet; elevation above tide at top of slope, 1,742 feet; at bottom, 1,582 feet; perpendicular depth of slope, 160 feet. The coal in this slope has been worked out, and is now used for pumping.

Slope, No. 3.—Sunk on the north dip of the same vein a distance of 680 feet, at an angle of about $23\frac{1}{2}°$; elevation above tide at top of slope, 1,740 feet; at bottom of the same, 1,472 feet; perpendicular depth of slope, 268 feet. The east gangway has been driven 1,634 feet, with 14 breasts working, and the west 2,180 feet, with 12 breasts working. Thickness of vein about 9 feet; width of breast, 27 feet; width of pillar, 15 feet. The mode of working is considered safe. There are 14,108 feet of T iron track in and about the mine, with 29 mine cars, and a breaker capacity of 400 tons per day. They have mined in 132 days 49,200 tons of coal, and used 1,029 kegs of powder; about 482 tons of coal mined for each man employed inside, and about one-half pound of powder used for each ton of coal mined.

Ventilation.—The ventilation has been considerably improved since my first visit by driving an air-hole, which connects with the old working of No. 2, which has been abandoned owing to the coal being worked out. The ventilation is produced by the steam from the pumping engine, being exhausted into the outlet; amount of air at face of gangway, 8,200 cubic feet; at outlet, 11,600 cubic feet; men employed inside, 102; men employed outside, 44; boys picking slate, 44.

Machinery.—There are 2 hoisting engines of 180-horse power, 1 breaker engine of 30-horse power, 1 pumping engine of 60-horse power; total, 4 engines of 270-horse power.

W. Marshall Reese, general mine superintendent; William James, mine boss.

Gowen Colliery.

This colliery is situated 12 miles west of Hazleton, in Luzerne county, on the estate of Roberts Coal Company, and operated by the Roberts Run Coal Company.

Description.—Slope No. 1, sunk on the north dip of ——— vein, a distance of 240 feet, at an angle of about 55°. The west gangway has been driven 2,595 feet, with 7 breasts working. There are 5,730 feet of T iron track in and about the mines, and 26 mine cars. The drift has been driven west 1,800 feet, including two tunnels, one of 165 and the other 72 feet. Those veins have not been definitely named, but suppose them to be the

Wharton or Buck Mountain. They ship about 150 tons of coal per day, with a breaker capacity of 450 tons per day.

Ventilation.—This is produced by a furnace located on top of the outlet, which gives very unsatisfactory results, owing to the furnace being placed so far off from where the power of rarefaction is required. The air is conducted down the slope, thence along the main gangway to the first breast opened next to the face of the gangway, thence back through the crosscuts to the up-cast. This mine generates gas. This mode of ventilation does very well where the vein will not admit of an air-way being driven. But the great trouble encountered is in keeping the shutes air-tight to force the air to the face of the gangway, which is a matter of impossibility, as the shute must be opened while the laborer loads his car. If an air-way can possibly be driven parallel with the main gangway it is preferable to do so. The air has been measured and reported according to law, 6,720 cubic feet at inlet, 7,300 cubic feet at outlet. Men employed, 34.

Machinery.—They use 1 hoisting engine of 60-horse power, 1 breaker engine of 30-horse power, with 5 boilers—reported safe and in good condition. They have no metal speaking tube, and have no brake on the hoisting drum. They do not allow men to ride on the slope. They have competent and sober engineers, they seem to have a competent and practical mining boss, they have steam gauges on their boilers, and they have reported all serious accidents to persons. They employ inside: 1 boss, 30 miners, 10 laborers, — company men, 3 drivers, 1 door boy, total number of men and boys inside 46; outside: 1 boss, 2 mechanics, 3 head and plate men, 10 company men about the breaker, 1 driver, 15 slate pickers, total outside 32; mules, 7. Coal mined, 25,659.12; powder used, 550 kegs; the vein is about 10 feet thick, coal good; days worked, 236; shipped from breaker, 24,298.07 tons.

Lewis Rothermal, general superintendent; Alex. Witchey, mine agent.

Beaver Meadow Collieries.

These mines are situated about three miles east of Hazleton, on the estate of Hon. Tench Coxe, and operated by Ely & Co.

Slope, No. 1.—Sunk on the north dip of the Mammoth or E vein a distance of 150 feet to the basin; vertical, 75 feet, at an angle of 30°. The vein is about 27 feet thick The coal mined at present is from the stripping or "patching." This slope will soon be abandoned, and a new one is now being sunk to take the place of Nos. 1 and 2 slopes.

Slope, No. 3.—Sunk on the Wharton or D vein a distance of 200 feet, at an angle of about 45°; vertical, 140 feet. The east gangway has been driven 1,000 feet and the west 300 feet. This slope has been sunk to the basin, and will soon be worked out on the east. The gangway is now being robbed back. The vein is about 9 feet thick.

Slope, No. 4.—This is a new slope, sunk on the Wharton or D vein a distance of 350 feet, at an angle of about 45°, dipping north. This slope has been sunk a lift lower than slope, No. 2, owing to the basin dipping from east to west, and connects with the west gangway on the north dip of slope, No. 2. The east gangway has been driven 300 feet and the west 275 feet. There are 7,500 feet of T iron and 1,500 feet of strap-iron track in and about the mines, and 80 mine cars, with a breaker capacity of 800 tons per day, including the new breaker. They employ 2 bosses, 16 miners, 35 laborers, 5 company men, 5 drivers, 1 door boy, in the mines; outside they have 1 boss, 7 mechanics, 4 head and plate men, 4 company men; about the breaker, — drivers, 13 slate pickers; in all 93 men and boys; mules, 9. They

shipped during the year 30,000 tons of coal, and used 600 kegs of powder and worked 118 days.

Ventilation.—This is produced by the exhaust from the pump in Nos. 3 and 4, and was not very commendable the first time I visited these mines, but there is some hope of having the new workings better ventilated, as precautionary measures are taken to reserve good air-ways.

Machinery consists of 3 hoisting engines of 100-horse power, 2 breaker engines of 50-horse power, 3 steam pumps of 120-horse power; in all 8 engines of 270-horse power; they have no speaking tubes in their slopes; they are putting a brake on their hoisting drum; they have had their boilers cleaned, examined and reported; they have steam gauges on their boilers.

Remarks.—They have furnished maps of their workings; they have had two men killed in these works during the year, one by a fall of roof and the other by the breaking of the machinery, letting the car to the bottom, which killed him while crossing. They had been notified to put a brake on the hoisting drum previous to the accident, and if they had complied perhaps the accident would not have occurred; at any rate they would have complied with the law. An inquest was held by Natin Martin, justice of the peace of Beaver Meadow. The jury rendered a verdict of an accident caused by defective machinery. The other accident by neglect of the miner standing timber in his breast. He had been notified of the danger by the inspector, and requested him to stop working on the pillar until there were some timbers stood in the breast. He said it was all right, and in about two weeks I was notified of a man having been killed. I repaired to the scene of the accident, and, unfortunately for him, it was the same person whom I had cautioned of the danger.

A new breaker is building, which will be completed by spring, to prepare the coal from the new workings. It is gratifying to me to be able to state that there is some hope of this colliery becoming equal to any of the others in the district under the management of the present superintendent.

James Waddle, superintendent; William Carlille, mine boss; Peter Keirn, outside foreman.

Coleraine Colliery.

Situated 4 miles south-east of Hazleton, on the estate of William T. Carter & Co., and operated by said company. Consists of 3 slopes and 1 drift.

Slope, No. 1, has been partly driven in rock to where the vein takes its regular course, dipping south. The vein worked is the Mammoth or E, about 27 feet thick. Length of slope, 1,100 feet; perpendicular depth, 230 feet. This slope will soon be worked out. Consists chiefly in robbing pillars.

Drift, No. 1, has been driven westward for a considerable distance on the Wharton or D vein. Thickness about 9 feet. This drift has not very far to go to the boundary connecting with Jeanesville workings. It has been very extensively worked. There is an excellent roof, and the coal is of very good quality. As the pillars had been considerably robbed I deemed it proper to order props to be stood along the main gangway for the safety of the men.

Ventilation.—This is effected by natural causes, and is not very satisfactory. I have ordered the same to be improved. The ventilation in the No. 1 slope is good. Number of men employed at drift and slope, No. 1: inside, 83; outside, 18; boys picking slate, 20.

Machinery.—There are 1 hoisting engine of 60-horse power, 1 breaker engine of 30-horse power, 2 pumping engines of 85-horse power; total, 4 engines of 175-horse power. Coal mined during year, 42,100 tons, as fol-

lows: Shipped to market, 40,000 tons; sold to employees, 500 tons; used for mine purposes, 1,600 tons. Powder used, 1,002 kegs. Number of days worked, 136½.

Slope, No. 2.—Sunk on the south dip of the Mammoth or E vein a distance of 585 feet, at an angle of about 38°. Thickness of vein about 27 feet. This slope has been sunk to the basin; the synclinal dips from west to east. The east gangway has been driven 300 feet, and cannot be worked any further at present owing to the old workings of Beaver Meadow being drowned, and there being no map of these old works to show what pillar has been left. The west gangway has been driven 1,300 feet, with 25 breasts opened. There are 2 gangways on the west, 1 on each dip.

Ventilation.—The ventilation is produced by the exhaust from the pumping engine. The air is good; 4,000 cubic feet at face of gangway; at outlet, 9,000 cubic feet; men employed, 56.

Slope, No. 4.—This is a new slope newly sunk on the Wharton or D vein. Length, 435 feet; vertical, 278 feet; angle, 40°. A new breaker is now being built to prepare the coal from the slope and drift. The ventilation in all the slopes is produced from the exhaust from the pump. There are 22,125 feet of T iron track and 11,100 feet of strap or wooden track in and about the mines, and 106 mine cars, 37 mules; breaker capacity, 650 tons per day. They mined in No. 2, during 143 days, 55,460 tons of coal, and used 755 kegs of powder. Men and boys employed: inside, 80; outside, 24; boys picking slate, 24. Number of days worked in all the slopes during the year, 279½. These mines have been very fortunate; not an accident of any consequence occurred during the year, which speaks well for its management.

Machinery consists of 3 hoisting engines of 150-horse power, 1 breaker engine of 30-horse power, 3 pumping engines of 160-horse power; total horse power, 240; total engines, 7, and are all in good condition.

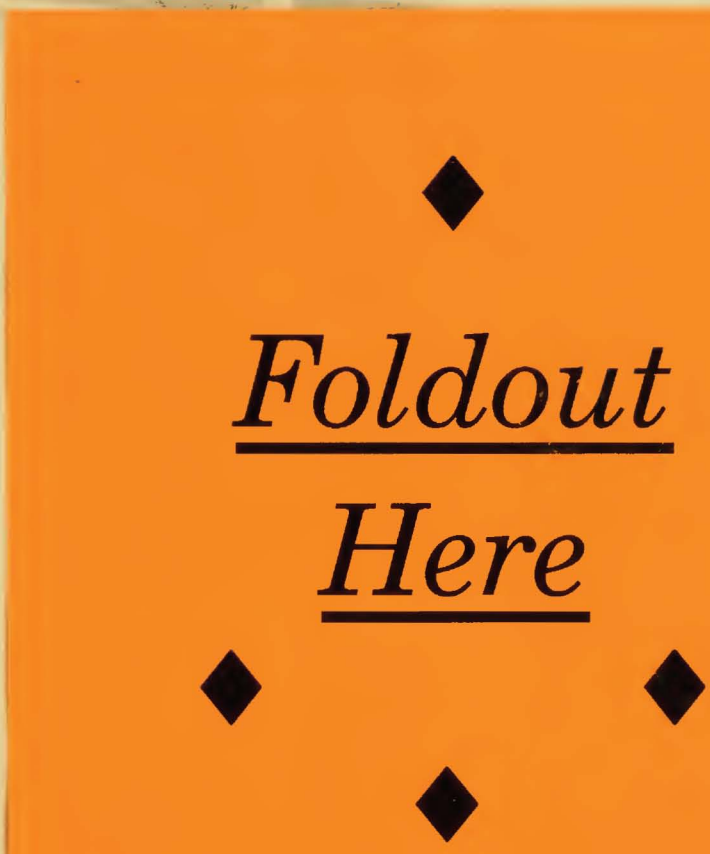
John Wear, superintendent; Frank Wear, mine boss; Michael North, outside foreman.

Jeanesville and Spring Mountain Collieries.

These collieries are situated 2 miles south of Hazleton, on the estate of the Spring Mountain Coal Company, and operated by J. C. Haydon & Co.

Slope No. 1.—Sunk on the south dip of the Mammoth or E vein, a distance of 601 feet, at an angle of about 22°, elevation above mean tide at top of slope —— feet, at bottom —— feet, perpendicular depth of slope 230 feet. The west gangway has been driven 3,600 feet, and the east gangway 3,200 feet, with several breasts. A tunnel 150 feet long has been driven, cutting the Wharton or D vein at an angle of about 20° on the north dip. The Mammoth vein is about 30 feet, and the Wharton about 9 feet thick, and the coal is of very good quality.

Slope No. 4.—Sunk on the south dip of the Mammoth or E vein, at an angle of about 31°, and is 566 feet long, perpendicular depth 283 feet, elevation above tide at top of slope —— feet, at bottom —— feet. The east gangway has been driven 1,407 feet, and ended in a fault, with 9 breasts working. They are driving an air-hole in this gangway which will increase the ventilation considerable. The east gangway, on the south dip, has been driven 1,310 feet, with 18 breasts working; and the east gangway on the north dip 1,100 feet, with 2 breasts opening. This gangway has about 200 feet to go to connect with the old No 4 slope workings. A tunnel has been started on the east side of the slope to cut the Wharton or D vein on the north dip, and another tunnel is contemplated of being driven on the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west side to cut the Wharton on the south dip. The ventilation is very commendable in this slope.

Slope No. 5.—Sunk on the south dip of the Mammoth or E vein, a distance of 662 feet, vertical 229 feet, and at the top of the slope is —— feet, above mean-tide at the bottom —— feet. The bottom lift has been worked out. The work done in the big vein consists of robbing pillars, &c. A tunnel about 150 feet long has been driven at the bottom of the slope, cutting the Wharton or D vein on the north dip, at an angle of about 20°, in 9 feet of very good coal. The east gangway in the Wharton vein has been driven around the point of the basin into the south dip. The west gangway has been driven for a considerable distance, and is now being worked around the circumference of the basin. The breast workings connect with the drift slope gangway. The working of this vein is considered safe, but there is a slate of about 4 to 6 inches, called the *clod*, next to the top rock, which, unless it is taken down as the miner advances, is very apt to fall without giving any warning, but if the miner takes it down as he works ahead there is not the least apprehension of danger. The air is rather scarce in this vein, and has always been so by what I have been informed.

Drift or tunnel No. 5 is 300 feet long, cutting the Wharton on the north dip, at an angle of about 18¼°. The water-level working has been worked out, and an inside slope sunk on the east side of the tunnel, a distance of 303 feet, for the purpose of shortening the range from the west Wharton gangway in slope No. 5. The west gangway has been driven 1,042 feet, with 10 breasts working; and the east gangway 1,328 feet, with 11 breasts working. This slope connects by an air-hole with No. 5 slope, and No. 5 connects by an air-hole with slope No. 1, on the south dip of the Wharton or D vein.

They have three breakers on the property, with a capacity of 1,900 tons of coal per day, 189 mine cars, and 20,410 feet of T iron track in and about the mines, and 67 mules. They employ 4 bosses, 120 miners, 135 laborers, 27 company men, 36 drivers, 2 door boys in the mines; 4 bosses, 15 mechanics, 59 breaker men, 6 drivers, 112 slate pickers, in all 520 men and boys. They shipped 174,816 tons of coal during 1875, and used 2,719 kegs of powder, and worked 133 days.

Ventilation is produced by the steam exhaust from the pumps. Slope No. 4 is very satisfactory ventilated. There is no fault to find with the air in any of the slopes in the big vein workings, but in the Wharton it is very defective in some parts. The inlet being the drift, thence it circulates through down to No. 5, through the tunnel to the outlet. I have requested the superintendent to cause a greater quantity of air to circulate through the Wharton vein to carry off the powder smoke which remains in clouds in the face of the breast, causing it to be very injurious to the health of the men.

Machinery.—They use 5 hoisting engines of 275-horse power, 4 breaker engines of 90-horse power, 4 pumping engines of 460-horse power, total number of engines 13, aggregate horse power 825, two plunger and three steam pumps, all in good condition.

Stewart Macfarlam, superintendent.

Beaver Brook Collieries.

Located at Frenchtown, about 3 miles south of Hazleton, on the estate of the French coal company, and operated by the Beaver Brook coal company, and consists of 4 slopes and 2 breakers.

Slope, No. 1.—Sunk on the south dip of the Mammoth or E vein a distance of 270 feet, at an angle of about 41¾°; perpendicular depth, 180 feet.

The top of the slope is —— feet above mean tide, and at the bottom of the same —— feet, and is sunk to the basin. The west gangway has been driven 1,900 feet, with 43 breasts worked out, and the east gangway 390 feet, with 8 breasts worked out. The bottom lift is about being abandoned. A counter gangway is now being driven over the slope to work the crop coal.

SLOPE, No. 2.—Sunk on the south dip of the Wharton or D vein a distance of 780 feet, to the boundary line of the New York and Lehigh Coal Company's property, at an angle of about $9\frac{3}{4}°$; vertical, 130 feet; elevation above mean tide at top of slope, —— feet; at the bottom of the same, —— feet. The west bottom lift gangways consists of robbing pillars on the east side. The east counter gangway has been driven 1,000 feet, with 17 breasts opened, and the west counter gangway 3,400 feet, with 68 breasts opened, and the most of them worked out. The vein is about 9 feet thick, and the coal of very good quality. Also an excellent roof. This slope is worked by a single track, owing to the counter gangways.

Ventilation is produced by a furnace on the west gangway, and by natural causes on the east. On my first visit to these mines the air was inadequate for the support of the men. Since a very good furnace has been built, causing sufficient ventilation; 14,770 cubic feet per minute at face of gangway, per report for November.

SLOPE, No. 3.—Sunk on the south dip of the Wharton or D vein a distance of 154 feet, at an angle of about 30°; perpendicular depth, 75 feet; elevation above mid-tide at top of slope, —— feet; and at the bottom of the same, —— feet. The east gangway has been driven 450 feet, with 10 breasts opened. The west gangway has been worked 150 feet, with 3 breasts worked out. The present workings are all on the east side, and the gangway has not far to go to the boundary line. The ventilation tolerable; 5,700 cubic feet in face of gangway, per air report for November; men employed, 7.

SLOPE, No. 4.—Sunk on the south dip of the Wharton or D vein a distance of 660 feet to basin, at an angle of about $34\frac{1}{2}°$; perpendicular depth, 370 feet; elevation above tide at top of slope, —— feet; at the bottom of the same, —— feet. This is a single track slope, adapted for the counter gangway system. About midway in the slope there is a counter gangway driven west for a considerale distance through rock, as the vein pinched out, but is now in good coal about 9 feet thick. The east gangway in the bottom lift consists of 9 breasts, and has been worked to the boundary line, and is 460 feet long. There are 2 gangways on the west side of the slope, 1 on each dip. The gangway on the south dip is 420 feet long, and contains 8 breasts working. The roof is good and the coal of superior quality. The mode of working is considered safe.

Ventilation is produced by the exhaust steam from the pump, the manway being the inlet and the slope the outlet. This slope is partitioned off by boards, affording an outlet for the steam. Owing to the leakage of the brattice it makes it very disagreeable on the slope. The air circulates down the man-way; then to the face of the south dip, west gangway; thence through the cross-hole to the north dip, west gangway; thence to the east gangway, and returning to the outlet. The air on the west side is very good, but on the east side is not very commendable. I was obliged to stop some of the workings on the east, owing to the defective ventilation. Provision are being made to improve the same on the east side. Measurements taken in face of west gangway, 12,600 cubic feet per minute; men employed, 62.

Machinery.—They use 4 hoisting engines of 220-horse power, 2 breaker engines of 60-horse power. 4 pumping engines of 160-horse power, in all 10 engines of 440-horse power, and 18 boilers, examined and reported in good and safe condition; and also 4 which have been ordered out to be repaired.

Remarks.—They employ 2 bosses, 81 miners, 53 laborers, 18 company men, 14 drivers, 5 door boys, in the mines; 2 bosses, 15 mechanics, 31 breaker men, 9 drivers, 45 slate pickers, in all 275 men and boys in and about the mines. They shipped 54,900 tons of coal during the year ending December 31, 1875, and used for mine purposes 9,075 tons. They used 1,693 kegs of powder, and worked 239¼ days, including both breakers. Capacity of the two breakers, 800 tons of coal per day. They had 19,410 feet of T iron track in and about the mines, with 84 mine cars and 31 mules.

E. L. Bullock, superintendent; David Reese, mine boss; Thomas Davis, outside foreman.

Yorktown Collieries.

Situated three miles south of Hazleton, on the estate of the New York and Lehigh coal company, and operated by A. L. Mumper & Co.

Slopes, Nos. 1, 2 and 4, as previously reported, are all abandoned, and are now drowned and the coal worked out.

Slope, No. 5.—Sunk on the south dip of the Mammoth or E vein a distance of 390 feet to the basin, at an angle of about 45°; perpendicular depth, 276 feet. The basin dips from east to west. A new slope has been partly driven west of the present slope in order to sink another lift below the No. 5 gangway. The east gangway has been driven to the boundary line, with 20 places worked; consists chiefly in robbing pillars. The west gangway is driven quite a distance, and is about surmounting the anticlinal into the north dip of the same vein. A tunnel has been driven on the west side of the slope, cutting the Wharton or D vein on the south dip, and gangways turned off east and west of the tunnel. The east gangway has been driven 1,140 feet, with 35 breasts opened. The west gangway has been driven 1,320 feet, with 37 breasts opened. The vein is about 9 feet thick; coal very good quality. There are 105 mine cars, with a breaker capacity of 400 tons per day. A new breaker is now being built to take the place of the old one now abandoned. Men employed inside: boss, 1; miners, 61; laborers, 36; company men, 37; drivers, 16; outside: boss, 1; mechanics, 14; head and plate men, 16; all company men about the breaker, 16; drivers, 2; slate pickers, 60; total number of men and boys employed, 260; mules, 12; coal mined, 70,956 tons; powder used, 1,080 kegs; number of days worked, 139¼.

Ventilation is produced by means of exhaust steam from the Thatcher pump, the manway being the inlet and the pumpway the outlet. The air in the Big vein is favorable, but in the Wharton it has been very unsatisfactory. I have given orders to have the same improved forthwith. The following is the report of air measurements for month of December: Intake, 11,000 cubic feet per minute; outlet, 12,000 cubic feet per minute; at face of gangway, 7,055 cubic feet; men employed, 130.

Machinery.—They use 1 hoisting engine of 60-horse power, 1 breaker engine of 30-horse power, 1 pumping engine of 100-horse power; total number of engines, 3, of 190-horse power, and 26 steam boilers, reported in safe condition, and are examined every six months according to law.

Remarks.—They have a second outlet; they have furnished the inspector with a map of their workings; they have reported all serious accidents to persons, and the air is measured every week and reported monthly; they

have no brake on the hoisting drum; no speaking tube; the mining boss is a practical and competent man; they have no boys under 12 years of age working inside; no persons are allowed to ride on the slope.

Slope, No. 6.—Sunk on the Wharton or D vein a distance of 750 feet, at an angle of about 20°; perpendicular depth of slope, 255 feet. The vein is about 9 feet thick. The east gangway has been driven 531 feet, at which point the vein pinches out and will probably be discontinued. The west gangway has been driven 240 feet, with 12 breasts opened in both gangways. This is a new slope and likely to prove a good mine. The coal from this slope will be prepared at the new breaker now building. Men employed inside: boss, 1; miners, 30; all company men employed, 40; drivers, 3; outside: boss, 1; mechanics, 10; head and plate men, 4; all company men about the breaker, 22; drivers, 5; slate pickers, 20; total men and boys employed, 136.

Ventilation.—This is produced by the steam from the exhaust. The slope is the intake and the pumpway the outlet. They have not yet got their traveling road out, but will as soon as they can get room or a suitable place to drive one. The air is tolerable.

Machinery consists of 1 hoisting engine of 50-horse power, 1 breaker engine of 30-horse power, 1 pumping engine of 125-horse power; total number of engines, 3, of 205-horse power; they have 1 Thatcher pump; coal mined, 13,681 tons, and shipped 11,181$\frac{13}{20}$ tons during year ending December 31, 1875; they used 540 kegs of powder and worked 78 days.

Thomas John, general superintendent; Evan Reese, mine boss; Evan W. Thomas, outside foreman.

South Spring Mountain Collieries, Tresckow, Carbon County.

Situated 3½ miles south of Hazleton, on the estate of the Lehigh and Wilkesbarre Coal Company, and operated by the said company.

This colliery consists of 3 slopes and 1 breaker, and are —— feet above tide.

Slope No. 2.—Sunk on the south dip of the Wharton or D vein, and is 411 feet long, at an angle of about 40°, vertical 272 feet. The east gangway is driven 2,600 feet, and the west gangway 3,500 feet, with 15 breasts opened. The roof is good and the coal of superior quality.

Slope No. 5.—Sunk on the south dip of the Mammoth or E vein, at an angle of about 43½°, and is 277 feet long, vertical 155 feet, a tunnel has been driven cutting the Wharton on the north dip and connected by a manway with No. 2 slope. A dam has been built in this tunnel, preparatory to abandoning the slope to prevent the water from going down into No. 2. I have received notice from E. B. Leisenring, superintendent, of their intention of abandoning this slope, as the coal has been worked out.

Slope No. 6.—Sunk on the north dip of the Wharton or D vein, at an angle of about 20$\frac{3}{4}$°, and is 600 feet long, vertical 224 feet, thickness about 8½ feet; the coal is well adapted for steam purposes. The top of the slope is —— feet above mid tide, at bottom —— feet. The works are all on the east side of the slope. The west gangway has been driven 450 feet, and worked out. There are several gangways on the east side, gangway No. 2 has been driven 1,800 feet, gangway No. 4 2,400 feet, gangway No. 6 900 feet, and the basin gangway 1,200 feet, with numerous chambers. They employ 1 boss, 90 miners, 61 laborers, 31 company men, 17 drivers, 3 door boys, in all the mines; 1 boss, 19 mechanics, 8 plate men, 51 breaker men, 5 drivers, and 55 slate pickers, in all 342 men and boys, and 42 mules. They shipped 63,340 tons of coal during the year ending December 31, 1875, and used 1,785 kegs of powder, and worked 126 days.

Ventilation.—Slope No. 2 is ventilated by exhaust steam from the pump, the traveling-way being the intake and the pump-way the outlet. Slope No. 6 is ventilated by a furnace built in the outlet, the air in this work has been very weak, but an air-hole is now being driven through about 50 feet of rock to the surface. When this hole is through it will undoubtedly be a blessing to the miner and a credit to the superintendent. The air has been measured and reported for month of December, as follows: 10,500 cubic feet per minute in the face of the four gangways. Men employed, 141; mules, 13.

Machinery.—They use 3 hoisting engines of 180-horse power, 2 breaker engines of 60-horse power, 1 pumping engine of 90-horse power, total number of engines, 6; aggregate horse power, 330. They have 20 boilers in use—cleaned, examined and reported safe and in good condition. They have steam gauges on their boilers to indicate the pressure of steam in the boiler, and safety-valve on each set of boilers. They have no brake on their hoisting drum, nor speaking tubes. They do not permit persons to ride on cars in the slope. There is a good man-way for men to travel to and from their work. These works have improved wonderfully since the present firm have taken possession, and are still improving. They have a breaker capacity of 600 tons of coal per day.

E. B. Leisenring, superintendent; Owen R. Evans, mine boss; George Spencer, outside foreman.

Room Run Mines, Nesquehoning, Carbon County.

Situated five miles west of Mauch Chunk, on the estate of the L. C. and N. Co., and operated by the Lehigh and Wilkesbarre coal company.

Shaft. No. 1.—Depth, 310 feet; elevation above tide at top of shaft, 1,075 feet; at bottom, 765 feet. The west gangway has been driven 2,811 feet, and has been discontinued. The work done at present is principally drawing out the loose coal. This part of the mine produces great quantity of carburetted hydrogen gas or fire-damp. There are about eight men working by the light of the safety-lamps in this gangway. They are strictly forbidden to use naked lights in this part of the workings. The east gangway has been driven 3,200 feet, and will connect with the old workings of Hackleburney. A tunnel has been driven a distance of 339 feet, intended to cut the vertical vein, but proved to be about 40 feet too low to cut the basin, so a balance plane, of 100 feet in length, was driven through the rock, at an angle of about 25°, cutting the vein in about 18 feet of good coal. The east gangway has been driven 2,700 feet, and continues to be worked in good coal.

Ventilation.—The ventilating of the 50-feet is produced by a 12 feet diameter fan, the shaft being the intake; thence through the gangway to the face of the working and back to the fan through the return air-way. Measurements of air at the face of the 50-feet gangway, taken October 14 by the inspector, 6,480 cubic feet; men employed, 8; outside barometer, 28.40; inside barometer at face of gangway, 28.05; difference, .35; thermometer, —. The ventilation in the vertical is tolerable, produced by a furnace erected in the old or No. 1 tunnel. I have requested the superintendent to cause a greater quantity of air to circulate through this part of the mine.

Tunnel, No. 2.—Elevation above tide at mouth of tunnel, 1,049 feet; length of tunnel to Red Ash vein, 1,420 feet, cutting the Mammoth or E and the Red Ash veins on the north dip. The west gangway has been driven 1,466 feet. At the heading the vein is entirely pinched out. They have followed the smooth of the top rock for about 300 feet. At this point on the surface the vein proves good, which is very encouraging for the pros-

pecting. The east gangway has been driven 722 feet, connecting with the old breasts worked up from the old working of tunnel, No. 1, which has been abandoned for many years. There are a few breasts being opened on the turn-out and about 4 drawing out on the east side of the tunnel. The mode of working is considered safe.

Ventilation.—The circulation of air is produced by natural causes and meets the requirements, as there are but few men working in this tunnel.

SLOPE, No. 3.—Sunk on the south dip of the Red Ash vein. Elevation above tide at top of slope, 1,151 feet; at bottom, 878 feet; vertical, 273 feet. The west Red Ash gangway has been driven 3,500 feet and ended in a fault. A tunnel 500 feet in length has been driven, cutting the Mammoth or E vein on the south dip, at an angle of about 43°. The west gangway has been driven a considerable distance, and connects by an air-hole with the east gangway of tunnel, No. 6, Summit Hill. The difference of elevation between the two gangways is about 154 feet vertical, or 240 feet on the pitch. A large pillar has been reserved for the purpose of sinking a slope below the present level. Thickness of vein about 50 feet.

Ventilation is produced by a 15 feet diameter fan. The intake is located in the gangway, and the air circulates down the air-hole from No. 6 gangway; thence to the heading and back to the fan; 6,300 cubic feet per minute at face of gangway; at outlet, 6,500 cubic feet per minute; men employed, 21.

SLOPE, No. 4.—Sunk on the south dip of the Mammoth or E vein. This slope is sunk from the top of the anticlinal, and on the reverse dip of that which the shaft is sunk on. The vein is about 30 feet thick, and both gangways are now in a fault. The breasts are opened as follows: Shute, 21 feet long; width of breast, 30 feet; width of pillar, 21 feet.

Ventilation.—This is produced by atmospheric action; 600 cubic feet per minute at face of gangway; 800 cubic feet at outlet; men employed, 12; mules, 2.

Machinery.—They use in all the mines 4 hoisting engines of 235-horse power, 1 breaker engine of 45-horse power, 5 pumping engines of 727-horse power, 2 fan engines of 23-horse power; total number of engines, 12; total horse power, 1,030. The boilers have been cleaned and examined and reported in safe condition. They have an adequate brake attached to their hoisting drum; they have had speaking tubes but are no good; I have ordered one to be put in at the shaft to re-place the old one; they have a steam gauge to indicate the pressure of the steam, and safety valve on each set of boilers.

Remarks.—They have furnished a map of their mines; they have a second opening; they have no wash-house for men to wash themselves in; the mining bosses seem to be practical and competent men; there are no boys under 12 years working in the mines; they do not allow men to ride upon loaded cars, on the slopes or shaft; they do not allow more than 10 men to ride at any one time on the slope or shaft; they have reported all serious accidents to the inspector; they mined during the year, 70,731.07 tons of coal, and used 648 kegs of powder, and worked 145¼ days, with a breaker capacity of 500 tons per day and a mine capacity of 1,000 tons per day; shipments to market, 63,499.07 tons of coal; number of mules, 40; men and boys employed, 204.

W. D. Zehner, general superintendent; James Smithan, mine agent; Richard Eustice, foreman.

Summit Hill Collieries.

These collieries are in Carbon county, bounded on the east by Mauch Chunk, and on the west by Tamaqua, and on the estate of the Lehigh Coal and Navigation Company, and operated by the Lehigh and Wilkesbarre Coal Company.

Slope No. 4.—Sunk on the north dip of the Mammoth or E vein, at an angle of 69°, and is 679 feet long to the bottom of the new lift. The top of the slope is 1,302 feet above mid tide, and at the bottom 665 feet. The east gangway has been driven 800 feet, and the west gangway 650 feet. This mine yields a great quantity of carburetted hydrogen gas or fire-damp. The mode of working is considered safe. There are large air-ways driven parallel with the main gangway, about 30 feet area, and timbered equally to any ordinary gangway. By opening breasts they drive a shute up the pitch 30 feet long, where a battery is erected to prevent the coal from rushing too rapidly into the shute, and also a means for the laborer to clean his coal, that is, to separate the slate, &c., from the coal. Thence the miner widens his breast to about 30 feet and commences to work up the pitch, as he advances on the face of his breast he builds a man-way on the sides of the pillars by placing props, 6 feet long, 8 in. diameter, about 4 feet apart, against the pillar, those props are then planked, which affords the means of safety and ventilation to the miner. Pillars 30 feet wide are reserved on each side of the breast for the support of the superincumbent strata. The east gangway has been cut off by a slope sunk in the "crack" vein about 5,500 feet east of slope No. 4, and the coal of the old lift hereafter will be taken via No. 7. They employ 1 boss, 57 miners, 40 laborers, 23 company men, 20 drivers, 2 door boys, in the mines; 1 boss, 8 mechanics, 13 head and plate men, 36 breaker men, 6 drivers and 70 slate pickers outside, in all 277 men and boys. They have shipped 53,749 tons of coal during the year, and used 480 kegs of powder.

Ventilation is produced by a 15 feet diameter fan, and will be superceded by 2 fans, each of 16 feet in diameter. The ventilation is tolerable at present, but not adequate to meet the requirements of the mines when they become more extensively worked.

Machinery.—They have a steam brake attached to the hoisting drum, and flanges thereon. They did have a speaking tube, but it did not work satisfactory. They have a locomotive engine hauling the dirt from the slope to the culm banks. They use 2 hoisting engines of 132-horse power, 1 breaker engine of 28-horse power, 2 pumping engines, one of 540-horse power and the other of 200-horse power, total number of engines 6, aggregate horse power 928. They have 17 steam boilers, which have been cleaned, examined and reported in good condition.

Remarks.—They have furnished maps of all their mines, and reported all serious accidents to persons and the measurements of air according to law. The mines operated by the Lehigh and Wilkesbarre Coal Company are well managed and worthy of commendation.

Geo. Holvey, general inside foreman; David Lawson, inside foreman; Samuel Nevins, outside foreman.

Tunnel, No. 5, and Slope, No. 7.

Situated on the south side of Panther Creek valley, on the estate of the Lehigh coal and navigation company, and operated by the Lehigh and Wilkesbarre coal company.

Tunnel, No. 5, is 420 feet long, cutting the Red Ash vein on the north dip; thence 320 feet, cutting the Mammoth on the same dip at an angle of

about 69°. This part of the mine is now abandoned, except the west red ash gangway, which continues to be worked. The east red ash gangway is driven 5,500 feet, to where a tunnel 310 feet long cuts the big vein the second time. The east gangway of the tunnel has been driven 6,594 feet and struck the basin.

Slope No. 7.—Height above tide at top of slope, 1,464 feet; at bottom, 913 feet; vertical, 551 feet. This slope is located about 5,500 feet east of slope, No. 4, and sunk on the "Crack" vein, which is about 3 feet thick, the balance being driven through rock 290 feet to a level with tunnel, No. 5, gangway; thence 265 feet to the bottom or level of slope, No. 4, gangway. At the level of No. 5 tunnel and the level of No. 4 slope a tunnel is driven from the "Crack" vein (on which the slope is sunk) to the big vein. The coal is hoisted to the level of No. 5 tunnel; thence is taken by the locomotive engine through tunnel, No. 5, to the breaker, a distance of 1¼ miles. The east gangway in slope, No. 7, (or a continuation of the old east gangway of slope, No. 4) has been driven 1,700 feet east of the slope, with 21 breasts opened. The vein proved very irregular, as they went east, but proves very encouraging at present in the face. The vein thinned out to about 6 feet in some places, and at the face or heading 18 feet; and the coal good. The timbering which has been done in this slope is extraordinary. They employ 1 boss, 84 miners, 28 laborers, 69 company men, 17 drivers, 6 door boys, in the mines; 1 boss, 11 mechanics, 13 plate men, 28 breaker hands, 7 drivers and 44 slate pickers, in all 309 men and boys. They shipped during the year 50,124 tons of coal, and used 720 kegs of powder.

Ventilation.—This is produced by 2 fans, each 16 feet in diameter, and connected on the same shaft. The air is conducted systematically to the face of the works. The ventilation has been measured and reported 35,000 cubic feet per minute; men employed, 184.

Machinery.—There is 1 locomotive engine hauling the coal from inside to the breaker. They use 3 hoisting engines of 60-horse power, 1 breaker engine of 65-horse power, 1 pumping engine of 51-horse power, 2 fan engines of 20-horse power; total number of engines, 7; aggregate horse power, 196.

Remarks.—The machinery of No 7 slope is on the surface. They are putting a brake and flanges on the drum. They have had their boilers cleaned and examined and reported according to law. John Davis, Esq., is master mechanic, and has charge of all the machinery about the mines. He is a gentleman of ability and lives up to the requirements of the law.

Geo. Holvey, general inside foreman; William Evans, mine boss; William Ratcliff, outside foreman.

Tunnel, No. 6, and Slope, No. 3.

This tunnel is located on the north side of Panther creek, on the estate of the Lehigh coal and navigation company, and operated by the Lehigh and Wilkesbarre coal company, and is 1,072 feet above mean tide at tunnel's mouth.

This tunnel is 600 feet long, cutting the Red Ash vein; thence 350 feet, cutting the Mammoth or E vein on the south dip, at an angle of 43°. At the head of this tunnel is where the fire originated August 12, 1871, and where the slope is sunk which is now abandoned. The company finding the coal becoming scarce in the water level workings deemed it expedient to make some further developments by re-opening the old slope. But finding the vein on fire the project had to be abandoned. The red ash gangway is 3,300 feet long to Shield's tunnel, which is 350 feet, cutting the

Mammoth or E vein the second time on the south dip at angle of 43°. The east gangway has been driven 6,480 feet to the boundary line. This gangway connects by an air hole with the east gangway of Nesquehoning.

Slope, No. 3, which is 240 feet (on a pitch of about 43°) below No. 6 gangway. A locomotive hauls the coal from inside, a distance of about $1\frac{3}{4}$ miles to the breaker. They employ 1 boss, 27 miners, 24 laborers, 29 company men, 7 drivers, 3 door boys, in the mines; 1 boss, 7 mechanics, 57 platform breaker men, 6 drivers and 43 slate pickers, in all 205 men and boys and 33 mules. They shipped during the year 55,989 tons of coal and used 540 kegs of mining powder.

Ventilation is produced by a 16-feet diameter fan, located at the tunnel mouth. The inlet is situated about midway in the gangway, where a split is effected, causing one current to ventilate the inner workings; thence down the air hole to slope, No. 3, workings of Nesquehoning. The other split ventilates the tunnel and red ash gangway where the mine locomotive travels; 9,500 cubic feet per minute at face of gangway; 20,160 cubic feet per minute at outlet; men employed, 68. They have measured the air and reported according to law.

Machinery.—They use 1 mine locomotive of 40-horse power, 1 hoisting engine of 29-horse power, 1 breaker engine of 16-horse power, 1 fan engine of 12-horse power, in all 3 engines, aggregate horse power 57. They have had their boilers cleaned, examined and reported according to law. The breaker machinery is fenced off for the safety of the employees.

Mountain Tunnel.

This tunnel is located 312 feet above tunnel No. 6, and is 230 feet long to work the crop coal left by the old workings of No. 6. The coal is let down by a balance plane 1,040 feet long to the level of No. 6 tunnel. The gangways are driven with much difficulty in crossing through the old breasts worked up from No. 6. But notwithstanding the disadvantages a great deal of coal has thus been mined, and gave employment to about — men, and the company have been remunerated for their investment.

Ventilation.—This is produced by natural causes. The distance from the gangway to the surface is very short, and air-holes are driven to the surface whenever required, affording ample ventilation. This tunnel is contracted to Josiah Williams and John Davis.

Tunnel No. 9 and Slope No. 8.

Located on the south side of Panther Creek valley, on the estate of the Lehigh Coal and Navigation Company, and operated by the Lehigh and Wilkesbarre Coal Company, and is 980 feet above tide at the tunnel mouth. This tunnel is 2,260 feet long, cutting the Red Ash and the Mammoth or E vein on the north dip, at an angle of about 43°, and about 60 feet thick. The west gangway is driven 3,800 feet, connecting on a level with the east gangway from tunnel No. 2; also connects by branch gangways with the old workings of slope No. 2. These gangways are worked over the anticlinal into the south dip, and working the coal left by the old workings of slope No. 2. The east gangway has been worked out. A balance plane has been driven in this gangway across the pitch 219 feet long, affording means of a counter gangway 3,100 feet long, which enables them to work the coal left by the old breast, worked up from the lower gangway. A new slope has been sunk at the head of the tunnel 267 feet long, at an angle of 32° 40″. The pitch decreases as they descend. The east gangway is driven 700 feet, and the west gangway 800 feet. The air-ways are driven

parallel with the main gangways, and are 27 square feet area. Cross-holes are driven every 60 feet, from the gangway through the pillar into the airway, for ventilation. A locomotive engine hauls the coal from inside to the breaker. They employ 1 boss, 49 miners, 42 laborers, 34 company men, 21 drivers, 5 door boys, in the mines; 1 boss, 11 mechanics, 40 platform and breaker men, 10 drivers and 64 slate pickers, in all 281 men and boys. They shipped 61,327$\frac{17}{20}$ tons of coal during the year ending December 31, 1875, and used 1,080 kegs of mining powder. They use 45 mules.

Ventilation.—The tunnel where the mine locomotive travels is ventilated by a 12-feet diameter fan, located on the knoll above the tunnel. The workings are ventilated by a separate current of air by a fan 16 feet in diameter, situated inside east of the slope. As yet this fan has not given very satisfactory results, as the air retards owing to the column of air being too long after the fan has exhausted the same, and also owing to the exhaust steam from the hoisting engine, which will be remedied by another outlet which is nearly finished. They have measured the air and report according to law.

Machinery.—They have 1 mine locomotive, 2 hoisting engines of 130-horse power, 2 breaker engines of 67-horse power, 1 pumping engine of 29-horse power, 2 fan engines of 54-horse power, in all 7 engines; aggregate horse power, 280. They have 10 boilers for inside use and 5 boilers for breaker purpose, which have been cleaned, examined and reported in good condition. They have steam gauges on their boilers and safety valves.

Remarks.—They are building a large and commodious breaker to take the place of the old one. This breaker is calculated to prepare 1,500 tons of coal per day. It is built with all the modern improvements, and the facilities connected therewith will not be excelled in the anthracite region. The mode of working considered safe.

W. D. Zehner, superintendent; F. E. Brackett, assistant superintendent; George Holvey, general inside foreman; Chas. Powell, inside foreman; C. T. M'Hugh, outside foreman; Nathan Drumhiller, master mechanic; John Davis, M. mining machinery; John Rutter, civil engineer.

TABLE No. 1.—*List of accidents proving fatal in the South District of Luzerne and Carbon counties during year ending December 31, 1875.*

Number.	Date.	Location.	Slope No.	Names of Persons Killed.	Married or single.	Age.	Number of children.	Cause of Accidents and Remarks.
1	June 28	Stockton	5	Wm. H. Kernow	M	34	3	Suffocated by carbonic acid gas by working at the Stockton fire. These three men, accompanied by the foreman, went to work to knock out some stoppings in the air-way; by doing so the air reversed, causing the above.
2	" 28	do	5	James Webber	M	32	....	
3	" 28	do	5	John Gurtul	M	29	....	
4		do	....	Thomas James	S	19	....	Killed by falling down pumpway steps: was down oiling the pump; by coming up he was overcome by carbonic acid gas from fire.
5	July 30	Jeansville	5	Hugh O. Brien	S	25	.....	Killed by a fall of coal.
6	Sept. 1	Yorktown	6	Condy M'Hugh	M	47	1	Killed by a fall of the coal by sinking slope.
7	" 1	do	6	Patrick Welch	S	24	.....	Killed by a fall of the coal by sinking slope.
8	" 14	Beaver Meadow	3	Thomas Bermingham	S	30	.....	Killed by a fall of roof in his breast.
9	" 23	Jeansville	1	George Dando	M	29	3	Killed by a fall of coal.
10	" 28	Beaver Meadow	4	John M'Hugh	M	47	1	Killed by the hoisting gearing breaking: the car struck him at the bottom of slope.
11	" 30	Eckley	2	Daniel Gallagher	S	38	.....	Killed by a fall of coal off the pillar; died in four days.
12	Oct. 28	do	.....	George Steckroth	S	19	.....	Leg amputated: run over by railroad car; died November 16.
13	Nov. 8	Yorktown	5	Michael Ferry	S	18	.....	Found senseless on the gangway; died from injuries.
14	" 9	Gowen	1	Evan Davis	M	25	2	Killed by a fall of coal in his breast.
15	" 22	Drifton	1	Wm. Hughes	M	32	....	Burned by explosion of fire-damp: died in six days.
16	" 22	do	1	Philip Jones	M	32	5	Burned by an explosion of fire-damp; died December 4.
17	Dec. 1	Beaver Brook	4	David S. Davis	M	32	4	Killed by a fall of coal by starting to open his breast.
18	" 15	Oakdale	1	Michael Conner	M	25	....	Killed by a fall of coal. These two men were waiting for the miner to bring the cartridge while working in the gangway, when a slip of coal fell, causing result.
19	" 15	do	1	John Everley	M	21	1	
20	" 20	Harleigh	3	Charles O. Donnell	S	24	.....	Killed by a fall of coal while working in his breast.
21	" 2	Woodside	1	William Richards	Boy	12	.....	Killed by the breaker rollers; slipped his foot on the shute and slid into the rollers. The rollers were covered or boxed, but it is supposed a piece of plank in front of the box broke by him sliding against it, causing room for him to go through, resulting in the above.

RECAPITULATION.

		Percentage of lives lost.
By explosion of fire-damp	2	9.5
By falls of coal	8	38.
By falls of slate	2	9.5
By falls of roof	1	4.8
By suffocation in Stockton mine fire	4	19.
By breaker machinery	1	4 8
By transportation cars	1	4.8
By hoisting machinery breaking	1	4 8
Found senseless in gangway	1	4 8
Total fatal casualties	21	

Widows, 12; orphans, 30.

TABLE No. 2.—*List of accidents not proving fatal in the South District of Luzerne and Carbon counties during the year ending December 31, 1875.*

Number.	Date.	Name of Colliery.	Slope, No. of.	Tunnel, No. of.	Name of Person Injured.	Nature and Causes of Accidents.
1	June 22.	Beaver Meadow	....	....	Arthur O'Donnell	Leg broken by a fall of clay.
2	July 21.	Sugar Loaf	....	....	Patrick Daugherty	Fractured head by a piece of coal.
3	21.	Eckley	2	....	Owen Ellis	Fractured head by a piece of coal.
4	26.	Buck Mountain	6	....	William Spencer	Arm broken; fell down slope.
5	27.	Nesquehoning	3	....	Thomas Griffiths	Leg broken by attempting to jump on cars.
6	27.	Humboldt	3	....	Andw. M'Gonnegol	Cheek bone crushed by a fall of coal.
7	30.	Jeanesville	5	....	William Hemer	Thigh broken by a fall of coal.
8	Aug. 5.	Milnesville	7	....	Edward Lewis	Arm broken by falling down breaker steps.
9	5.	do	7	....	Thomas Duffy	Hurt on the body; jammed between the cars.
10	5.	Laurel Hill	5	....	Fred. Noah	Injured by a piece of coal.
11	6.	Nesquehoning	Sh. 1	....	Philip M'Donnell	Slightly burned by fire-damp.
12	6.	do	1	....	James Butler	Slightly burned by fire-damp.
13	10.	Laurel Hill	Sl. 5	....	James Cruthers	Injured by a fall of coal.
14	11.	do	5	....	John Kroft	Injured; jammed by mine cars.
15	12.	Summit Hill	....	5	James Tierney	Injured on the shoulder.
16	12.	Milnesville	7	....	Moses Wooring	Injured by a lump of coal.
17	14.	Sugar Loaf	....	....	John Patterson	Lost a finger in fan gearing.
18	16.	Jeanesville	4	....	John Welch	Seriously hurt; jammed by cars.
19	17.	Cranberry	1	....	James Irving	Arm broken by a fall of coal.
20	18.	Yorktown	5	....	Patrick M'Gill	Leg broken by lump of coal.
21	19.	do	5	....	David Reese	Head cut by a piece of coal.
22	24.	Eckley	2	....	George Manley	Severely cut in the head by a piece of coal.
23	28.	Milnesville	7	....	Anthony Lyons	Leg dislocated by machinery.
24	Sept. 1.	Yorktown	6	....	John Fred	Injured by a fall of coal.
25	1.	do	6	....	Roger M'Bride	Slightly injured by a fall of coal.
26	4.	Humboldt	3	....	James O'Donnell	Leg broken by a fall of coal.
27	15.	Upper Lehigh	2	....	William Collett	Arm broken by falling.
28	23.	Oak Dale, Jeddo	1	....	John Kennedy	Leg broken by starting coal in shute.
29	24.	Hazleton mines	....	....	John Walters	Slightly injured by a fall of coal.
30	24.	Hollywood	2	....	Philip Hoebner	Slightly injured by car upsetting.
31	24.	do	2	....	Henry Eidame	Slightly injured by car upsetting.
32	24.	Harleigh	....	....	Michael Dugan	Injured by a piece of coal.
33	24.	do	....	....	Frank Mulkerim	Cut on the leg by T rail.
34	24.	Beaver Meadow	....	....	Hugh M'Cafferty	Leg broken by a fall of coal.
35	25.	Hazleton	....	....	Thomas Phillips	Slightly injured by loading the car.
36	25.	do	....	....	James Riehl	Slightly injured by mine car.
37	30.	Beaver Meadow	....	....	James Gagner	Arm broken by fall of coal.
38	Oct. 5.	Upper Lehigh	....	....	Michael Brislin	Leg fractured by a piece of coal.
39	12.	Stockton	3	....	Henry Benney	Leg broken by fall of coal.
40	13.	Upper Lehigh	....	....	Jacob Ashman	Slightly injured by fall under cars.
41	15.	Hazleton	....	....	Joseph Dickson	Slightly burned by fire-damp.
42	15.	Stockton	....	....	Patrick Duffen	Arm broken by rope breaking.
43	20.	Milnesville	....	....	Michael Daugherty	Amputation of a toe.
44	20.	do	....	....	James Lanner	Cut in the head by a piece of coal.
45	25.	Summit Hill	6	....	John Delaney	Arm broken by being jammed by cars.
46	—.	do	9	....	Patrick Boner	Seriously injured by blast.
47	—.	do	4	....	Thomas James	Lost two fingers by making a wedge.
48	27.	South Sugar Loaf	....	....	Joseph Henry	Slightly injured by a fall of coal.
49	27.	do	....	....	Christ Wolfskill	Severe cut in the head by piece of coal.
50	Nov. 4.	Summit Hill	....	....	John M'Glynn	Kicked by a mule.
51	6.	Highland	1	....	Thomas Turner	Arm broken by a fall of coal.
52	9.	Stockton	....	....	Patrick Kennedy	Slightly injured by a fall of coal.
53	9.	do	....	....	John Filbur	Slightly hurt; crushed by car.
54	10.	Crystal Ridge	3	....	Jas. Henry Simons	Slightly hurt by a fall of coal.
55	12.	Jeanesville	1	....	John M'Geady	Leg broken by prying coal.
56	13.	Beaver Meadow	....	....	Henry Garms	Seriously injured in the back by a fall of clay.
57	13.	do	....	....	Philip Rogers	Leg broken by a fall of clay.
58	18.	Summit Hill	....	....	Philip Watkin	Slightly injured by being run over by a car.
59	18.	do	....	....	John Langdon	Kicked by a mule in the abdomen.
60	22.	South Sugar Loaf	....	....	Manus O'Donnell	Leg broken by a fall of coal.
61	22.	Hazleton mines	....	....	Patrick Brislin	Leg broken by a fall of coal.
62	21.	Summit Hill	4	....	Reese Jones	Seriously injured by falling under the car.
63	21.	Highland	1	....	James Wooring	Leg broken by rope breaking.
64	26.	Cranberry	1	....	Werner Obenduster	Injured by a fall of coal.
65	27.	Lattimer	....	....	John Mulhall	Injured by a fall of coal.
66	28.	Upper Lehigh	....	....	William Tickle	Injured by premature blast.
67	28.	do	....	....	Michael Doggett	Injured by a fall of coal.
68	—.	Highland	1	....	Patrick Monigal	Thigh fractured by a fall of coal.
69	28.	Drifton	2	....	Andrew Davis	Injured by the car running away on the slope.
70	Dec. 2.	Yorktown	5	....	John Lloyd	Burned by the explosion of half keg powder.
71	4.	Milnesville	....	....	Enoch Fisher	Arm broken; jammed between mine cars.
72	4.	South Sugar Loaf	....	....	William Floyd	Injured by a fall of coal.
73	4.	Lattimer	....	....	J. Bainbridge	Leg broken by a fall of coal.
74	13.	Stockton	5	....	Chas. James	Leg amputated; jammed by mine cars.
75	21.	Ebervale	....	....	James Boyle	Injured by a fall of coal.
76	21.	Yorktown	....	....	Owen Boyle	Seriously injured by a fall of slate.
77	24.	Ebervale	....	....	Chas. Roerig	Seriously injured by a fall of coal.

RECAPITULATION OF ACCIDENTS AND PERCENTAGE DUE TO CAUSES.

Leg broken by falls of coal and slate	10	12.9	Explosion of fire-damp	3	3.9
Leg broken by mine cars	1	1.3	Injured by mine cars	14	18.2
Leg dislocated by machinery	1	1.3	Fingers cut off by fan-gearing & chopping	2	2.6
Leg broken by falls of clay	1	1.3	Cut in the head by T rail	1	1.3
Leg broken by rope breaking	1	1.3	Amputation of a toe	1	1.3
Leg amputated; jammed by mine cars	1	1.3	Seriously injured by blast	2	2.6
Leg fractured by coal	1	1.3	Kicked by mules	2	2.6
Arm broken by falls of coal and slate	3	3.9	Thigh broken by falls of coal	2	2.6
Arm broken by falling down breaker steps	1	1.3	Explosion of powder	1	1.3
Arm broken by rope breaking	1	1.3	Injured by falls of coal	23	29.9
Arm broken by mine cars	2	2.6	Injured in the back by fall of clay	1	1.3
Arm broken by falling down slope	1	1.3			
Arm broken by falling down in mines	1	1.3		77	100.0

TABLE No. 3.—*Comparison of the number of accidents causing death during five years. The following list will afford a comparison of the frequency of accidents during the different periods since the inspection commenced, omitting the year 1874, there being no report made. From them it will appear that the total loss of life in 1875 was 13 more than in 1870, and 17 less than 1873.*

	1870.	1871.	1872.	1873.	1874.	1875.	Total for 5 years.	Percentage of lives lost for five years.
By explosion of fire-damp	3	.....	1	1	.....	2	7	5.79
By falls of coal	1	12	11	17	.....	8	52	42.98
By falls of slate	.....	.....	.....	4	.....	2	6	4.96
By falls of roof	.....	.....	1	.....	.....	1	2	1.65
By falling	.....	1	1	.....	.....	.....	2	1.65
By mine cars, inside	2	5	3	5	.....	.....	15	12.39
By mine cars, outside, &c.	1	2	.....	.....	.....	.....	3	2.48
By explosion of powder	.....	2	1	.....	.....	.....	3	2.48
By premature blast	.....	.....	2	4	.....	.....	6	4.96
Found dead in mines	1	.....	.....	2	.....	1	4	3.3
By suffocation at Stockton fire	.....	.....	.....	.....	.....	1	4	3.3
By being kicked by a mule	.....	.....	.....	1	.....	.....	1	.83
By suffocation in breaker shutes, &c.	.....	2	1	2	.....	.....	5	4.14
By breaker rollers and machinery	.....	.....	.....	.....	.....	1	1	.83
By transportation cars at breaker	.....	.....	.....	.....	.....	1	1	.83
On slopes	.....	5	1	2	.....	.....	8	6.61
By hoisting machinery breaking	.....	.....	.....	.....	.....	1	1	.83
Total lives lost during each year	8	29	25	38	.....	21	121	.....
Yearly average	.....	.....	.....	.....	.....	.....	24.20	.....

DURING.	No. of tons of coal mined.	No. of lives lost	No. of tons of coal mined to each life lost.	No. of tons of coal shipped to market.	No. of tons of coal shipped to market for each life lost.
1870	.....	8	.....	3,033,311.09	379,167.63
1871	2,500,030.00	29	86,207.30	2,108,659.19	72,654.63
1872	3,500,000.00	25	140,000.00	3,056,523.06	122,260.92
1873	.....	38	.....	.....	.....
1874	.....	.....	.....	.....	.....
1875	2,555,888.00	21	121,709.00	2,723,535.15	110,644.53

Table No. 3 affords a means of analyzing, in comprehensive manner, the causes of, and the liability of accident. The production of coal in my district is increasing with unprecedented rapidity.

TABLE No. I.—*Showing the names of the collieries, their location, landowners, by whom operated, elevations above mean tide at the mouth or surface of the slope and at the bottom of each lift, length of slope, horizontal distance, number of lifts sunk, &c., in the South district.*

Date of first shipments.	Name of Colliery.	Location.	Landowner.	Operator.	Elevation of top of slope.	Datum Level.					
						To First Lift.			To Second Lift.		
						Sloping, feet.	Horizontal, feet.	Elevation, feet.	Sloping, feet.	Horizontal, feet.	Elevation, feet.
.....	Upper Lehigh, No. 1	Upper Lehigh	Nescopeck Coal Company	Upper Lehigh Coal Co	1,807	365	.....	1,626	.....	.....	.....
.....	Upper Lehigh, No. 2	...do	.....do	.....do	1,787	455	.....	1,547	.....	.....	.....
.....	Upper Lehigh, No. 3	...do	Estate of Tench Coxe	.....do	1,818.67	534	.....	1,732.67	.....	.....	.....
.....	Upper Lehigh, No. 4	...do	.....do	.....do	.....	.....	.....	.....	.....	.....	.....
.....	Woodside, No. 1	Woodside	Jeddo Coal Company	Coxe Brothers & Co	1,874	273	227.47	1,718.12	.....	.....	.....
....	Cross Creek, No. 1	Drifton	Estate of Tench Coxe	.....do	1,647	382	.....	1,518	755	.....	1,380
.....	Cross Creek, No. 2	...do	.....do	.....do	1,695	451	.....	1,590	.....	.....	.....
.....	Highland, No. 1	Highland	Highland Coal Company	G. B. Markle & Co	1,722	.....	.....	.....	.....	.....	.....
.....	Highland, (undergr'd) No. 2	...do	.....do	.....do	1,490.20	.....	.....	.....	.....	.....	.....
.....	Buck Mountain, No. 2	Buck Mountain	Buck Mountain Coal Co	Buck Mountain Coal Co	.....	.....	.....	.....	.....	.....	.....
.....	Buck Mountain, No. 4	...do	.....do	.....do	.....	.....	.....	.....	.....	.....	.....
.....	Buck Mountain, No. 5	...do	.....do	.....do	.....	.....	.....	.....	.....	.....	.....
.....	Buck Mountain, No. 6	...do	.....do	.....do	.....	.....	.....	.....	.....	.....	.....
.....	Council Ridge, No. 2	Eckley	Estate of Tench Coxe	J. Leisenring & Co	1,698.67	.....	.....	.....	486	.....	.....
.....	Council Ridge, No. 3	...do	.....do	.....do	1,671	.....	.....	.....	.....	.....	.....
.....	Council Ridge, No. 4	...do	.....do	.....do	1,632	327	.....	.....	.....	.....	.....
.....	Council Ridge, No. 5	...do	.....do	.....do	1,659	.....	.....	.....	.....	.....	.....
.....	Jeddo, (abandoned,) No. 1	Jeddo	Union Improvement Co	G. B. Markle & Co	1,538.17	280	258.16	1,384.67	.....	.....	.....
.....	Jeddo, (abandoned,) No. 2	...do	.....do	.....do	.....	.....	.....	.....	.....	.....	.....
.....	Jeddo, (abandoned,) No. 3	...do	.....do	.....do	1,570	.....	.....	.....	627.50	542.56	1,239.45
.....	Oakdale, No. 1	...do	.....do	.....do	1,515	.....	.....	.....	.....	.....	.....
.....	Oakdale, No. 2	...do	.....do	.....do	1,577	778.50	763.28	1,455	.....	.....	.....
.....	Ebervale, No. 1	Ebervale	.....do	Ebervale Coal Company	1,521.28	333.5	285.87	1,310	679	590.30	1,176.29
.....	Ebervale, No. 2	...do	.....do	.....do	.....	.....	.....	.....	.....	.....	.....
.....	Ebervale, No. 3	...do	.....do	.....do	1,521.69	370	345	1,499	722	698	1,397
.....	Harleigh, No. 1	Harleigh	Big Black Creek Imp't Co	Harleigh Coal Company	1,518.57	461	431.58	1,361.26	.....	.....	.....
.....	Harleigh, No. 2	...do	.....do	.....do	1,523.21	.....	.....	1,379	389.50	339.35	1,333
.....	Harleigh, No. 3	...do	.....do	.....do	1,521.90	.....	.....	.....	708.50	208	1,224
.....	Latimer, No. 1	Latimer	Black Creek Imp't Co	Pardee Brothers & Co	1,591	.....	.....	.....	489	361	1,278.34
.....	Latimer, No. 2	...do	.....do	.....do	1,589.60	432	263.17	1,279.09	.....	.....	.....
.....	Milnesville, (aban'd.) No. 1	Milnesville	Porter's Estate	Stout Coal Company	1,583	145.50	136.26	1,339.16	.....	.....	.....
.....	Milnesville, (aban'd.) No. 2	...do	.....do	.....do	.....	.....	.....	.....	.....	.....	.....
.....	Milnesville, (aban'd.) No. 3	...do	.....do	.....do	.....	.....	.....	.....	.....	.....	.....
.....	Milnesville, (aban'd.) No. 4	...do	.....do	.....do	1,581	.....	.....	.....	.....	.....	.....
.....	Milnesville, (aban'd.) No. 5	...do	.....do	.....do	1,579.69	275.10	251.67	1,473.15	.....	.....	.....
.....	Milnesville, (work'g.) No. 6	...do	.....do	.....do	1,587.11	293.87	266.16	1,470.40	.....	.....	.....
.....	Milnesville, (work'g.) No. 7	...do	.....do	.....do	1,576.32	.....	.....	.....	441	321	1,291
.....	Hollywood, No. 1	Hollywood	Big Black Creek Imp't Co	C. Pardee & Co	1,567	242	203.39	1,427.42	.....	.....	.....
.....	Hollywood, No. 2	...do	.....do	.....do	1,562	289	181.14	1,343.55	.....	.....	.....
.....	East Sugar Loaf, No. 1	Stockton	Smith, Roberts & Packer and	Linderman, Skeer & Co	1,584.07	.....	.....	.....	.....	.....	.....
.....	East Sugar Loaf, No. 2	...do	Estate of Tench Coxe	.....do	1,586.82	.....	.....	.....	.....	.....	.....
.....	East Sugar Loaf, No. 3	...do	.....do	.....do	1,578.15	.....	.....	.....	.....	.....	.....

.....	East Sugar Loaf, No. 1	....do	....do	....do	....do	....do	1,515.15	161	.....	1,280	.....	.....	.....	.....
.....	East Sugar Loaf, No. 5	....do	....do	....do	....do	....do	1,519	642	.....	1,190	.....	.....	.....	.....
.....	East Sugar Loaf, No. 6	....do	....do	....do	....do	....do	1,551.91	.....	.....	.....	360	.....	1,293	.....
.....	East Sugar Loaf, No. 7	....do	....do	....do	....do	....do	.....	.....	.....	.....	.....	.....	.....	.....
.....	Diamond, No. 1	Sugar Loaf, Hazle twp	Diamond Coal Company	A. Pardee & Co.	.....	.....	1,618.78	247	208.97	1,507.01	528	460.90	1,361.48	.....
.....	Diamond, No. 2	....do	....do	....do	....do	....do	1,587.65	140	120.63	1,516	416	360.86	1,380	.....
.....	Diamond, No. 3	....do	....do	....do	....do	....do	1,570.81	667.50	537.85	1,189.19	.....	.....	.....	.....
.....	Hazleton, No. 1	Hazleton	Lehigh Valley Railroad Co.	....do	....do	....do	1,673	262	218.30	1,576	525	301.90	1,552.51	.....
.....	Hazleton, No. 2	....do	....do	....do	....do	....do	1,631.36	291	278.97	1,550	551	526	1,469.12	.....
.....	Hazleton, No. 3	....do	....do	....do	....do	....do	1,639.73	171.50	152.36	1,562	411.50	363.15	1,446.98	.....
.....	Laurel Hill, No. 4	....do	....do	....do	....do	....do	1,593.08	86	77.95	1,557	303	276.433	1,469.72	.....
.....	Laurel Hill, No. 5	....do	....do	....do	....do	....do	1,588	.....	.....	.....	.....	.....	.....	.....
.....	Cranberry, No. 1	Cranberry, Hazle twp	A. S. & E. Roberts	....do	....do	....do	1,621.74	146	133.88	1,563.53	441	422.73	1,492.71	.....
.....	Crystal Ridge, No. 1	....do	....do	....do	....do	....do	1,631	444	419	1,487	.....	.....	.....	.....
.....	Crystal Ridge (aban.) No. 2	....do	....do	....do	....do	....do	1,588	216	198	1,504	.....	.....	.....	.....
.....	Crystal Ridge (aban.) No. 3	....do	....do	....do	....do	....do	1,571	311	253	1,338	.....	.....	.....	.....
.....	Crystal Ridge (work.) No. 4	....do	....do	....do	....do	....do	1,609	237	215	1,499	.....	.....	.....	.....
.....	Mt. Pleasant, No. 1	Mt. Pleasant	C. Koons and others	Pardee & Sons	.....	.....	1,631	.....	.....	.....	.....	.....	.....	.....
.....	Mt. Pleasant, No. 2	....do	....do	....do	....do	....do	1,706	508	443	1,477	.....	.....	.....	.....
.....	Mt. Pleasant, (aban.) No. 3	....do	....do	....do	....do	....do	1,651	.....	.....	.....	.....	.....	.....	.....
.....	Humboldt, No. 1	Humboldt	L. V. Railroad Company	Linderman, Skeer & Co.	.....	.....	1,742	326	296	1,606	421.63	385	1,582	.....
.....	Humboldt, No. 2	....do	....do	....do	....do	....do	.....	341	297	.....	154	402	.....	.....
.....	Humboldt, No. 3	....do	....do	....do	....do	....do	1,738	.....	.....	.....	680	.....	1,479	.....
.....	Gowen drift, No. 1	Gowen	Roberts Run Coal Company	W. B. Mountain Coal Co	.....	240	.....	.....	.....	.....	.....	.....	.....	.....
.....	Gowen slope, No. 1	....do	....do	....do	....do	....do	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Meadow, No. 3	Near Beaver Meadow	Estate of Tench Coxe	E. B. Ely & Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Meadow, No. 4	....do	....do	....do	....do	....do	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Meadow, No. 5	....do	....do	....do	....do	....do	.....	.....	.....	.....	.....	.....	.....	.....
.....	Coleraine, No. 1	Coleraine	W. T. Carter & Co.	W. T. Carter & Co.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Coleraine, No. 2	....do	....do	....do	....do	....do	.....	.....	.....	.....	.....	.....	.....	.....
.....	Coleraine, No. 4	....do	....do	....do	....do	....do	.....	435	.....	.....	.....	.....	.....	.....
.....	Spring Mountain, No. 1	Jeansville	Spring Mountain Coal Co	J. C. Haydon & Co.	.....	.....	.....	.....	.....	.....	601	.....	.....	.....
.....	Spring Mountain, No. 4	....do	....do	....do	....do	....do	.....	566	.....	.....	.....	.....	.....	.....
.....	Spring Mountain, No. 5	....do	....do	....do	....do	....do	.....	.....	.....	.....	602	.....	.....	.....
.....	Beaver Brook, No. 1	Frenchtown	French Coal Company	Beaver Brook Coal Co.	.....	270	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Brook, No. 2	....do	....do	....do	....do	....do	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Brook, No. 3	....do	....do	....do	....do	....do	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Brook, No. 4	....do	....do	....do	....do	....do	.....	.....	.....	.....	.....	.....	.....	.....
.....	Spring Brook, No. 5	Yorktown	New York & L. Coal Co	A. L. Mumper & Co.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Spring Brook, No. 6	....do	....do	....do	....do	....do	.....	.....	.....	.....	.....	.....	.....	.....
.....	South Spring Mount., No. 2	Treskow	L. and Wilkesbarre Coal Co.	L. and W. B. Coal Co.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	South Spring Mount., No. 5	....do	....do	....do	....do	....do	.....	.....	.....	.....	.....	.....	.....	.....
.....	South Spring Mount., No. 6	....do	....do	....do	....do	....do	.....	.....	.....	.....	.....	.....	.....	.....
.....	Rum Run shaft, No. 1	Nesquehoning	L. C. and N. Company	....do	....do	....do	1,075	310	.....	765	.....	.....	.....	.....
.....	Rum Run slope, No. 1	....do	....do	....do	....do	....do	1,042	110	94	980	303	282	816	.....
.....	Rum Run slope, No. 3	....do	....do	....do	....do	....do	1,151	285	217	1,011	488	418	878	.....
.....	Rum Run slope, No. 4	....do	....do	....do	....do	....do	1,100	.....	.....	.....	.....	.....	.....	.....
.....	Summit Hill, No. 2	Summit Hill	....do	....do	....do	....do	1,372	243	221	1,272	476	442	1,198	.....
.....	Summit Hill, No. 4	....do	....do	....do	....do	....do	1,302	180	56	1,152	469	146	918	.....
.....	Summit Hill, No. 7	....do	....do	....do	....do	....do	1,464	329	114	1,170	570	209	930	.....
.....	Summit Hill, No. 9	....do	....do	....do	....do	....do	993	267	226	847	.....	.....	.....	.....
.....	Tunnel, No. 5	....do	....do	....do	....do	....do	1,142	.....	.....	.....	.....	.....	.....	.....
.....	Tunnel, No. 6	....do	....do	....do	....do	....do	1,072	.....	.....	.....	.....	.....	.....	.....
.....	Tunnel, No. 9	....do	....do	....do	....do	....do	980	.....	.....	.....	.....	.....	.....	.....
.....	Summit Hill Town	....do	....do	....do	....do	....do	1,509	.....	.....	.....	.....	.....	.....	.....
.....	Panther Creek	....do	....do	....do	....do	....do	1,009	.....	.....	.....	.....	.....	.....	.....
.....	Summit Hill slope, No. 3	....do	....do	....do	....do	....do	1,076	300	267	869	.....	.....	.....	.....

TABLE No. 4—CONTINUED.

Date of first shipments.	NAME OF COLLIERY.	DATUM LEVEL.																			
		To Third Lift.			To Fourth Lift.			To Fifth Lift.			To Sixth Lift.			To Seventh Lift.			To Eighth Lift.				
		Sloping, feet.	Horizontal, feet.	Elevation, feet.	Sloping, feet.	Horizontal, feet.	Elevation, feet.	Sloping, feet.	Horizontal, feet.	Elevation, feet.	Sloping, feet.	Horizontal, feet.	Elevation, feet.	Sloping, feet.	Horizontal, feet.	Elevation, feet.	Sloping, feet.	Horizontal, feet.	Elevation, feet.		
.....	Upper Lehigh, No. 1																				
.....	Upper Lehigh, No. 2																				
.....	Upper Lehigh, No. 3																				
.....	Upper Lehigh, No. 4																				
.....	Woodside, No. 1																				
.....	Cross Creek, No. 1																				
.....	Cross Creek, No. 2																				
.....	Highland, No. 1	753.20	641.24	1,394																	
.....	Highland, No. 2 (underground)				286	378.47	1,342														
.....	Buck Mountain, No. 2																				
.....	Buck Mountain, No. 4																				
.....	Buck Mountain, No. 5																				
.....	Buck Mountain, No. 6																				
.....	Council Ridge, No. 2																				
.....	Council Ridge, No. 3																				
.....	Council Ridge, No. 4																				
.....	Council Ridge, No. 5																				
.....	Jeddo, No. 1 (abandoned)																				
.....	Jeddo, No. 2 (abandoned)																				
.....	Jeddo, No. 3 (abandoned)																				
.....	Oakdale, No. 1	846	706	1,097																	
.....	Oakdale, No. 2																				
.....	Ebervale, No. 1	820.25	710.60	1,102.82																	
.....	Ebervale, No. 2	853.50	728.53	1,678.78																	
.....	Ebervale, No. 3	915	828.27	1,184 59																	
.....	Harleigh, No. 1																				
.....	Harleigh, No. 2																				
.....	Harleigh, No. 3																				
.....	Lattimer, No. 1																				
.....	Lattimer, No. 2																				
.....	Milnesville, No. 1 (abandoned)																				
.....	Milnesville, No. 2 (abandoned)																				
.....	Milnesville, No. 3 (abandoned)																				
.....	Milnesville, No. 4 (abandoned)	381 53	365.55	1,487 80																	
.....	Milnesville, No. 5 (abandoned)																				
.....	Milnesville, No. 6 (working)																				
.....	Milnesville, No. 7 (working)																				
.....	Hollywood, No. 1																				
.....	Hollywood, No. 2																				
.....	East Sugar Loaf, No. 1																				
.....	East Sugar Loaf, No. 2							1,450		785											
.....	East Sugar Loaf, No. 3	1,096																			
.....	East Sugar Loaf, No. 4																				

.....	East Sugar Loaf, No. 5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	East Sugar Loaf, No. 6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	East Sugar Loaf, No. 7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Diamond, No. 1	770	667.23	1,235	.....	.....	.....	1,385	1,190	926	1,615	1,512.78	748.71	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Diamond, No. 2	666	569.93	1,213	918	775.63	1,180.83	1,188.50	961.10	928.59	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Diamond, No. 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Hazleton, No. 1	625	581	1,443.61	830	771.50	1,365.11	1,255.50	1,183	1,263	1,563	1,488.70	1,220.31	1,505.50	1,758.30	1,142.08	2,236.50	2,040.42	865.91	.....	.....	.....
.....	Hazleton, No. 2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Hazleton, No. 3	721	629.14	1,275.58	1,017	889.45	1,081.33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Laurel Hill, No. 4	542.50	430	1,297	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Laurel Hill, No. 5	375	237	1,298	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Cranberry, No. 1	782.50	702.19	1,422.83	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Crystal Ridge, No. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Crystal Ridge, No. 2 (abandoned)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Crystal Ridge, No. 3 (abandoned)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Crystal Ridge, No. 4 (working)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Mt. Pleasant, No. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Mt. Pleasant, No. 2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Mt. Pleasant, No. 3 (abandoned)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Humboldt, No. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Humboldt, No. 2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Humboldt, No. 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Gowen drift, No. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Gowen slope, No. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Meadow, No. 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Meadow, No. 4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Meadow, No. 5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Coleraine, No. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Coleraine, No. 2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Coleraine, No. 4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Spring Mountain, No. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Spring Mountain, No. 4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Spring Mountain, No. 5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Brook, No. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Brook, No. 2	780	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Brook, No. 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Beaver Brook, No. 4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Spring Brook, No. 5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Spring Brook, No. 6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	South Spring Mountain, No. 2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	South Spring Mountain, No. 5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	South Spring Mountain, No. 6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Rum Run shaft, No. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Rum Run slope, No. 1	636	485	625	880	689	469	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Rum Run slope, No. 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Rum Run slope, No. 4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Summit Hill, No. 2	726	675	1,114	984	923	1,033	1,221	1,151	961	1,475	1,385	872	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Summit Hill, No. 4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Summit Hill, No. 7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Summit Hill, No. 9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Tunnel, No. 5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Tunnel, No. 6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Tunnel, No. 9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Summit Hill Town	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Panther Creek	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Summit Hill slope, No. 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Through the courtesy of Thomas S. M'Nair, C. E. and M. E., I have the pleasure of submitting this table of elevations, and, also, through politeness of John Rutter, C. E. for Lehigh and Wilkesbarre coal company, at Summit Hill. I have omitted the elevations and lengths of some of the slopes, as the necessary datas could not be furnished in time for the report, but intend filling it out from time to time.

TABLE No. 5.—*Exhibiting the number of slopes and breakers in actual use, and the amount of coal shipped to market, and the number of days worked at the breakers during the year ending December 31, 1875. Also the number of kegs of powder used to mine said tonnage of coal, estimate capacity of breakers, and the number of men and boys employed in and about the mines, also the number of mules use at each colliery, &c.*

LOCATION OF COLLIERIES.	Number of slopes in actual use	Number of breakers working	Number of tunnels in actual use	Coal shipped to market during the year 1875	Number of days worked at the breaker	Number of kegs of powder used	Estimate capacity of breaker in tons per day	Number of actual miners inside	Number of laborers inside	Number of drivers and door-boys in the mines	Number of mechanics	Number of breaker men	Number of drivers and slate picker boys outside	Total number of men and boys employed in and about the mines	Number of mules
				tons.											
Upper Lehigh	4	2	.....	133,301.09	191	2,146	1,400	114	113	16	13	24	104	384	51
Woodside	1	1	.....	24,336.08	116¼	630	400	34	32	4	4	17	10	101	12
Drifton, Cross Creek	1	1	.....	72,705.13	124⅛	1,360	750	85	52	12	12	52	11	251	31
Jeddo, Oak Dale	2	2	.....	122,216.18	254⅜	1,816	1,000	153	19	31	8	39	74	321	51
Highland	1	1	.....	56,211.09	132½	1,060	500	61	7	15	7	23	30	143	21
Buck Mountain	1	1	.....	55,636.00	113	1,200	825	126	69	15	28	63	32	323	68
Eckley—Council Ridge	2	2	.....	76,453.06	250	1,495	900	81	59	35	14	16	100	305	53
Ebervale	3	2	.....	166,900.00	218	3,000	1,500	123	106	9	16	92	71	417	55
Harleigh	2	2	.....	85,435.15	113½	1,460	1,000	73	111	32	15	11	101	373	32
Lattimer	2	2	.....	128,309.14	264	1,056	800	104	41	15	7	23	108	295	43
Milnesville	1	1	.....	66,000.00	265	1,460	800	37	45	13	9	63	29	196	21
Hollywood	1	1	.....	53,741.18	128	1,117	600	35	28	4	5	6	38	116	11
Stockton	4	3	.....	110,000.00	260	2,250	1,600	163	155	21	43	87	88	557	52
Hazleton	3	3	.....	121,429.19	381¾	1,659	1,550	118	115	22	22	103	118	498	71
Sugar Loaf Collieries	3	3	.....	68,430.05	225½	1,025	850	91	45	12	12	58	71	289	25
Cranberry and Crystal Ridge	3	2	.....	80,973.14	249½	1,610	1,050	90	64	12	15	48	63	292	34
Mt. Pleasant	1	1	.....	62,000.00	255	1,495	350	41	22	9	10	10	28	120	23
Humboldt	1	1	.....	42,000.00	132	1,029	400	52	41	9	10	32	46	190	19
Gowen	1	1	drift 1	24,298.07	236	550	300	32	10	4	3	13	16	78	7
Beaver Meadow	4	1	.....	30,000.00	118	600	300	18	40	6	7	8	13	92	9
Coleraine	2	2	drift 1	93,000.00	279⅝	1,757	650	85	58	29	13	24	49	249	37
Jeanesville	4	3	.....	174,816.00	399	2,719	1,900	124	162	38	19	59	118	520	67
Beaver Brook	4	2	.....	54,900.00	289⅝	1,693	800	83	71	19	17	31	54	275	34
Yorktown	2	2	.....	72,637.15	217¼	1,620	800	93	113	19	27	58	87	397	13
Tresckow	3	1	.....	63,340.12	126	1,785	600	91	92	20	20	59	60	342	42
Summit Hill	3	4	tun. 3	221,190.06	570½	2,820	2,000	221	289	84	41	187	253	1,072	153
Nesquehoning	2	1	tun. 1 shaft 1	63,490.07	145¼	648	500	59	67	21	18	62	77	309	40
	63	48	7	2,323,535.15	5,975	40,760	24,125	2,384	2,026	514	415	1,298	1,879	8,516	1,081

Seven slopes sinking and six slopes abandoned. Seven new breakers now building and three breakers abandoned.
Average number of days for breakers to work, 124⅛ nearly.
Commenced working after the suspension about the 10th of July, 1875.
There were about 62⅔ tons of coal mined for each keg of powder used; or, 2½ tons of coal mined for each pound of powder used.

REPORT

OF INSPECTOR OF COAL MINES FOR THE MIDDLE DISTRICT OF LUZERNE AND CARBON COUNTIES, FOR THE YEAR 1875.

OFFICE OF INSPECTOR OF COAL MINES,
WILKESBARRE, PA., *March* 18, 1876.

His Excellency, JOHN F. HARTRANFT,
Governor of the Commonwealth of Pennsylvania:

SIR:—I have the honor to submit herewith my sixth annual report as inspector of coal mines for this district, ending December, 1875.

My first term of office having expired July 19, 1875, and having received the appointment for another term, the present report covers the last six months of the first term of five years and the first six months of the new or present term.

The report contains, among others, the following items, each bearing, directly or indirectly, on the subject "health and safety of persons employed in coal mines," to wit: A brief note relating to the Empire and Baltimore fires, both of which I gave lengthy accounts of in 1874 reports; tables showing the number of fans in use in the district in 1870; also the number since erected; other tables relating to and comparing the ratios of accidents in various forms and different countries; table, No. 5, showing the quantity of coal produced at each colliery, location, &c.; table, No. 6, shows the number of persons killed during the year; and table, No. 7, shows the number of persons injured during the year, names, &c.; articles on improvements, on steam boiler inspection, ventilation, &c.; also plan of iron head house employed in district.

Yours truly,

T. M. WILLIAMS,
Inspector of Mines.

IMPROVEMENTS.

Shaft sinking has not been carried to such an extent during the year just ended as it was during the previous year, although several pits were sunk during the year, notwithstanding the panic and its effects.

SHAFTS COMPLETED DURING 1875.

J. H. Swoyer's Forty Fort Shaft.—This shaft was commenced and completed since my report for 1874, breaking ground for the sinking in July and completing the same early in the fall, which enabled them to send away four or five hundred tons of coal per day by the end of December, 1875.

The total depth of hoisting shaft being about 100 feet, the second opening was secured by sinking about 50 feet from an overlying seam. The work of sinking shafts, building a breaker, erecting the proper machinery in the said breaker, together with the hoisting tackle for the shaft, and the building of a fan 15 feet diameter, besides opening the mine sufficient to enable them to mine amount of coal above stated, in so limited a time, is certainly speaking volumes for the energy and enterprise of Mr. J. H. Swoyer and his efficient staff of officers.

SECTION THROUGH

SLOPE NO. 1.

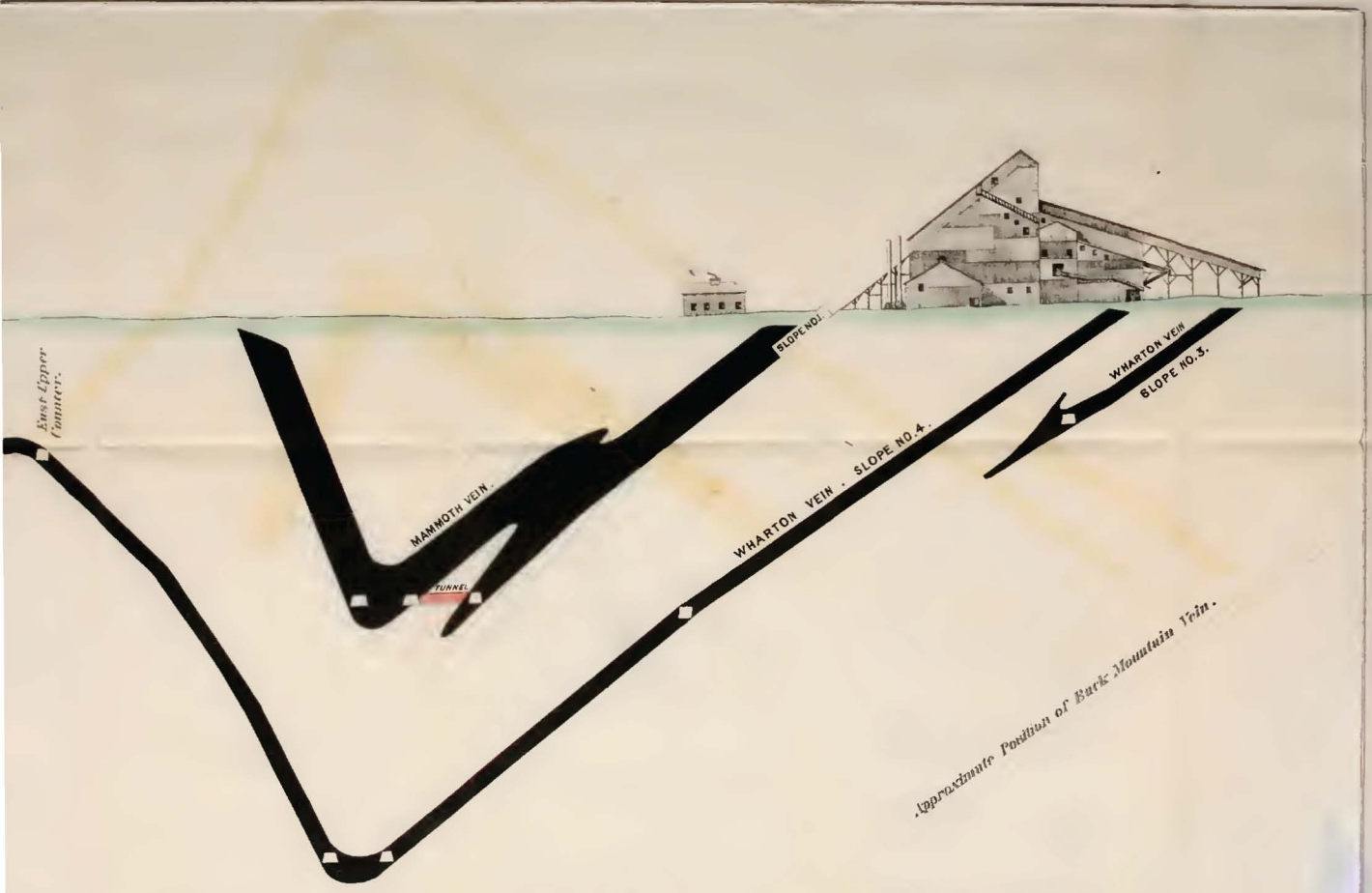
OF THE

BEAVER BROOK COLLIERY.

Audenried, Pa.

Scale 50 ft to an inch

Approximate Position of Buck Mountain Vein.



E. L. BULLOCK.
SUPERINTENDENT.

Messrs. Chas. Leonard, assistant superintendent; Wm. M'Culloch, mining foreman; W. B. Hick, mining engineer, and Philip M'Cabe, mining boss.

Susquehanna Coal Co.'s No. 1 Shaft.—This shaft has been completed to the Hillman seam, where they are at present opening out preparatory to driving for the second opening, which is to be secured by a connection with the workings in the No. 2 slope on the same seam. Work was suspended early in December, to remain so until their permanent machinery be in working trim, which consists of a pair of first-motion hoisting engines, cylinders — inches diameter, stroke — feet, drum — feet diameter.

No. 2 Shaft, S. C. Co.—This shaft has been completed so far as sinking is concerned, and is ready for the erection of their permanent machinery and hoisting tackle, which is also to be of a most substantial character, on the first motion style. A second opening for this shaft will be made by connecting to No. 1 slope workings.

No. 3 Shaft, D. and H. C. Cos., near Plymouth.—This shaft, although its sinking has been completed, yet it is not in operation, not having made connection with the second opening shaft. They still have considerable rock to drive through to reach the foot of the second opening shaft.

Oak-wood Shaft, L. V. C. Co.—This shaft has been completed, except connecting their new fan and making proper arrangements to ventilate the proposed workings of Oak-wood and a part of those already opened out in the Prospect shaft. The connections between the aforementioned shafts and the shaft timbering have been completed, and the massive machinery, calculated to hoist the coals from this shaft, are in place, also a fan 30 feet diameter.

Shaft Sinking Temporarily Discontinued.

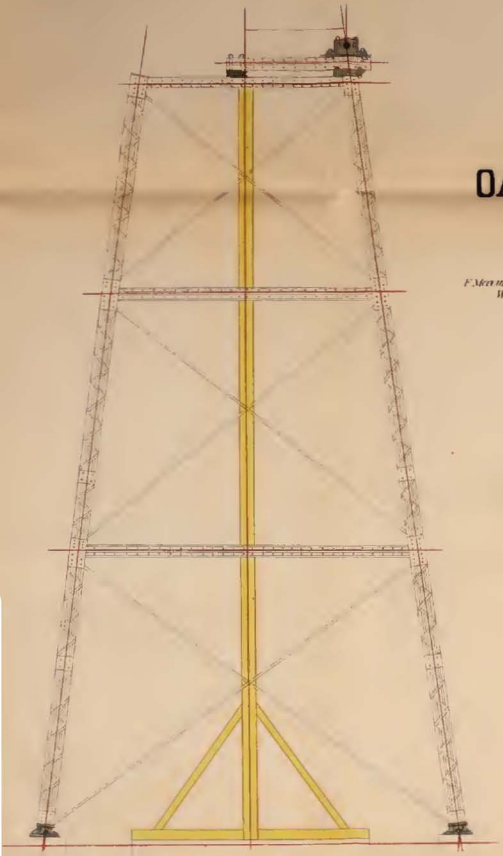
The following named new shafts, owned by the Lehigh and Wilkesbarre Coal Company, sinking in 1874, have been discontinued during 1875, to wit: Hollenback, South Wilkesbarre and the Gaylord (or No. 14) shafts.

Franklin Coal Company's New Slope.—This slope has been driven out to the surface, through rock, from the head of an inside slope, to do away with the old upper slope, and by said change get their coals to the surface by the one hoisting, and at the same time land it on a level that will enable them to run the same to the head of their breaker instead of, as heretofore, by two inside slopes and an additional hoist at the breaker.

The company are also putting very substantial machinery in place at the abovenamed slope, being a pair of first motion engines, with cast iron drum of uniform diameter. Diameter of engine cylinders, 30 inches; stroke, 72 inches; diameter of drum, 12 feet; face of drum 15 feet, and will carry over one-half a mile of wire rope of the diameter rope calculated to be used upon the same. There being but one track in the said new slope, and the same is calculated to operate several lifts, hence the rope will necessarily be upon their drum altogether by the time the load reaches the landing. There has also been erected a fine brick boiler room, and nine new boilers put up, 34 inch diameter and 30 feet long, with room for 3 or 6 more in the building.

New Shafts and Drifts.

Messrs. Broderick, Walters & Co. are opening out a very extensive concern, about two miles north-east of Kingston borough, by sinking two new shafts, driving and opening four new drifts, and erecting a very extensive breaker. The breaker is calculated to prepare the coals from the two shafts and a part of the coal from those drifts, or probably all at present, until



PLAN OF

HEAD HOUSE

AT

OAKWOOD SHAFT

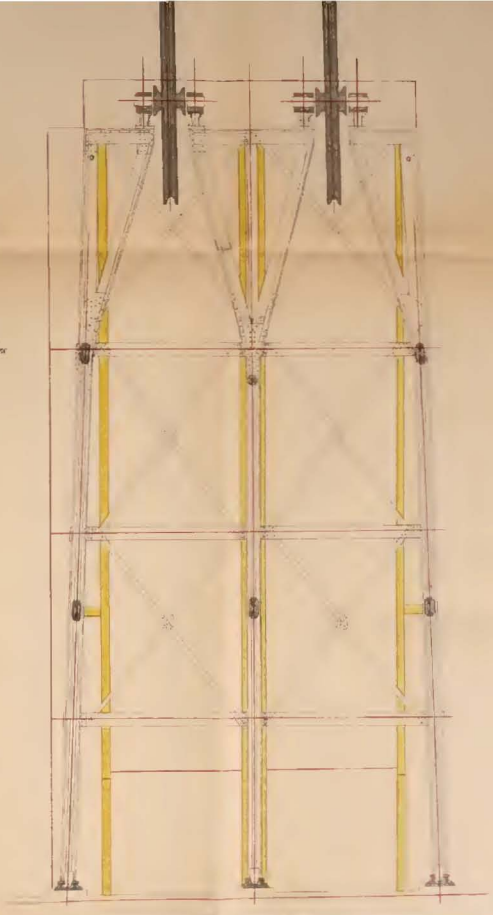
of the

Lehigh Valley Coal Company.

F. Meeser Gen'l Sup't
Wilkes Barre Pa.

T.M. Williams
Inspector of Mines

Scale ½ inch 1 foot



they complete the sinking of their present shafts and erecting of another breaker, which they have in contemplation, near the location of their drifts. This second breaker spoken of is intended, so stated, to prepare the coals from the Red Ash seam alone, upon which two of these drifts are opened out. Work is progressing finely in these drifts by driving gangways and opening chambers ready so as to enable them to mine quite extensively as soon as their first breaker will be completed, which will be ready early in the spring of 1876.

The two shafts above referred to have not yet penetrated the coal, having had considerable trouble in passing through the surface wash or alluvium of about 60 feet. The rock was found at the aforementioned depth, which gives them the necessary foundation for their shaft timber and a good roof for covering for their coal seam. Those shafts are located about 200 feet apart and sank simultaneously, so that not much delay will be occasioned in the time necessary to make a lawful second opening, the distance between them being so small.

The area of the mining territory of this company is stated to be about 800 acres, and very favorably located for outside arrangements.

Maltby New Circular Shaft.

This shaft, although commenced in 1872, has not been completed up to the present time. I stated in my previous reports that it was a circular shaft. The shaft lining, being a brick wall 21 inches through, which was let down by building continuously upon the top, its weight pressing it down as the sand and other material was taken out. The wall finally became so bound by timber pressing upon its sides that its strength was not sufficient to resist the unequal pressure upon its outside, and its cast-iron plates having broken work was discontinued for some time. During this summer Mr. A. O. Fowler, the superintendent, has changed the plan, and has had a cast-iron tube cast in whole rings in sections of about 4 feet in length, and has succeeded in putting the same inside of the brick wall and reached a depth of about 100 feet, or about 20 feet below the brick wall. A short distance below the brick wall they struck a bed of clay, perfectly dry; but this did not last long before they were surprised and driven right out by a force or pressure from below, driving the sand, clay and water up through the bottom until they had to adopt still another new apparatus called a digger, a kind of an automatic shovel, which acts exceedingly well so far as tried, as by this means they are enabled to draw up the sand and clay without taking out the water and the great weight of the cast-iron tubing, pressing it down many feet below the excavated part, thereby forming a leader or shoe. It is thought that matters looks more favorable now than at any other time from its commencement to reach the solid rock, which is at a distance of about 40 feet below their present tubing.

Second Openings.

The following mines have had their second openings completed this year, to wit:

J. H. Swoyer's Forty Fort Colliery.—This mine has had a small shaft, 50 feet deep, sank from an overlying seam, which is intended to be used as a second opening for this mine, and also to be used for ventilating purposes, and eventually be enlarged and afterwards used for a hoisting shaft for the coals from their present seam, while that the present main or hoisting shaft will be continued down to an underlying seam, &c.

It is true that accidents from bursting of steam boilers, breaking of wire ropes, and of machinery used for hoisting, like any other mechanism, will take place let the care and inspection be ever so much and ever so good. Still that does not prove that should these matters receive less care than they do at present that our accidents would not be increased, and the same may be said of additional care. It cannot prevent all accidents, but may prevent many that otherwise would take place.

The next point in connection with this matter is the importance of constant ventilation. It is well known that most of our ventilators, at least in this district, are depending upon a constant supply of steam to enable them to be driven at their regular speed. A small margin is found where governors are used upon the fan engine. It is also as well known that the majority of those ventilators are erected close to the head of the mine, slope or shaft, and that the steam for driving the same is generated by the same fires and boilers as those used for the hoisting and breaking of coal, &c. In this way, as I said before, the expense of steam generating, and of every thing connected therewith, is considered reduced, such as getting the coal cheaper, attendance of boilers and of engineers, &c.

Now I say, as I have often informed our mining foremen and others, that each ventilator should be supplied with a separate steam boiler or boilers, so that if an explosion should take place at the main, or hoisting shaft boiler house, the ventilator could be kept at work to keep the men safe until such time as they could be withdrawn from the mine. And further, that the fan boiler should not be too close to the fan, and that a connection should be made and kept at all times in good order between the boilers of the hoisting shaft and the ventilator, if practicable, so as to make use of the same at such times as when the same requires repairs or cleaning, or any emergency.

The matter of a thorough and competent inspection of the steam boilers, together with the hoisting tackle, is surely worthy of attention.

Ventilation.

The matter of ventilation of mines is receiving much more attention in this district than it did years ago. Some of this activity is caused, no doubt, by the stern necessity of better ventilation from the increased discharge of explosive gas, &c , yet a large portion must be attributable to the law on mining and its connections. I would state, however, that there are many hundreds of our practical miners who do not understand anything, comparatively speaking, about the laws of nature governing ventilation, and am sorry to state that a few of our bosses should be placed in the same category.

When the writer made his first few official visits he recommended, among other changes necessary, the erection of fans of medium sizes at various places as a suitable means to cause the desired amounts of ventilation. In some instances those suggestions were received kindly and acted upon promptly, and in each case giving entire satisfaction. A few others insisted upon building furnaces, no doubt honestly thinking that such means would be the cheapest and would answer all purposes I do not need to say much about the result in details. Suffice it to be said that in nearly each case measures similar to what I had first recommended had to be resorted to, and that, too, after having spent large sums of money endeavoring to fight the plainest and simplest laws of nature.

Many of the persons in charge of coal mines think that since so many of the works on mines and mining, published in England, Scotland or Wales, give accounts of powerful ventilation where furnaces only were in use, and some of them deciding strongly in favor of the furnace as a means of se-

curing proper ventilation, then surely it must follow that similar results should be had here, and all without reference to the conditions.

The furnace as a ventilator is not well adapted to our shallow workings, and especially so on account of the great variations of temperatures on the surface at different seasons of the year, and even at various periods of time during the same season.

There are but few furnaces in use at present in the district. One in Mill drift, one in Boston colliery, only remain of those in use prior to my official connection with the same. A double-arched furnace has since been built in a part of the Baltimore mines, and the aforementioned are about all that we have, and the loss would not be very seriously felt did we not even have them.

A table accompanying this report will show that centrifugal fans are used mainly in this district, on the exhaust principle. Those fans are of various patterns, and yet varying only in their details. The conditions under which our fans are placed are about as varied as are their construction. Some are erected immediately over an air-way at the head of the slope or shaft; others place them at a proper distance from the head of upcast so as to provide against concussion in case of an explosion of gas in the mine, &c. A few are located inside the mine.

In the table of fans there are several columns in which but very little data can be had at present, and yet to be able to give any decided opinion regarding the superiority of one particular fan over that of another requires that those items be had, and probably some others, to even make an approximate comparison. Notwithstanding our lack of knowledge upon those points, many persons do claim that a certain kind of fan which they have, or which they would like to furnish, will do more actual duty than any others, and even go so far as to say that one of their fans of a certain size will exhaust a certain amount of air from any mine, if erected over an air-way having a certain sectional area. Others just as foolishly will say we have a fan of the same dimensions as the fan erected at another colliery, but ours is a much better fan. It may be that the fans may differ a trifle in their construction, or it may be that both the fans are built by the same manufacturers and off the same patterns. This only goes to prove how little our men think about the conditions under which those fans are placed, and that those unequal conditions are probably the cause of nearly, if not all, the differences. There are but a very few fans in place in this district at present that were in use prior to the enactment of the mining law of 1870. The tables in this report show first the small number of fans in the district and their insignificant sizes, most part of them in 1870; and again the large number since erected, and at the same time the great differences of their dimensions, respectively.

I would further state that many persons in charge of mines, and sometimes owners, are placing too much importance upon the ventilating machine, thinking that it must be of some particular pattern ere they can secure good ventilation. I admit the superiority of one ventilating apparatus over that of another to produce a certain result. Nevertheless, I wish to state right here that much more depends upon the condition of the mine, from the mouth of the downcast to the face of the workings, and again from these through all the intricate and many contracted passages through which the same is required to pass on its return to reach the top of the upcast on the surface.

If our mine managers would pay more attention to the matter of ascertaining what amount of power they are spending upon ventilation, and what percentage of useful effect of the power spent that they get, and further in-

quire the relation of the power spent on friction to that used in creating the actual velocity, they would at once be able to find the root of the difficulty under which they labor—that of insufficient ventilation—and this would enable them to strike at the same in a manner to improve the same.

In a treatise on "*Gases met with in Coal Mines, and Principle of Ventilation,*" by J. J. Akinson, deceased, an eminent inspector of mines in England. A table is given on page 32, showing the comparative amounts of pressures expended in different mines upon creating velocities of air, and overcoming the frictional resistances that the air meets with in the mines, respectively.

The following cases are cited, the pressure due to the velocities, being those due to the final velocities, at the top of the up-cast shaft:

	Pressure in air column due to velocity.—Ft. of air column,	Pressure in air column due to friction.—Feet of air column,	Total pressure employ'd.—Ft. of air column,	Proportion due to velocity and friction, respectively.....
				Vel. *Fric.*
Hetton colliery, first case	10.43	179.88	190.31	1 : 18
Hetton colliery, second case	12.37	212.63	225.00	1 : 17
Haswell colliery	13.87	140.66	154.50	1 : 10
Tyne Main colliery	25.70	177.50	203.20	1 : 7
Similar results found in this district by the writer, by experimenting in 1872, as follows:—				
D. & H. C. Co.'s No. 1 colliery, Plymouth	3.93	26.32	30.25	1 : 6.69
D., L. & W. R. R. Co.'s Avondale colliery	1.76	54.56	56.32	1 : 31
D. & H. C. Co.'s Pine Ridge colliery,	4.22	108.44	112.66	1 : 25.7

From this it will be seen that of a total power of nineteen at the Hetton colliery no less than eighteen were employed on friction, and only one upon the velocity of the air. At Haswell colliery ten parts of eleven were spent upon friction, and one upon the actual velocity. At the Tyne Main colliery seven parts out of eight were spent upon friction, and only one upon the actual velocities found at the top of the up-cast shaft.

In the results found in this district in the cases cited there were $6\frac{69}{100}$ spent upon friction, and only one on the velocity at the No. 1 shaft, D. and H. C. Co.'s mine, near Plymouth. This was favorable at the time, the air being divided into four splits or currents, two in each of two seams worked. At the Avondale colliery there were two splits of air only, and long airways. The power spent there showed that thirty-one parts were spent upon friction, and only one upon creating the actual velocities.

Again, out of a total power of $26\frac{7}{0}$ expended no less than $25\frac{7}{0}$ were spent upon the frictional resistance of the air, and only one upon the creation of actual velocities found at the head of the up cast shaft, in the Pine Ridge colliery. They had two splits or currents at this time. Those figures prove that the great draw-back in causing ventilation is the friction of the air in passing through the mines.

It is impossible to learn anything definite of the actual work done on mine ventilation unless a *water gauge, barometer* or some instrument be used to show the resistance offered to the motion of the air.

The writer has employed the *aneroid barometer* quite satisfactorily in conjunction with the water gauge, immediately at the fan. When the barome-

ter is employed inside the mines we are liable to get confused, because it is affected first by the friction changing the tension of the air, and second by the difference of elevation; hence it is not reliable for either purpose inside the mines, unless it be kept stationary, when it can be used to great advantage.

The causes of the great friction met with in passing large quantities of air through mines is to be found in the contracted downcasts and upcasts, and the long and crooked small-sized main air-ways, and their tributaries, through the interior of the mines, with the hundreds of elbows of every angle it has to meet; and the main air-ways being of small sectional area the velocity must be great to pass even a medium quantity, hence high velocities and crooked ways must retard the currents extremely and cause great friction, as the friction increases not as the simple velocity but as its square.

Much more care is being taken in regard to the condition of the air-ways, relating to size and form. In 1870 there were but few air-ways in this district large enough to use a mine car in it, the custom being to drive small air-ways parallel with the main gangway only about large enough for the party driving the same to work in, often having a sectional area of 3 feet by 2 feet, and if it would be 3 feet by 4 or 5 feet it was considered quite large. The coal and dirt cut in said small air-ways (or as called in some localities, dog holes or monkey gangways) had to be handled all by using a wheel-barrow or other small buggy, or pitched back with a shovel, the whole length of distance between the cross-cuts of 45 feet or 60 feet and the thickness of the pillar besides.

Many places, however, those small air-ways were not driven, and only a wooden brattice built along side the gangway, and generally too small to allow any person to pass through the same, which could not be kept closer than 60 or 70 feet from the face of the gangway for fear of blasting it from gangway or parties opening chambers.

Others again were using brattices across shutes, with sliding doors, and still others using doors on the entrance of each chamber to try and force the current to the face of the mine.

At present there are but two or three parties in this district using anything else than a large and roomy gangway in which the regular mine car is taken through, which must have a certain sectional area to pass through, let the price be small or the ground to cut hard it matters not.

The main air-ways are being made in most of our mines at present from 60 to 100 feet sectional area.

The air bridges or crossings are also being made about the same sectional area.

The cross-cuts between main gangways and their air-ways, and those between the chambers, are required to be from 35 to 40 or 50 feet sectional area. Much trouble was experienced by the writer in breaking up the old system of small air-ways and cross-cuts.

Under the old system of using doors on the mouth of each chamber, as it was in some mines, any one of those being left open would necessarily cut off most part of the whole current from all those farther in the interior of the mine. Again even when there was what was then considered a large air-way the idea of using anything more than the slate and bone found in the seam, and packed in with fine dirt or culm, to make up the stoppings in the cross-cuts, was seldom thought of; and if a mine was kept in very good condition it would have the main stoppings made up of inch boards, some places of single and others double. Now the most of our stoppings between the main gangways and their parallel air-ways are made up of slate

or bone and lime mortar. In some instances brick are used, and a few have used cement, and it gave good satisfaction.

Much opposition was manifested to the introduction or recommendation by the writer of stone walls and mortar to be used in the construction of all the main stopping and on the sides and tops of main doors. Some parties tried to satisfy the requirements by building their stoppings of scantling 3 inches by 4 inches for props or uprights, and then place inch boards on either side, filling the intermediate spaces with screened ashes, sand or clay; but this packing would eventually settle down and the structure would let the air screen through. Next thing the wooden work would decay and require renewing, so that by the time that the mine would be two or three years old, and need to stand a heavier pressure, the whole thing was rotten. Other parties tried clay to pack up their stoppings, and as mortar, building stone or bone on either side, and the middle with clay. I tried to show that it would not answer, but its use was not abandoned until I finally succeeded in getting them to calculate the actual cost per perch when it received its death warrant, its cost being about four times that of masonry on the surface.

The parties who have used the stone and mortar stoppings now agree with me, and will say unhesitatingly that they are much the cheapest kind of stoppings to use. Time does not affect their capability to withstand the extra drag or pressure brought upon them as the mine becomes extended, whereas the wooden ones would be affected by the rot, and consequently their efficiency must be inversely to the time of their service required from the time of their construction. Add to the above deficiency the fact that the drag increases in proportion to the extension other things being equal.

The next department in which we have advanced in materially is in the arrangement of doors, to assist in keeping the main currents steady around to the faces of the working places.

Under the old regime very few check-doors were used in this as well as other districts, unless it be in mines where fire-damp was generated, when they could not be dispensed with, and even there the matter of doubling doors was never attempted. At present there are check-doors sufficient in each current or split in every mine to force the main body of the said split or current around to the faces of each and every working place in its territory, whether there be explosive gas generated in the mine or not. The enormous quantity of gunpowder used in blasting the rock and coal in a mine, especially so in our anthracite mines, adds much to the requirements of ventilation. Many of our mines use three-quarters to one pound of gunpowder for each ton of coal mined; hence if a mine produces 1,000 tons of coal daily, and taking three-quarters of a pound of powder as being used per ton, = 750 pounds of powder. This is only one of many other items affecting our ventilation, but I mention this because this item is heavier in our mines than in the bituminous mines.

To come back to the matter of doors, I would state that our main doors are being erected in a very substantial manner. They are hung on pieces of square timber, eight or ten inches square, which are niched into the roof, and the whole built around with good stone and lime mortar, faced or pointed over. Those main doors are put up in pairs, called in the mining law double-doors; they are placed apart, with sufficient distance between them to allow a team and a trip of mine cars to pass through the first and afterward be closed while the trip is yet in motion before there be any occasion to open the second door. In this way the one is a check-up the other; in other words, one of the two doors is to be at all times closed to protect the current from breaking. The distance between those doors is regulated by

the grade of the road between them, and the length of the team and trip likely to be required on said section.

I am happy to state that a plan accompanying this report, and gotten up by myself, has given general satisfaction in the arrangements of the doors, both near the foot of shaft or slope and in the interior of the mine, wherever it is applicable. There are several mines opened out upon the system suggested in the said plan. It has been a great error in the past to open a mine without regard to any system.

Many of our old mines, and some not yet very old, are expensive monuments to the random system of mining that prevailed in our anthracite coal fields in the past.

Mine Signals.

The importance of having appliances that can be used to convey a known signal or signals from the ventilator, generally located on the surface, to a certain station in the interior of the mines is becoming more apparent each day in our deep and fiery mines. Better still could the telegraphic system be introduced, when any message could be transmitted from the surface to the men in the mines and *vice versa*. Two different kinds of machines have been introduced, in connection with signals, into this district of late.

An electric signal is being used in the Stanton slope, where the ventilating fans are erected that ventilate the Audenreid shaft colliery. The battery is situated in the fan engine room, and a regular code of signals is used whereby the parties at the foot of the slope can correspond with those at the fans in relation to matters indicated by the aforementioned code of signals. The object of those signals is to give an alarm to the workmen below in case that anything happens, whereby the ventilation may be affected, and thus provide against accidents from explosions of gas. The distance between the fans on the surface and the extreme end of the wire in the mines is 2,200 feet.

There is still another signal in the shaft and a speaking tube. The new signal in the shaft is one of Mr. Howard's patent pneumatic signals. The signal is attached to the ends of the speaking tube, and makes a very excellent arrangement, for it can be made to operate signals at the first and second landings and engine room simultaneously. At the Empire, No. 5, slope another of the electric signals is in use very successfully. Distance from fan to station, 1,500 feet.

Discipline.

The matter of discipline is not what it should be in our mines. The lack of discipline is caused by the absence of any code of general or special rules required by the mining law, together with the indifference of both officers and workmen.

Our mining is getting much deeper each year, which necessarily increases our dangers, and better discipline must be had if our accidents list is to receive any attention.

In my opinion there should be some changes in our mining law ere long to meet our wants, which have changed materially since the enacting of the present law. The law of 1870 has worked admirably without a doubt, yet there is room for improvement that would come in well at the present stage of mining enterprise, to cope successfully with difficulties that arise as we advance in this science.

The matter of special and general laws are certainly worthy of our consideration, and to make them effective more legislation must be had. Again

the law itself is deficient in many matters of details, that are at present placed in a general class, instead of this they should be a little more definite. Other matters are not treated upon at all that should be inserted to improve its operations. Among other things there should be some means provided whereby that the law should be printed upon large posters of paper or cloth, to be posted in some conspicuous place or places at each colliery. Also, that it be printed in small book-form, to be carried in the pocket Those cards or posters and books to be supplied and distributed by the operators through their officers. That each employee must be in possession of a copy of the law. In this way the officers and workmen would not have the excuse to offer that they were ignorant of the requirements of the mining law in its details, &c.

I do think, however, that the law should not be tinkered with by inserting one, two or more of those items, or by passing supplementary acts thereto, rather let us wait awhile longer until a general revision be had, when all the laws on mining in this and other counties may be consulted, and select therefrom what will be applicable to our system of mining, &c.

Mining Casualties.

Having upon this subject been rather lengthy in my report for 1874, I merely wish to add a few remarks upon the same in this report, to wit:

It will be seen by the list of fatal accidents that a considerable increase has taken place in this district during the year 1875. The quantity of coals produced being a trifle less than in 1874 also helps to make the ratio of coal mined per life lost appear quite unfavorable, and especially so when we look at the comparative table prepared in my report showing the ratios of similar items in Great Britain and Nova Scotia.

The fatal accidents in shafts have been extraordinarily heavy this year, being 14 in number, or equal to $22\frac{2}{10}$ per cent. of the whole, against 3 in number or equal to a little over 5 per cent. of the whole in 1874. Those from fire-damp explosions were one-third less than in 1874.

In regard to the comparing of one accident, quantity of minerals produced per life lost, &c., I still maintain that the cases are not parallel.

In addition to what I pointed out in my last report about the difference of anthracite and bituminous I would state that it is claimed that the system of "long wall working" reduces the ratio of accidents, which they use extensively. And again of the total minerals produced under the mine regulation act of 1872, which was 140,713,832 tons, no less than 10 per cent. was of fire-clay, iron stone and shale, leaving only 126,590,108 tons.

I would also state that a few of their districts exhibit about the same results as ours, for instance take the following districts: North and East Lancashire, employing 32,828 persons, the number of tons of mineral raised per life lost was 108,350; West Lancashire and North Wales, employing 43,658 persons, produced 86,755 tons of minerals per life lost; North Staffordshire district, 62,921 tons per life lost; South Wales district, 87,789 tons per life lost. But those were the most unfavorable, and the average of the whole minerals gave 133,251 tons per life lost.

Persons Employed In and About the Mines in 1875.

	Inside.	Outside.	Totals.
Men employed	8,506	2,389	10,895
Boys employed	1,583	2,530	4,113
Totals	10,089	4,919	15,008

RECAPITULATION.

	Inside.	Outside.	Totals.
Number of persons killed	55	8	63
Number of persons injured	96	4	100
Total number of killed and injured	151	12	163

Widows, 31; orphans, 87.

COAL PRODUCTION FOR 1875.

Coal sent to market as per returns	3,945,614 tons.
Coal (estimated) as consumed for home purposes	315,649 tons.
	4,261,263 tons.

Hence the ratio of coals produced per life lost equals $\frac{4,261,263}{63}$ = 67,321 tons.

MACHINERY IN USE IN THE DISTRICT.

Stationary engines, 310, with an estimated power of 15,000; steam boilers in use, 664; fans built during the year, 9, making 65 for the whole district. Mules: Inside of mines 1,000, and outside 300=1,300. Surface openings: Shafts, 37; slopes, 29; drifts, 20; tunnels, 12=98 total.

ANNUAL REPORT OF THE EMPLOYEES' BENEFIT FUND, UNDER THE LEHIGH AND WILKESBARRE COAL COMPANY.—*Last General Statement*, 1875.

Amount earned in September, 1869	$6,000 00	
Amount earned in October, 1870	5,030 52	
Amount earned in November, 1871	7,425 36	
Amount earned in October, 1872	8,278 01	
Amount earned in September, 1873	12,287 64	
Amount earned in September, 1874	26,373 28	
Amount earned in October, 1875	25,901 25	
Total earnings to October 1, 1875		$91,246 06
Interest paid by Company on balance of acc't to Oct. 1, 1875,		1,971 26
Total		$93,217 32
Amount contributed to Avondale Relief F'd, 1869	$1,000 00	
Amount of orders drawn to October 1, 1874	40,336 41	
Amount of orders drawn from October, 1874, to October 1, 1875, as per foregoing statement	25,545 14	
		66,881 55
Balance in Treasury, October 1, 1875		26,335 77

WILKESBARRE, *Oct.* 1, 1875. E. B. AYRES, *Treasurer*.

There is no occasion to say a word about the amount of good done by the above Fund, as the figures do so in stronger terms than any multiplicity of words can.

Messrs. Chas. and George Parrish also have succeeded, in a great measure, in breaking up an old and foolish custom among the miners under them, in relation to suspending work during the time that would elapse in case of a fatal accident from the time of its occurrence until the burial. They proposed that if the men would continue to work on, and keep the mine going during the interval just mentioned, until noon of the day of the funeral, and

then each person contribute fifty cents, to be paid to the proper persons related to the deceased, that the company would pay as much as the aggregate sum from the men. The men have agreed, and the following is some of the results:

Jno. Flaherty, killed August, 1873; men contributed $233 50, company contributed $233 50=$467. Frank Longstaff, killed August, 1874; men contributed $128, company contributed $128=$256. Patrick Hart, killed March, 1874; men contributed $310, company contributed $310=$621. Thos. Davis, killed September, 1875; men contributed $194, company contributed $194=$388. Patrick Doe, killed December, 1875; men contributed $236, company contributed $236=$472. John Fox, (boy,) killed December, 1875, men contributed $117, company contributed $117=$234.

The following table is intended to show the number and nature of the fatal accidents which have occurred in this district during the past five years:

TABLE No. 1.—*Middle district of Luzerne and Carbon counties report.—Number of persons killed and injured during the years* 1871-2-3-4-5.

	1871.		1872.		1873.		1874.		1875.		Total.	
	Killed..	Injured.	Killed..	Injured.	Killed..	Injured.	Killed..	Injured.	Killed..	Injured.	Killed..	Injured.
Explosions of fire-damp	1	31	8	24	6	14	9	32	6	32	30	133
Falls of coal and bone, rock, &c.												
Falls of coal and bone	11	15	12	23	9	14	14	19	13	13	59	84
Falls of rock	2	11	3	10	2	7	3	6	5	6	15	40
Falls of sundries	....	....	....	....	....	....	....	....	1	1	1	1
	14	57	23	57	17	35	26	57	25	52	105	258
In shafts.												
Falling into shafts from top	2	1	3	3	3	1	3	3	12	1	23	9
Things falling from top	....	....	....	....	....	....	....	....	....	....	....	....
Falling from part way down	....	....	....	....	....	....	....	....	2	....	2	....
Things falling from part way down	....	....	....	....	....	....	....	....	....	1	....	1
Sundries in shafts	....	....	....	....	....	....	....	....	....	....	....	....
Total in shafts	2	1	3	3	3	1	3	3	14	2	25	10
Miscellaneous underground.												
Explosions of powder	1	8	....	3	....	1	1	9	2	....	4	21
Crushed by mules	....	....	....	....	....	....	....	1	....	3	....	4
Crushed by mine cars	6	9	7	24	13	27	9	14	5	25	40	99
Crushed by mine locomotives	....	....	....	....	....	....	....	1	....	....	....	1
By blasts in coal and rock	....	....	....	....	4	12	4	9	8	14	16	35
Sundries underground	24	12	4	27	....	10	7	6	1	....	36	55
Total miscel's underground	31	29	11	54	17	50	21	40	16	42	96	215
Total underground	47	87	37	114	37	86	50	100	55	96	226	483
On surface.												
By machinery	....	....	....	....	....	....	1	....	2	2	3	2
Suffocated in shutes in breaker	....	....	....	....	....	....	1	....	2	....	3	....
Crushed by cars on surface	....	....	....	....	6	2	1	2	2	....	9	4
Crushed by mine locomotives on surface	....	....	....	....	....	....	....	....	2	....	2	....
Sundries on surface	6	3	3	7	3	3	4	3	....	2	16	18
Total on surface	6	3	3	7	9	5	7	5	8	4	33	24
Gross total	53	90	40	121	46	91	57	105	63	100	259	507

The following table shows the quantity of coal sent to market, number of persons employed and the number of lives lost in this district in the years 1871-2-3-4-5, respectively; also the ratio of said production to each person employed; also to each life lost and the ratio of persons employed to each life lost:

TABLE No. 2.—*Coal production, number of persons employed, &c.*

	1871.	1872.	1873.	1874.	1875.	Total.
Coal produced, in tons, per year	3,000,000	3,250,000	4,232,000	4,513,847	4,261,263	19,257,110
Number of persons employed	9,870	9,807	11,325	13,576	15,008	.....
Ratio of coal produced, in tons, to each employee	304	331.4	372.6	332.5	284	.....
	1871.	1872.	1873.	1874.	1875.	Average.
Number of lives lost each year	54	40	46	57	63	52
Ratio of coal produced per life lost	56,000	81,560	92,000	80,000	67,629	75,440
Ratio of persons employed per life lost	187.77	233.26	246.84	238.17	238.22	227.85

TABLE OF COMPARISON.

	England.		Nova Scotia.	Pennsylvania.		Anthr'e Mines.
	1873.	1874.	1874.	1872.	1873.	1874.
Coal produced, in tons, per year	128,544,400	110,713,832	872,720	18,932,205	19,585,178	21,516,245
Number of persons employed	514,149	538,829	4,282	63,000	56,405	61,493
Ratio of coal produced, in tons, to each employee	250	261	203.8	300.5	347	350.41
Number of lives lost each year	1,069	1,056	7	223	264	265
Ratio of coal produced per life lost	133,677	133,251	135,063	85,280	86,551	81,195
Ratio of persons employed per life lost	479	510	611	283.8	249.5	231.7

TABLE NO. 3

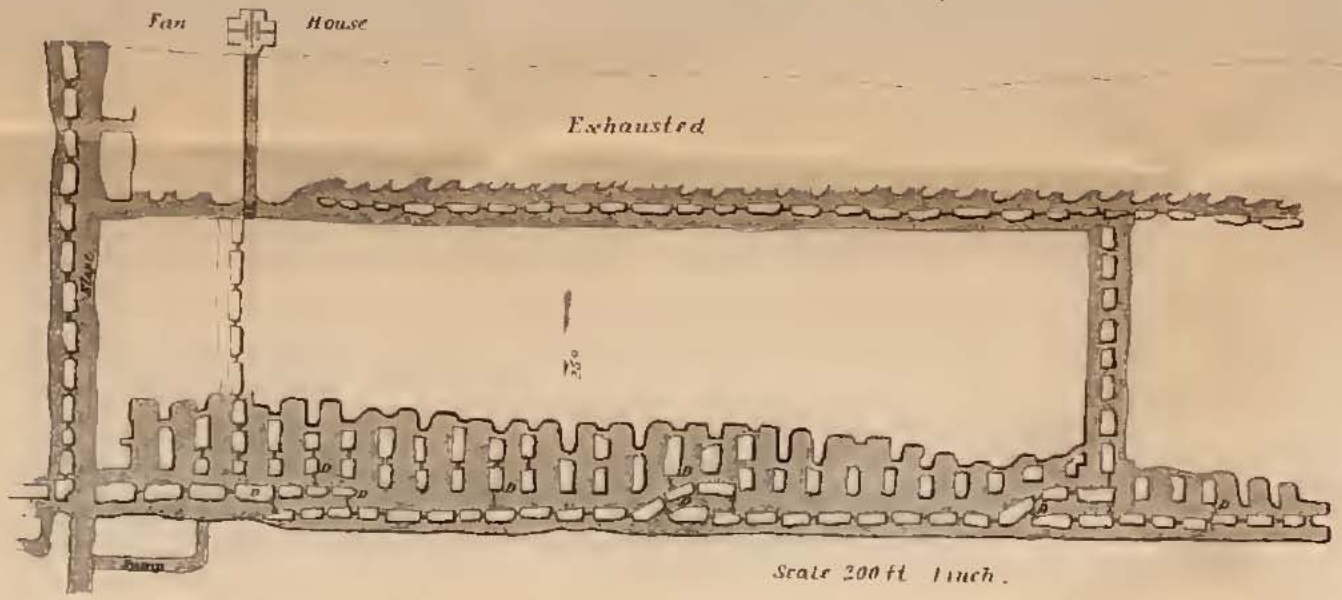
This table shows the number of openings, persons employed, and tons of coal produced for each colliery in the district for 1875.

Name of Colliery.	Names of Owners or Lessees.	No. of drift ...	No. of tunnel.	No. of slope ..	No. of shaft....	No. of breaker	No. of boiler..	Employees. Inside.	Employees. Outside.	Amount of coal produced in tons .....
1. Mocanaqua colliery	Mocanaqua Coal Company	4				1	5			Idle.
2. Paxton colliery	Salem Coal Company	4				1	2	92	63	60,000
3. No. 1 breaker	Susquehanna Coal Company		1	1		1	17	442	237	138,677
4. No. 2 breaker	do. do.	2		1		1	23	415	86	135,077
5. No. 1 shaft	do. do.				1		6	100	24	Not shipping
6. No. 2 shaft	do. do.			1	1		5			
7. Warrior Run colliery	A. J. Davis & Co			2		1	8	43 79	10 59	37,000
8. Franklin colliery	Franklin Coal Company		1	2		1	17	133	111	57,353
9. Hillman colliery	H. B. Hillman & Son			2		1	2	73	21	35,000
10. Maltby colliery	S. C. Maltby		1		2	1	3			Idle.
11. Hutchison colliery	Chas. Hutchison & Co				1	1	12	150	73	72,000
12. East Boston colliery	Wm. G. Payne & Co				1	1	9	161	58	60,831
13. No. 1 shaft colliery	Waterman, Beaver & Co				1	1	10	186	102	93,878
14. No. 2 shaft colliery	do			1	1	1	19	104 241	5 126	33,727 107,026
15. Chauncey colliery	Albrighton, Roberts & Co		1			1	2	64	41	48,000
16. Boston colliery	D., L. and W. Railroad Company,				1	1	12	173	70	134,598
17. Jersey colliery	do. do.		1			1	6	121	77	66,551
18. Avondale colliery	do. do.				1	1	12	193	116	155,875
19. Enterprise colliery	Riverside Coal Company				1	1	11	170	62	46,639
20. Wyoming colliery	do. do.				1	1	12	500	121	142,167
21. Forty Fort colliery	J. H. Swoyer	1			1	1	6	219	53	15,154
22. Hollenback colliery	Elliot, Pool & Co			1		1	3	41	25	26,000
23. Henry colliery	Lehigh Valley Coal Company				1	1	9	159	69	53,000
24. Midvale colliery	do. do.			1		1	6	106	72	30,000
25. Mineral Spring colliery	do. do.			1		1	6	132	80	60,000
26. Prospect shaft colliery	do. do.						10	48	35	22,000
27. Exeter shaft colliery	do. do.				1	1	16	135	108	128,000
28. Ellenwold colliery	Broderick & Co	4			2	1	9	36	28	Not shipping

Plan No 1.

System of double doors, in sections, to protect or keep the air current steady to the faces of all places by

T.M. Williams, Inspector of Mines

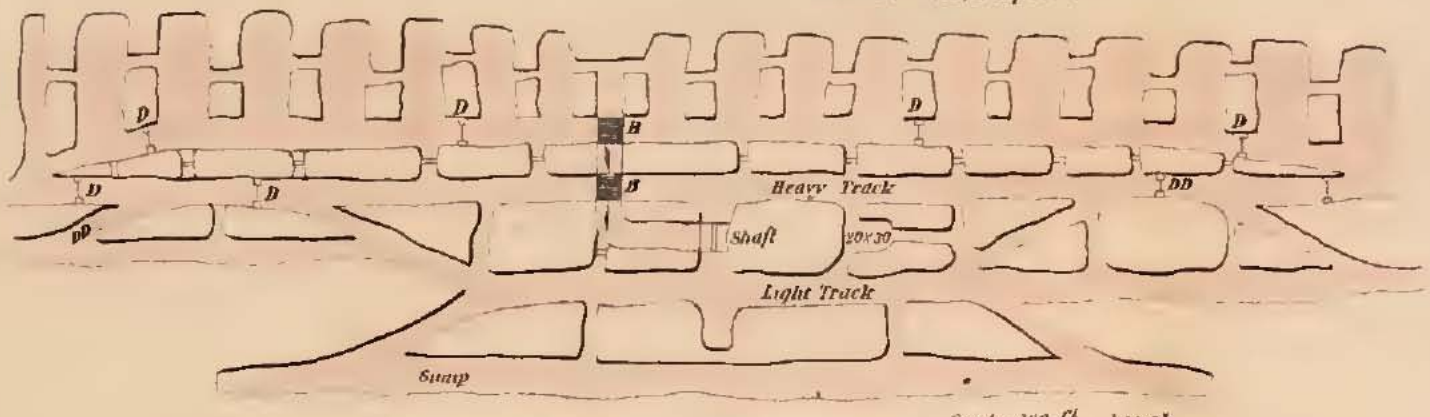


Scale 200 ft 1 inch.

Plan No 2

Improved mode of opening new shaft or slope with proper arrangements of double doors, air crossings &c. by

T.M. Williams, Inspector of Mines.



Scale 100 ft 1 inch

TABLE NO. 3

This table shows the number of openings, persons employed, and tons of coal produced for each colliery in the district for 1875.

29. Oakwood colliery	Lehigh Valley Coal Company				1		12				
30. Harvey mines colliery	Susquehanna Coal Company	1	1			1	17	231	224	88,098	
31. Mill Creek colliery	D. and H. Canal Company			1		1	13	243	104	166,568	
32. Pine Ridge colliery	....do....do				1	1	12	194	71	104,000	
33. Laurel Run colliery	....do....do			1		1	9	170	65	105,145	
34. Baltimore, No. 3, colliery	....do....do			1		1	2 11	178	111	112,101	
35. Baltimore, No. 1, colliery	....do....do		1			1	12	222	104	149,889	
36. Conyngham colliery	....do....do				1		6	51	6	Not shipping	
37. Young's slope colliery	....do....do			1		1				Not shipping	
38. No. 1 Plymouth colliery	....do....do				1	1	12	236	71	47,095	
39. No. 2 Plymouth colliery	....do....do				1	1	12	191	68	80,236	
40. No. 3 Plymouth colliery	....do....do				1	1	12			Not shipping	
41. No. 4 Plymouth colliery	....do....do				1	1	12			Not shipping	
42. No. 5 Plymouth colliery	....do....do				1	1	6	160	78	119,224	
43. No. 1 B. Wanamie colliery	L. and W. Coal Company	2	1	1		1	17	240	273	78,466	
44. No. 2 B. Wanamie colliery	....do....do			1		1	6	197	109	68,265	
45. Espy colliery	....do....do		1	1		1	20	157	122	42,090	
46. No. 1 Jersey colliery	....do....do		1	1		1	8			Not shipping	
47. No. 2 Jersey colliery	....do....do	2				1	4	122	69	38,884	
48. Sugar Notch shaft	....do....do				1	1	17	226	135	86,625	
49. Sugar Notch slope	....do....do			1		1	12	202	112	54,545	
50. Hartford colliery	....do....do		1	1		1	22	341	205	116,193	
51. Empire, No. 4, colliery	....do....do			1		1	6	144	87	60,000	
52. Empire shaft colliery	....do....do				1	1	21	455	161	132,975	
53. Hollenback, No. 2, colliery	....do....do			1		1	10	144	91	55,911	
54. Hollenback, No. 3, colliery	....do....do			1		1	12	217		66,327	
55. Diamond colliery	....do....do				1	1	24	278	187	137,653	
56. Lance colliery	....do....do				1	1	9	186	68	62,989	
57. Dodson colliery	....do....do				1	1	9	254	92	49,440	
58. Gaylord slope colliery	....do....do			1		1	9	205	105	78,665	
59. Nottingham colliery	....do....do				1	1	9	320	144	70,614	
60. Washington colliery	....do....do		1	1		1	8	191	82	73,163	
61. Audenreid colliery	....do....do				1	1	12	175	105	13,000	
62. Empire, No. 2	....do....do				1		6			Not shipping	
63. Empire, No. 7, slope	....do....do			1			4			Not shipping	
64. Hollenback shaft	....do....do				1		3			Not shipping	
65. South Wilkesbarre shaft	....do....do				1		3			Not shipping	
66. Gaylord shaft	....do....do				1		3			Not shipping	
67. Knight's shaft	....do....do				1	1	6				
Totals		20	12	29	37	57	664	10,089	4,919	3,945,614	

TABLE No. 4.—*This table shows the number of fans in use in the district in* 1870.

Number of fan	Name of Colliery.	Amount of natural ventilation in cubic feet per minute	Depth in feet of		Differs in feet	Degrees Fahrenheit of temperature.		Fan diameter in feet	Fan side openings, diameter of		Number of fan side openings	Number of fan revolutions per minute	Amt. of air discharged per min. in cubic feet,	Drag of mines in inches of water-gauge	Closed or open periphery
			Down cast.	Up cast.		Inside.	Outside		Ft.	In.					
1..	No. 2 colliery, W. C. and I. Co				..			10	5	....	2				Closed.
2..	No. 1 colliery, D. & H. C. Co., Ply.,				..	44	19	12	6	....	2	130	108,000	47	..do ...
3..	No. 4 slope, Empire				..			15	7	6	2	....	60,000	2	..do ...
4..	No. 9 shaft, Sugar Notch				..			10	5	....	2	....		....	..do ...
5..	Pine Ridge	(Guibal fan)	400	400	..	53	13	20	10	....	1	78	74,000	1.75	..do ...
6..	Henry	(Propeller fan)	400	400	..			10	5	....	2	....		....	..do ...
7..	Waterman & Co.'s		380	380	..			10	4	....	2	....	15,000	....	..do ...
8..	Fuller's Shaft				..			8	3	....	2	....		....	..do ...
9..	Lance				..			8	3	....	2	....		....	..do ...
10.	Washington	(Iron cased)			..			5	....	....	2	....		....	..do ...
11..	Nottingham		400	400	..			10	5	....	2	....		....	..do ...
12..	Laurel Run	(Iron cased)			..			5	....	....	2	400	12,000	....	..do ...
13..	Mill Creek				..			10	3	....	2	160	116,000	8	..do ...
								10	3	....	2				
14..	Hutchinson				..			10	4	....	2	....		....	..do ...
15..	Avondale	(Revolving disk)	230	230	..	51	22	12	6	....	2	130	62,592	87	Open.
16..	West Pittston		280	280	..			10	4	....	2	....	9,000	....	Closed.

TABLE No. 5.—*This table shows the number of fans erected since* 1870, *also the quantities of air circulating in the collieries, respectively, &c.*

Number of fan	Name of Colliery.	Amount of natural ventilation in cubic feet per minute	Depth in feet of		Differs in feet	Degrees Fahrenheit of temperature.		Fan diameter in feet	Fan side openings, diameter of		Number of fan side openings	Number of fan revolutions per minute	Aut. of air discharged per min. in c bic feet,	Drag of mines in inches of water-gauge	Closed or open periphery
			Down cast.	Up cast.		Inside.	Outside		Ft.	In.					
1..	Hartford							15	7	....	2	60	30,000	....	Closed.
2..	Franklin							12	6	....	2	80	30,000	....	..do ...
3..	Warrior Run					68	61	15	7	6	2	80	41,000	1	..do ...
4..	Laurel Run					52	23	20	....	....	2	78	87,000	1.5	Open.
5..	Nanticoke, No. 1 slope							15	7	6	2	110	57,000	1.5	Closed.
6..	Germania							15	7	6	2	....	20,000	....	..do ...
7..	Sugar Notch							15	7	6	2	....	28,000	....	..do ...
8..	Maffet							12	6	....	1	....	30,000	....	..do ...
9..	Hollenback, No. 2							15	7	6	2	....	30,000	....	..do ...
10..	Hollenback, No. 3							15	7	6	2	85	39,000	....	..do ...
11..	Port Bowkley							15	7	....	2	....	32,000	....	..do ...
12..	Hillman							12	6	....	2	....	18,000	....	..do ...
13..	West Pittston	(Guibal fan)	300	300				21	10	6	1	....	30,000	....	..do ...
14..	Enterprise							15	7	....	2	100	23,400	....	Open.
15..	Nanticoke, No. 2 slope	(Revolving iron disk)						15	7	....	2	85	68,000	....	..do ...
16..	Dodson		280	280				15	7	6	2	....	44,000	....	Closed.
17..	D. and H. C. Co.'s, No. 2		500	500				13	4	6	2	....	30,000	....	..do ...
18..	D. and H. C. Co.'s, No. 5					64	63	13	4	6	2	104	33,000	....	..do ...
19..	Nottingham							15	7	6	2	....	20,000	....	..do ...
20..	Gaylord							15	7	6	2	....	38,000	....	..do ...
21..	Waterman & Beaver Slope	(Revolving disk)						12	6	....	2	....	63,000	....	Open.
22..	Hutchison							15	7	....	2	....	20,000	....	..do ...
23..	Cunningham							20	....	....	2	....	New.	....	..do ...
24..	Empire Shaft							10	5	....	2	....	Ch'ged	....	Closed.
25..	Wanamie, No. 2							15	7	6	2	78	49,000	7	..do ...

TABLE No. 5—CONTINUED.

Number of fan.	Name of Colliery.	Amount of natural ventilation in cubic feet per minute	Depth in feet of		Differs in feet.	Degrees Fahrenheit of temperature.		Fan diameter in feet.	Fan side openings, diameter of—		Number of fan revolutions per minute.	Number of fan side openings.	Amt. of air discharged per min. in cubic feet.	Drag of mines in inches of water-gauge.	Closed or open periphery.
			Down cast.	Up cast.		Inside.	Outside		Ft.	In.					
26..	Wanamie, No. 3 slope				..			15	7	6	68	2	41,000	....	Closed.
27..	Henry	(Guibal fan)	400	400	..			18	9	....	60	1	60,000	....	..do ...
28..	Prospect	(Guibal fan)	600	600	..	52	55	20	10	....	70	1	63,000	1.3	..do ...
29..	Empire Shaft		340	310	30			15	7	6	100	2	54,000	1.6	..do ...
30..	Lance Shaft				..			15	7	6	....	2	42,000	....	..do ...
31..	Mill Creek				..			20	....	....	89	2	75,000	....	Open.
32..	Jersey	(Revolving iron disk)			..			12	6	....	....	2	25,000	....	..do ...
33..	Diamond				..			15	7	6	78	2	53,600	....	Closed.
34..	Sugar Notch				..			15	7	6	90	2	44,000	....	..do ...
35..	Washington				..			24	12	....	54	2	44,000	....	..do ...
36..	Harrey Slope	(Revolving iron disk)			..			17	....	....	78	2	55,000	75	Open.
37..	Grand Tunnel				..			15	7	...	....	2	20,000	....	..do ...
38..	N. J. C. Co.'s, No. 2				..			12	6	....	....	2	15,000	....	Closed.
39..	Franklin Tunnel				..			15	7	6	....	2	25,000	....	..do ...
40..	Enterprise				..		{	15	7	6	{ 100	2	39,000	....	..do ...
							{	15	7	6		2			
41..	Mineral Spring	(Guibal fan)			..			18	9	....	60	1	65,000	....	..do ...
42..	East Boston	(Revolving iron disk)			..			15	7	6	83	2	74,000	....	Open.
43..	Nanticoke, No. 1 tunnel	(Revolving iron disk)			..			24	12	....	70	2	108,000	1.4	..do ...
44..	Sugar Notch, No. 10 slope				..			15	7	6	80	2	25,500	8	Closed.
45..	Espy				..			15	7	6	....	2	25,000	....	..do ...
46..	Wyoming				..		{	15	7	6	80	2	{ 61,000	....	..do ...
							{	15	7	6	80	2			
47..	Exeter	(Guibal fan)			..			20	10	....	1	....	60,000	....	..do ...
48..	Hartford				..			15	7	6	50	2	35,000	....	..do ...
49..	Plymouth, No. 3, D. and H. C. Co.,				..			17	....	....	....	2	New.	....	..do ...

50..	Wanamie, No. 1 slope						15	7	6	2	45	22,000	....	Closed.
51..	Baltimore mines, No. 2 shaft	(Fire department)					17			2				..do ...
52..	Empire, No. 5 slope						15	7	6	2	100	36,000	....	..do ...
53..	Warrior Run, B slope						15	7	6	2	....	30,000	....	..do ...
54..	Baltimore mines, No. 3 slope						17			2	....	34,000	....	..do ...
55..	Baltimore mines, No. 1 slope						17			2	60	40,000	....	..do ...
56..	Paxton, Shickshinny						15	7	6	2	....	New.	....	..do ...
57..	Nanticoke, No. 1 shaft						15	7	6	2				..do ...
58..	Oak-wood Shaft	(Guibal fan)	600	600			30	10	....	1				..do ...
59..	Forty Fort		90	100	10	52	32	15	7	6	2	50	30,000	....	..do ...
60..	Waterman & Beaver, No. 1		380	380				12	6	....	2	....	24,000	....	..do ...
61..	Waterman & Beaver, No. 1.*													
62..	Audenried		900	925	25			15	7	6	2				..do ...
								15	7	6	2				

*New fan, not put in; don't know if completed or not.

TABLE No. 6.—*List of fatal accidents in the Middle District of Luzerne and Carbon Counties for* 1875.

Date.	No. of accident.	Name of colliery.	Name of person killed.	Age.....	Widows.	Orphans.	Cause of accident.
Jan. 5,	1	Prospect colliery ..... [No. 1 slope.	James M'Carty	35	1	....	M'Carty died of wounds received by explosion of gas, which was caused through carelessly entering a place against the orders of the mine boss.
14,	2	Waterman & Beaver,	Thomas Corcoran	31	....	....	Killed almost instantly by fall of slate in chamber.
25,	3	Mill Creek colliery...	Ed. Smith.....	35	1	....	Killed instantly by a fall of coal while working out some other pieces left after a blast.
30,	4	Jersey col., Plymouth	Wm. Knight	13	....	....	Instantly killed; caused by collar of double timber falling upon him, car having struck out one leg while he was on hind end of car with driver.
Feb. 9,	5	Wyoming col., Plainsville.	Mark Carter.....	16	....	....	Killed instantly; head crushed between door, which he was attending, and its jam or frame, caused by a heavy concussion from an explosion of a small quantity of gas in one of the main gangways inside cross-cut.
11,	6	No. 1 shaft, East Nanticoke.	George Simons	28	....	....	Killed instantly; fell into shaft; slipped off a plank and dropped about 200 feet.
24,	7	Henry coll'y, Plainsville.	Patrick Kelly.....	64	1	7	Injured so seriously that he died of his injuries in short time afterwards. Cause: being caught in gearing of elevators in breaker. (Children all grown up.)
March 9,	8	Exeter col., W. Pitts'n	Frank Keller.....	48	1	8	Caught in machinery while oiling, and was instantly killed.
11,	11	No. 3 slo., Balt. mines,	William Colvin	22	...	....	Instantly killed by a fall of slate from roof.
24,	12	Espy colliery..... [Co., Plymouth.	Anthony Rothans	17	....	....	Smothered in dirt shute in coal breaker while attempting to start the dirt in one above him.
27,	13	No. 4 shaft, D. & H. C.	John Oliver	30	1	....	Fell down shaft distance of 40 or 60 feet and was instantly killed.
April 19,	14	No. 3 colliery, Baltimore mines.	Martin Hughes.....	21	....	....	Hughes had his hand so badly injured between cars near breaker that it was amputated, after which time he died of the effects of lock-jaw on the 26th.
30,	15	Pine Ridge colliery...	Thomas Price.....	30	1	2	Instantly killed by a premature blast in rock. He and his partner were taking out of the hole an iron needle at time the charge exploded.
May 11,	16	Espy colliery.....	John Ringnair	38	1	....	Instantly killed by fall of top coal in chamber.
21,	17	Pine Ridge colliery ..	James Ryan.....	15	.....	.....	Killed almost instantly; fell between cars while unhitching his mule.
21,	18	Boston colliery	John Tyrell	33	1	2	Killed instantly by a premature blast in coal. He had ignited his patent squib but did not get time to even turn from the hole ere the blast exploded, resulting in his immediate death.

	22,	19	Audenreid shaft, near Wilkesbarre.	R. Greenough	37	1	2	Greenough and Corp were both instantly killed, caused apparently from the engineer losing control of his engines. There was but one carriage connected to these engines, and that, with the two persons above named upon it, and another who was very seriously injured, had been suspended in the shaft at a point about 760 feet from the surface and about 100 feet from the bottom for about one hour, being held in said position to do some work by the friction brake on the hoisting drum. After that the men had given a signal to be hoisted; the engineer loosened his brake and attempted to hoist, but he stated that after having made the second trial the load began to descend, after which he again applied the brake, but the distance being so short, 100 feet or four revolutions of the drum, he failed to get sufficient control of the drum before the carriage had reached the bottom, there being nearly 900 feet of rope in the shaft. This, together with the weight of carriage, and no counterpoise, caused a momentum sufficient to pull 1½ coils of rope off the drum and break the connections, whereby the whole rope, nearly 1,000 feet, fell upon the men and the carriage. The two men above named were standing upon a platform erected over the canopy or proper cover of the carriage; hence they had nothing to protect them from the falling rope. The third person, being on the lower platform of the carriage, had the protection of the cover; had no bones broken but much bruised from the shock. Mr. Greenough was one of the contractors having the job, being in company with his cousin, Mr. Kendrick.
				Benjamin Corp.....	48	1	2	
June	12,	20	Hollenback col., No. 3, [C. Co., Plymouth.	James Bell, Jr	22	....	....	Instantly killed by fall of rock. A piece of rock broke down two pairs of timber immediately opposite his place of working. It is supposed he was caught while trying to escape.
	21,	21	No. 2 shaft col., D. & H.	D. S. Scaddon	30	1	2	Crushed between mine car and side, causing instant death.
	25,	22	No. 9 col., Sugar Notch	William Ruse	40	....	....	Killed instantly by coals from his own blast, using the patent squib.
	26,	23	No. 1 shaft, D. & H. C. Co., Plymouth.	Ed. Quinn.....	30	....	....	Instantly killed; fell down shaft. He was descending the shaft in the dark, and it appeared as if he walked off into the shaft before reaching the bottom.
	26,	24	No. 2 shaft, Nanticoke,	Thomas Vivian.....	....	....	....	The unfortunate victims of this sad record came to their death by falling down shaft a distance of about 540 feet, and, as found by verdict of a jury, caused through their own imperfect workmanship in not properly securing their timber, upon which their own lives and those of others it was supposed was to depend. Thus happened one of the most heart-rending accidents of the year for want of a little more attention to safety.
				Joseph Richard	....	....	....	
				Thomas E. Williams, ...	....	....	....	
				Peter Reynolds.....	....	....	....	
				Henry King	....	....	....	
				John Hender	....	....	....	
July	9,	25	No. 3 slope, Wanamie,	James Nash	30	1	2	Killed instantly by a fall of coal in gangway.
	17,	26	Diamond coll'y, near Wilkesbarre.	Joseph Fink.....	25	1	2	Injured so badly (crushed between railroad cars under the breaker) that he expired in a few hours.

TABLE No. 6.—CONTINUED.

Date.	No. of accident.	Name of colliery.	Name of person killed.	Age.	Widows.	Orphans.	Cause of accident.
July 21,	27	Grand Tunnel colliery	Isaac J. Davis	36	....	....	Injured so badly by a fall of coal that he died of his wounds on the 24th of same month.
Aug. 4,	28	No. 2 slope, Wanamie,	Wm. Weatherwalk	23	....	....	So seriously injured from burns that he died on the 9th of same month. He was handling powder and a spark from his lamp ignited three-quarters of a keg, causing his death.
10,	29	No. 10 colliery, Sugar Notch.	Michael Lee	12	....	....	Smothered in pea coal shute in breaker. It was supposed that he had fallen asleep at his work.
10,	30	Hutchison col., Kingston, Pa.	Christian Pascoe	52	....	....	Instantly killed by coal from a blast. It appeared that Pascoe's miner had been informed by the miner working the next place that a blast was soon to be fired in a cross-cut driven towards their chamber, and had made arrangements about signals, but by some carelessness or misunderstanding the man Pascoe's life was lost.
12,	31	Exeter colliery, West Pittston.	Michael T. Welch	23	....	....	Injured so seriously by burning from gun powder that he died of his wounds on the 28th.
17,	32	No. 9 shaft, Sugar Notch.	John Lanahan	21	....	....	Killed almost instantly by being crushed between trip of mine cars and side. He had finished his day's labor and attempted to jump upon the cars while in motion.
19,	33	No. 2 shaft, D. & H. C. Co., Plymouth.	Heller Crouse	50	1	....	Heller and another miner named Wasley were doing a foolhardy piece of work, the tamping of a cartridge of powder or forcing of it into the hole with the butt end of their drill, the same being too large for the hole, when it exploded, injuring both so seriously that the former died of his wounds on the 24th of the same month and the latter barely escaped a similar fate.
Sept. 2,	34	Empire shaft, near Wilkesbarre.	Joseph Loyd	50	1	5	Killed instantly by falling into shaft. While the head man was counting ten persons to get upon carriage when it arrived he walked straight past the other men into the shaft and dropped to the bottom, a distance of 310 feet.
7,	35	Forty Fort colliery, near Wyoming.	A. W. Speerey	26	....	....	Instantly killed by falling about 20 feet, breaking his neck, while erecting a head-house at the aforementioned mine.
15,	36	No. 3 tunnel, West Nanticoke.	Martin Jennings	17	....	....	Injured so badly, being crushed by locomotive, that he expired in about two hours afterwards.
17,	37	Audenreid col., near Wilkesbarre.	Peter Quinn	26	....	....	Injured so badly by explosion of gas that he died of his wounds on the 26th while in the city hospital.
20,	38	Wyoming col., Plainsville.	John M'Can	23	....	....	Injured so seriously by fall of coal that he died the same day.

Oct.	4,	39	Midvale coll'y, Plainsville.	Joseph Halder.....	40	1	5	Killed instantly by a blast. It appeared that he had set fire to his match and ran into a cross-cut, but learning that a blast had been ignited in the next chamber he ran back again into his own chamber, when his own blast exploded with the above result.
	6,	40	No. 2 shaft, D. & H. C. Co., Plymouth.	Luke Burke.....	25	....	....	Killed almost instantly, being struck by coals from a blast ignited in the next chamber by John Kane. Burke stated that he had not been notified by Kane that he was going to fire in the cross-cut. Kane, on the other hand, contended he had given warning. Another matter attributed perhaps somewhat to this sad case, that of an insufficient pillar.
	6,	41	No. 1 slope, Nanticoke,	Victor Poland	27	1	....	Killed instantly by a fall of top coal in chamber.
	7,	42	Henry coll'y, Plainsville.	John Henry	....	1	2	Henry and Donahoe were both killed instantly by a fall of rider coal. This sad calamity might have been different had they placed a few pieces of timber for support.
				Daniel Donahoe	....	....	....	
	11,	43	No. 3 slope, West Nanticoke.	Patrick Carney	47	1	3	Killed instantly by a trip of loaded cars on the slope. He was descending to his work, and by some means walked straight to meet the cars. He was an old hand, having assisted in the sinking of the slope; had worked eighteen years in and about the mine.
	16,	44	Diamond coll'ry, near Wilkesbarre.	James Ward.....	36	....	....	Ward and his partner, Thos. Hughes, were so severely injured by explosion of gas that the former died of wounds the following day. The cause of this accident should be attributed to their own carelessness in not attending to their own place in a better manner. Hughes has recovered but is much disfigured.
	25,	45	No. 3 slo., Balt. mines,	Patrick Boyle	15	....	....	Killed instantly by a trip of loaded mine cars outside a head of slope while driving; he slipped and fell under.
Nov.	5,	46	Elliot & Co.'s colliery, Plainsville. [Plymouth.	John Hughes.....	....	1	3	Injured so badly by fall of bone from roof that he died of his wounds the next day at the city hospital. The mine boss had requested him to timber just a short time prior to the accident.
	6,	47	Avondale coll'y, near	William Welch	28	....	....	Killed instantly by a fall of slate from roof.
	11,	48	Henry col., Plainsv'e,	John M'Donald.....	....	1	3	Killed instantly by a fall of rider coal, usually kept up for roof.
	12,	49	Midvale col., Plainsv'e	David Morgan.....	17	....	....	Injured so badly by being caught in machinery in breaker that he died the next day.
Dec.	10,	50	Enterprise col., Plainsville. [ticoke.	Anston Kerrigan	18	....	....	Killed instantly by a mine car running over him; he had attempted to unhitch a mule, but failed and fell under with the above sad result.
	15,	51	No. 2 tunnel, E. Nan-	Christian Rock	45	1	3	Killed instantly by a fall of top coal.
	16,	52	Empire shaft, near Wilkesbarre.	Thomas Davis.....	45	1	6	Fell down shaft and was instantly killed. It appeared that he jumped upon the carriage after the signal had been given by the head-man, and before he had fully got on and balanced himself he was caught by the timber in shaft and pulled through the same, being only about 18 feet from landing.
	22,	53	No. 3 slope, Ashley...	Patrick Tool.....	40	1	5	Killed instantly by a fall of slate from roof.

TABLE No 6 ---CONTINUED.

Date.	No. of accident.	Name of colliery.	Name of person killed.	Age.....	Widows.	Orphans.	Cause of accident.
Dec. 28,	54	No. 3 slope, Ashley...	John Fox.....	12	.....	.....	Killed instantly by coal from a blast ignited by his father. It appeared that his father had taken the youth with him, as he stated, to keep him company, and being about to fire a blast sent him into the next place; the boy did so; whether he carried out the instructions of his father I know not, but his father's blast exploded, and the boy was found in a dying condition.
28,	55	Hutchison coll'y, near Kingston, Pa.	David Foster.....	.....	1	6	Hutchison and Ryan were killed instantly, the former being burned and bruised from an explosion of gas, and the latter from the concussion of the same explosion, striking out a prop, which fell across his neck, and was found with his face in a small pool of water and the piece of timber on him. David Foster was also so seriously injured from the same explosion that he died of his wounds shortly afterwards. Several others were very severely injured the same time. It appeared that these men had been warned not to enter this re-opened mine, as they did; this is the testimony of one of the survivors, besides the mine boss. No gas had been seen in this mine previous to this explosion, except a small feeder cut in one of the chambers some time in 1873, prior to the walling in of this dam. The writer had never heard of even this until subsequent to the catastrophe, but does think that if the mine owner or the men knew of the presence of even the trace of gas in this place they should have expected some after re-opening the same, after letting off the water and admitting of fresh air. No doubt the gas was not explosive when they broke in, and but a small quantity exploded even when it did ignite, simply because it had not been mixed enough with pure air to make more of it explosive. I would here state that the same mine boss is not at the mine now as was prior to building of the water dam; hence it is probable that he knew nothing of the gas feeder aforementioned.
			James Mc. Hutchison,	25	.....	.....	
			Wm. Ryan.....	.....	.....	.....	
29,	56	Nottingham col., Plymouth.	Thomas L. Jones.....	30	1	3	Killed almost instantly by a piece of slate falling upon him. His laborer was also severely injured by the same piece, and Jones had been warned even by his laborer that the slate parting overhead was dangerous shortly before the accident.

TABLE No. 7.—*List of accidents not proving fatal during* 1875 *in the Middle District of Luzerne and Carbon Counties.*

Date.	No. of accident.	Name of colliery and location.	Name of person injured.	Cause of accident.
Jan. 5,	1	Prospect colliery, Plainsville	Joseph Cherry	Severely burned by explosion of gas, whereby his partner lost his life, and all through their own carelessness.
6,	2	Baltimore, No. 1, near Wilkesbarre	John Harity	Slightly burned on face and hands by explosion of gas.
14,	3	No. 3 slope, Baltimore mines	Patrick Jennings ...	Leg broken above the knee by coal rolling upon him in chamber.
25,	4	Nottingham colliery.....	Frank Oliver	Injured seriously; fell down in breaker a distance of 55 feet.
27,	5	Enterprise colliery	Lawrence Devilin ..	Injured quite seriously on head, face and arm from premature blast.
29.	6	Boston colliery	John Cline	Injured very seriously by mine cars; leg since amputated.
Feb. 2,	7	Mill Creek colliery	Tim. Shepperd.....	Burned, slightly, on face and hands by explosion of fire-damp.
1),	8	Enterprise colliery	Michael Watters....	Injured severely by fall of bone from roof, caused by insufficient timber, so reported.
			John Thornton	
18,	9	Stanton slope, near Wilkesbarre..	David Griffith	Injured quite severely; being crushed between mine car and prop.
24,	10	Henry colliery, Plainsville.....	Frank Burk	Severely burned by explosion of gas, caused by disobeying orders of the officers of the mine.
			William Craney	
March 10,	11	No. 3 slope, Baltimore mines	Wirewood Thomas..	Severely burned by explosion of gas; cause of said explosion remains a mystery.
			Jas. M'Donald.....	
12,	12	No. 1 tunnel, Baltimore mines ...	James Keys	Burned on face, hands and back quite severely by explosion of gas.
15,	13	Exeter colliery, West Pittston....	Ed. Davis.....	Burned on face and hands slightly by explosion of gas.
27,	14	Mill Creek colliery, D. & H. C. Co.	George Forey	Severely injured by explosion of a blast in coal. He had fired it and supposing it had missed fire he was returning when it exploded.
April 26,	15	Boston colliery, near Kingston ...	Charles Sparrow....	Injured severely on hips and head by fall of coal.
29,	16	Pine Ridge colliery, D. & H. C. Co.,	James Martin.....	Burned on face and hands by explosion of gas through a carelessness on his own part.
30,	17	Pine Ridge colliery, D. & H. C. Co.,	Thomas Longmore..	Injured seriously same time and place that Thos. Price, his partner, was killed instantly, while they were in the act of taking out of a hole in rock an iron needle, having left their copper needle at home; a dangerous undertaking.
May 6,	18	Empire repair shops, near Wilkes- [barre.	Percival Emerick...	Had finger cut off by a bar of iron falling upon it.
22,	19	No. 2 col., D. & H. C. Co., Plymouth	Thomas Conner.....	Had leg broken by fall of slate or clod overlying seam.
22,	20	Audenreid shaft, near Wilkesbarre	Stephen Mathews...	Injured same time and place that R. Greenough and Ben. Corp were killed. For particulars see list of fatal cases for this date.
June 4,	21	Mill Creek colliery, D. & H. C. Co.,	Charles Daugherty..	Injured severely; kicked by a mule, but no bones were broken.
4,	22	Mill Creek colliery, D. & H. C. Co.,	James Gilgannan ...	Severely injured by cars running over him; his own trip.
17,	23	Gaylord colliery, Plymouth	John S. Thomas	Leg bone fractured by being kicked by mule while taking them to the mines.
21,	24	Diamond col., near Wilkesbarre..	Conrad Bower	Small bone of leg fractured by fall of coal.

TABLE No. 7.—Continued.

Date.	No. of accident.....	Name of colliery and location.	Name of person injured.	Cause of accident.
June 22,	25	Exeter colliery, West Pittston....	Owen Maley	Slightly burned by explosion of fire-damp by neglecting orders of officers.
26,	26	Empire shaft, near Wilkesbarre..	John Thomas. ..... William Joice	Severely burned by explosion of gas, caused, it was supposed, by speed of fan having been reduced before word could be sent to warn them of the same.
30,	27	Pool's colliery, Plainsville.....	James Reynolds....	Leg broken by trip of mine cars running over him.
30,	28	Mill Creek colliery	John Davis	Arm broken; thrown from a mule.
July 1,	29	No. 11 shaft, Lance colliery.....	William Webster...	Leg broken by being struck by mine car on slope.
7,	30	Jersey colliery, near Plymouth ..	John Davis	Leg badly injured by mine cars running on him.
17,	31	Gaylord colliery, Plymouth	Frank Thomas.....	Shoulder blade broken, being struck by prop, which had been knocked out by empty cars.
19,	32	Exeter colliery, West Pittston....	John Daugherty.... Patrick Haley	Daugherty was burned on face and hands, caused by disobeying boss' orders. Haley was also burned on face and hands, not in the same place, caused by entering another place than his own.
21,	33	Midvale colliery, Plainsville ..... [barre.	John Stetler..... August Swanson....	Injured by fall of slate quite severely, breaking Swanson's thigh and dislocating Stetler's ankle, besides other injuries.
23,	34	Empire, No. 3, slope, near Wilkes-	Peter M'Gaun	Injured so badly by fall of coal that one leg had to be amputated.
27,	35	Waterman & Beaver col., Kingston	Thomas Daugherty..	Severely injured by explosion of a blast.
Aug. 4,	36	Franklin col., near Wilkesbarre ..	Ed. Chastley.....	Foot so badly smashed by fall of coal that amputation became necessary.
5,	37	Diamond col., near Wilkesbarre..	Moses Bartrum ..... John Kipple.....	Injured quite severely by mine cars running back upon them while repairing track at foot of slope; drawbolt pulled out, causing the same.
7,	38	Empire, No. 5, slope, near Wilkes-barre.	Thomas Dudlick.... Frank Lynch	Burned severely on face and hands by explosion of gas. They had just cut through from air-way to gangway and while in the face the gas was ignited from the gangway side upon them.
8,	39	Midvale colliery, Plainsville	James Mack.....	Burned on face and hands quite severely by explosion of gas while working for George Gardner.
11,	40	Hartford colliery	Charles Helfrick....	Arm broken by putting it into belt pulley in breaker.
12,	41	Wanamie colliery	Peter Brown.....	Injured severely by jumping upon mine cars while in motion.
16,	42	Pool's colliery, Plainsville.....	Patrick M'Neff	Injured on head and shoulders; fell under mine cars.
16,	43	Exeter colliery, West Pittston....	Charles Gardner... Fred. Wayland....	Burned quite severely by explosion of gas in a gangway.
17,	44	Boston colliery, near Kingston ...	William Miles.....	Leg badly bruised by car passing over him at head of shaft.

Aug.	19,	45	Enterprise colliery, Plainsville...	Benjamin Lewis....	Leg broken; caught between car and prop.
	19,	46	No. 2 shaft, D. and H. C. Co., Ply.	Jno. Wasley.....	Injured, same time and place that Heller Cronse was, by blast—description of in the fatal case list.
	30,	47	Midvale colliery, Plainsville.....	Theo. Young.....	Injured on arm and leg by explosion of a blast; he was returning, as he supposed, to re-touch when it exploded.
	30,	48	Jersey colliery, near Plymouth...	Thos. Luxon.....	Hand badly mashed between top rail of car and roof.
	31,	49	Hartford colliery, Ashley.....	Jno. Blewitt.....	Leg broken by fall of top coal.
Sept.	6,	50	Empire shaft, near Wilkesbarre..	Tudor Williams	Severely injured by a premature explosion of a blast in coal.
	9,	51	No. 3 slope, Baltimore mine.....	Richard Davis	Leg broken by plank falling upon him.
				Chas. Wedlock	Leg broken by being caught between car and side.
	13,	52	Nottingham colliery, Plymouth ..	Michael Cromen....	Ankle-bone fractured by fall of coal.
	15,	53	Audenried col., near Wilkesbarre,	Patrick Brislin.....	Injured on head, and otherwise, from premature explosion of blast.
	17,	54	Audenried col., near Wilkesbarre,	Richard Faul.....	Burned quite severely by explosion of gas, same time and place as
				Patrick Maloy.....	Peter Quinn, who died of his injuries; caused by igniting a small quantity that lodged in a hole in roof over the timber in gangway.
	20,	55	Midvale colliery, Plainsville.....	Thos. O'Brien	Burned on face, hand and back by an explosion of gas, caused by his own fault in disobeying orders.
	21,	56	Dodson colliery, Plymouth.....	Daniel Evans.....	Leg broken and shoulder bruised by fall of bone roof.
	21,	57	Henry colliery, Plainsville	Thos. Hughes.....	Burned from the premature explosion of a blast while tamping the
				Wm. Mulroy	same.
	25,	58	No. 2 shaft, D. & H. C. Co., Ply...	Enoch Jones.....	Leg broken and otherwise injured by fall of bone roof.
	27,	59	Henry colliery, Plainsville	John Tool.....	Arm broken by falling from bridge in column bank.
	28,	60	Exeter colliery, West Pittston....	William Tigue.....	Burned on face and hands quite severely by explosion of gas.
Oct.	5,	61	Exeter colliery, West Pittston....	Chas. Edwards	Hands quite severely burned by explosion of gas.
	6,	62	No. 3 tunnel, West Nanticoke....	Ed. E. Davis.....	Foot severely cut by drill falling upon it.
	6,	63	No. 2 slope, East Nanticoke.....	James Faudutch....	Leg broken by fall of top slate.
	13,	64	Exeter colliery, West Pittston....	Richard Collient....	Seriously injured by fall of rock; left leg fractured, and right severely bruised about ankle-joint.
	16,	65	Diamond shaft, near Wilkesbarre,	Thomas Hughes....	Severely burned by explosion of gas at same time and place as that of Jas. Ward; case described on same date in list of fatal cases.
	18,	66	No. 19 breaker, Wanamie.....	Reuben Stiner.....	Injured quite severely by striking against empty car when jumping off another trip of cars in motion.
	25,	67	Broderick's drifts.....	William Noye.....	Leg broken by fall of slate.
	28,	68	Exeter Colliery.....	John H. William...	Leg broken by fall of rock.
	29,	69	Nottingham colliery.....	Thomas H. Harris ..	Injured very seriously by mine cars; case dangerous.
	30,	70	Forty Fort col., near Wyoming...	Joseph Sobey.....	Arm fractured by rock drill falling upon him out of hoisting bucket while working in second opening shaft.
Nov.	1,	71	Midvale colliery, Plainsville.....	George Phœnix.....	Hands slightly burned from explosion of gas, caused by entering another person's working place against orders.
	4,	72	Hartford colliery, Ashley.....	James Branigan	Hand badly injured by fall of coal; four fingers since imputated.
	9,	73	Mineral Spring, nr. Parson's sta'n	George Wallace.....	Leg broken above the knee, caught between mule and car.
	11,	74	Audenried col., near Wilkesbarre,	James Boyle.....	Shoulder-blade fractured, and otherwise injured by being caught by mine cars.

TABLE No. 7—CONTINUED.

Date.		Age of victim.	Name of colliery and location.	Name of person injured.	Cause of accident.
Nov.	17,	75	Audenried col., near Wilkesbarre,	B. H. Binny.....	Leg fractured, caught between mine car at shaft landing and timber.
	19,	76	Audenried col., near Wilkesbarre,	David Jones..... Wm. C. Williams John Lewis.....	Burned quite severely by explosion of gas, caused apparently from their own carelessness.
	21,	77	No. 18 breaker, Wanamie.....	Henry Vendermark,	Arm badly injured, fell under cars.
	22,	78	No. 3 slope, Hollenback	John G. Thomas....	Leg and breast injured by trip of mine cars catching him.
	27,	79	East Boston col., near Kingston...	Henry Conery.....	Crushed severely between mine car and side.
Dec.	7,	80	Henry colliery, Plainsville	Luke Conner	Burned quite severely by explosion of gas.
	10,	81	Empire, No. 5 slope.....	Henry Parry..... Stephen Maloney...	Both injured by mine car; the former had his arm broken and one finger cut off.
	13,	82	No. 2 slope, Wanamie.....	Philip Tracy.....	Leg broken, caught between mine car and side.
	15,	83	No. 3 slope, Frank mines.....	William Dobson....	Leg broken, caught between mule and mine cars.
	17,	84	Pine Ridge colliery.....	Joseph Moore.....	Burned by explosion of gas, while putting up brattice.
	29,	85	Nottingham colliery.....	Michael Maloney...	Injured by fall of slate; same time and place as Thos. L. Jones, his partner, who was killed by the same piece.—See particulars in list of fatal cases of the same date.
	30,	86	Diamond col., near Wilkesbarre..	Lewis Miller.....	Arm fractured, and otherwise injured by fall of coal.

REPORT

OF THE INSPECTOR OF COAL MINES OF THE WYOMING COAL FIELD, LYING EAST OF AND INCLUDING JENKINS TOWNSHIP, FOR THE YEAR 1875.

His Excellency, JOHN F. HARTRANFT,
Governor of the Commonwealth of Pennsylvania:

SIR:—In compliance with the requirements of an act of the General Assembly, approved the third day of March, A. D. 1870, providing for the health and safety of persons employed in coal mines, &c., I have the honor to herewith submit my report for the year ending the 31st day of December, 1875.

The total number of casualties in the year 1874 was 158, 69 deaths and 89 accidents; and in 1875 was 164, 62 deaths and 102 accidents, which were not fatal, showing a decrease of 7 deaths and an increase of 13 accidents in 1875.

The total number of tons of coal mined in the year 1874 was 6,357,879. There was one death to every 92,143 tons of coal mined, one widow to every 167,313 tons of coal mined, one orphan to every 56,767 tons of coal mined, and one accident to every 40,229 tons of coal mined. The total number of tons of coal mined in 1875 was 7,956,452. There was one death to every 128,330 tons of coal mined; there was one widow to every 221,012 tons of coal mined, one orphan to every 67,428 tons of coal mined, and one accident to every 78,004 tons of coal mined.

By reference to the tabulated tables annexed you will find all other matters of interest detailed in full.

Respectfully submitted.

PATRICK BLEWITT,
Inspector of Coal Mines.

TABLE No. 1.—*List of deaths reported to the Inspector of the Eastern District of the Wyoming Coal Fields, Luzerne county, State of Pennsylvania, and the cause as shown by his investigation for the year ending 31st day of December, A. D. 1875.*

Date.	Names.	Age.	Married or single	Wife	Children	Colliery where accident occurred.	Date of investigation.	Nature or cause of death.
Jan. 11..	Michael Earle	15	....	....	....	Pine Brook colliery	Jan. 11,	Killed instantly whilst trying to sprag a car.
11..	Dominick Boland	28	M.	W.	4	Twin shaft colliery	12.	Killed instantly by a fall of roof.
23..	Edward Hart	48	M.	W.	3	No. 4 shaft colliery	25.	Killed instantly by a fall of top coal.
27..	Thomas Filson	35	M.	W.	3	Central shaft colliery	29.	Seriously injured by a fall of roof. Died five hours after.
29..	Michael Healy	45	M.	W.	5	Everhart colliery	Feb. 2.	Killed instantly by a fall of rock roof.
30..	John M'Kenna	25	M.	W.	1	No. 12 shaft colliery	1.	Killed instantly by a fall of top coal.
Feb. 5..	Valentine Phillips	40	M.	W.	3	Meadow Brook colliery	10.	Severely burned by an explosion of powder, from the effects of which he died two days after.
10..	Richard Gill	29	S.	....	....	Shaft, No. 10, Pittston	12.	Killed instantly by a fall of roof.
25..	John Hull	25	M.	W.	....	Continental colliery	27.	Seriously injured; received a large scalp wound from a fall of rock. Died next day.
27..	Patrick O'Hara	17	....	....	....	No. 4 colliery, Pittston	Mar. 2.	Killed by falling over a trestleing whilst playing with some boys.
Mar. 4..	Thomas Maher	16	....	....	....	Continental colliery	5.	Seriously injured by the culm car pin breaking in the rear of the car, letting the car dump, which caught his head on the rail, fracturing his skull. He died next morning.
9..	Henry Walsh	16	....	....	....	Mount Pleasant colliery	10.	Killed by being caught in the screens.
9..	John Owens	16	....	....	....	.....do.....do.....	10.	Killed by being caught in the screens whilst rescuing the former.
10..	Peter Gallagher	53	M.	W.	7	Hampton colliery	12.	Killed by an explosion of a blast.
11..	Martin Feeny	45	M.	W.	8	Dodge colliery	12.	Seriously injured by a fall of roof, from the effects of which he died 3 days after.
16..	John Moran	40	M.	W.	7	Von Storch colliery	18.	Killed by a fall of roof.
23..	James Smith	19	....	....	....	Everhart colliery	24.	Killed by being run over by a large railroad car.
25..	John Nicholas	38	M.	W.	5	Meadow Brook colliery	29.	Seriously injured by a fall of blacksmith coal. Died April 1.
31..	John Scoonover	50	M.	W.	4	Green Ridge colliery	April 1,	Seriously injured by a fall of roof, from the effects of which he died twelve hours after.
Apr. 19..	John Narry	40	M.	W.	5	Von Storch colliery	21.	Killed by a fall of top coal.
22..	Anthony Kinny	25	M.	W.	2	Tompkins colliery	24, May 1	Killed by a fall of rock.
21..	Martin M'Tighe	48	M.	W.	6	Butler shaft colliery	Apr. 26.	Killed by a fall of top coal.
May 6..	Michael Coolican	21	S.	....	....	Eaton & Co.'s colliery	May 7.	Killed by a fall of top coal.
15..	John John	24	M.	W.	1	Von Storch colliery, Diamond vein	16.	Killed instantly by going back to his chamber too quick after lighting his match.
22..	Thomas Evans	24	S.	....	....	Scranton Coal Company's mine	24.	Seriously injured by falling down an air-shaft that is now being sunk. Died two hours after.
June 5..	Jacob Morgan	18	S.	....	....	Central shaft	June 7.	Seriously injured by a premature blast, from the effects of which he died two hours after.
7..	John D. Murphy	35	M.	W.	....	Eddy Creek shaft	12.	Seriously injured by a premature blast, from the effects of which he died next day.
7..	Anthony Walsh	48	M.	W.	5	Stark shaft	8.	Killed instantly by a premature blast.
7..	Wm. James	14	S.	....	....	Sloan shaft	7.	Seriously injured by a trip of cars running over him, from the effects of which he died ten hours after.
12..	John Hughes	45	M.	W.	....	Cayuga shaft	14.	Killed by a fall of top coal.
25..	Dennis Costello	26	S.	....	....	No. 12 shaft, Pleasant Valley	25.	Killed by a fall of roof.
July 2..	Patrick Diskin	35	M.	W.	4	Dodge Colliery	July 3.	Killed by a fall of roof.
15..	John Kelly	20	S.	....	....	Powderly slope	17.	Arm badly broken by a fall of roof, from the effects of which he died on the 24th.
17..	Edward Barrett	25	M.	W.	1	No. 10 shaft, 7-foot vein	19.	Seriously injured by a fall of top coal, from the effects of which he died eleven hours after.

uly 19..	Michael Kilhoran	45	Wr	....	1	Cayuga shaft	July 21,	Seriously injured by a fall of roof, from the effects of which he died two hours after.
21..	David J. Evans	....	....	....	....	Mount Pleasant	22 & 23,	Killed by an explosion of fire-damp.
30..	Michael Swift	18	....	....	....	White Oak colliery	31.	Killed by a run-away trip of cars in the mines.
Aug. 2..	Patrick Noonan	27	M.	W.	3	Butler colliery	Aug. 4,	Seriously injured by a fall of slate, from the effects of which he died on the 16th.
6..	Patrick Cook	26	S.	....	....	White Oak colliery	7.	Killed by a fall of top coal.
11..	Evan Davis	21	S.	....	....	Mount Pleasant colliery	14,	Killed by a run-away car on the slope.
11..	David Owens	19	S.	....	....	do do	14,	Killed by a run-away car on the slope.
11..	Thomas Sturrett	16	....	....	....	do do	14,	Killed by a run-away car on the slope.
17..	John M. Kennedy	58	M.	W.	....	Valley Tunnel colliery	18,	Seriously injured by a piece of coal from a blast, from the effects of which he died.
Sept. 4..	Anthony Farrell	15	S.	....	....	Erie colliery	Sept. 6,	Killed by getting his head caught between the bumpers of two cars.
11..	Bartholomew Mulligan	35	S.	....	....	do	13,	Killed by a fall of top coal.
18..	Dominick M'Andrew	30	M.	W.	3	Stark colliery	20,	Killed by a premature blast. } Both killed by same blast.
18..	David Bourk	30	M.	W.	1	do	29,	Killed by a premature blast. }
Oct. 12..	John O'Connor	19	M.	W.	....	Central shaft colliery	18,	Injured by a car running off the track. Not supposed serious when it first occurred, as it was only a flesh wound, but mortification set in, causing his death on the 19th.
19..	Benjamin Jones	15	S.	....	....	Tripp's slope	20,	Killed by a run-away car coming down the slope, caused by chain breaking, killing him.
29..	Wm. R. Price	54	M.	W.	4	Pine Brook shaft	29,	Killed by a blast set off by himself.
30..	Philip Murray	17	S.	....	....	No. 10 shaft	Nov. 1,	Seriously injured by getting hit by a piece of coal from a blast. Died seven hours after.
Nov. 1..	Thomas Henshall	55	M.	W.	4	No. 7 shaft	1.	Killed instantly by a fall of roof.
10..	Thomas Manghan	23	S.	....	...	No. 5 shaft	10.	Killed by a fall of black rock roof.
25..	John Berry	30	M.	W.	1	Leggett's Creek	27,	Seriously injured by a fall of coal whilst mining out a blast. Died eleven hours after.
26..	Michael Eagen	30	M.	W.	2	No. 10 shaft, Pittston	28.	Killed by a fall of rock roof.
Dec. 8..	Wm. Lynott	50	M.	W.	6	No. 9 shaft, Pittston	Dec. 8,	Seriously injured by an explosion of fire-damp, from the effects of which he died 21 hours after.
13..	James M'Kenzie	60	M.	W.	3	Law shaft	14.	Killed by an explosion of fire-damp.
13..	Michael Corby	55	M.	W.	....	Diamond shaft	15.	Killed by being caught in the pony rolls.
22..	John E. Cosgrove	39	M.	W.	6	Tompkins colliery	21.	Killed by a fall of bony coal roof.
24..	Noah Morgan	72	M.	W.	....	Mount Pleasant	24.	Killed by getting hit by a rail on the outside plane.
28..	Daniel M'Collough	50	M.	W.	10	Hampton	28,	Killed whilst looking down the shaft by a descending carriage.
29..	John Moran	16	....	....	....	Phœnix	30.	Seriously injured by being caught between two cars. Died three hours after.

Deaths	62
Widows	36
Orphans	118

Killed by cars	12
Blasts	10
Falls of roof	18
Falls of coal	11
Powder explosion	1
Falling off trestle	1
Caught in screens	2
Falling down shaft	1
Explosion of fire-damp	3
Pony rolls	1
Getting hit by a rail	1
Getting hit by a carriage	1
	62

There was one death to every	128,330	tons of coal mined.
There was one widow to every	221,012	" "
There was one orphan to every	67,428	" "

TABLE No. 2.—*List of accidents reported to the Inspector of the Eastern District of the Wyoming Coal Fields, Luzerne county, State of Pennsylvania, and the cause as shown by his investigation for the year ending 31st day of December, A. D. 1875.*

Date.	Names.	Age	Married or single	Wife	Children	Colliery where accident occurred.	Date of investigation	Nature or cause of accident.
Jan. 15..	Thomas Connelly	18	S.	....	....	Dodge colliery	Jan. 18,	Leg broken by slipping under a loaded car.
19..	John Kilpatrick	46	M.	W.	3	Coal Brook colliery	22,	Leg broken by a fall of rock roof.
29..	Thomas Healy	19	S.	....	....	Von Storch colliery	30,	Leg broken by falling under a coal car on the top of shaft.
Feb. 1..	Bernard O'Hora	....	....	....	....	White Oak colliery	Feb. 3,	Arm broken by a fall of coal.
1..	William Loftus	17	....	....	....	Diamond colliery	1,	Seriously injured by being squeezed by cars.
3..	Thomas J. Evans	32	M.	W.	3	Spring Brook colliery	5,	Seriously injured by a fall of roof.
3..	Thomas Murtaugh	26	M.	W.	1	Von Storch colliery	5,	He was making a cap for a prop with an axe, the axe caught in something, hitting him.
5..	Benjamin Lewis	40	....	....	....	Continental colliery	6,	Leg broken below the knee by a fall of top coal.
11..	John Donahue	16	....	....	....	Ravine colliery	11,	Ankle dislocated by a mule falling upon it.
15..	Wm. Fanning	47	....	....	....	Butler colliery	—,	Hip dislocated by a piece of coal from a blast.
19..	Charles Winebrake	14	....	....	....	Diamond colliery	—,	Injured by being squeezed between cars and pillars.
22..	Louis Jenkins	35	M.	W.	4	Sloan colliery	23,	Seriously injured by a fall of top coal.
24..	Peter Walker	35	M.	W.	3	Roaring Brook colliery	25,	Seriously injured by a fall of bony coal.
24..	William Williams	19	....	....	....	Diamond colliery	25,	Seriously injured by being run over by cars.
24..	Thomas Barrett	25	....	....	....	..... do	25,	Seriously injured by a fall of roof.
26..	Charles Shotto, Jr	....	....	....	....	Winton colliery	Mar. 3,	Seriously injured by an explosion of powder.
Mar. 9..	Thomas M'Andrew	25	....	....	....	Von Storch colliery	9,	Collar bone broken by a fall of roof.
10..	Thomas Davis	43	M.	W.	8	Hampton colliery	11,	Seriously injured by a fall of roof.
20..	Thomas Roderick	15	....	....	....	Central colliery	20,	Hip broken by being jammed between cars and pillars.
22..	Frank Reading	67	S.	....	....	No. 2 shaft colliery	23,	Leg broken by a fall of roof.
26..	John Boland	12	....	....	....	Green Ridge colliery	26,	Leg amputated by a culm car running over it.
27..	Patrick Tyrell	16	....	....	....	Dodge shaft colliery	30,	Seriously injured by being run over by a car in the mines.
31..	Wm. Dempster	....	....	....	....	Tomkins' colliery	Apr. 1,	Knee pan broken by a piece of coal falling whilst taking the powder out of a hole that missed fire.
31..	Austin Ginley	....	....	....	....	..... do	1,	Badly burned by powder igniting whilst he was drawing powder out of a hole he was cleaning out, which missed fire. Both of these men got hurt together.
April 1..	John Nallin	....	....	....	....	Meadow Brook colliery	3,	Leg broken by a mule stepping on it whilst taking him to the barn.
5..	William Bourke	17	....	....	....	Greenwood colliery	6,	Seriously injured by being run over by a locomotive.
9..	Richard Sturbridge	30	S.	....	....	No. 2 Diamond colliery	9,	Leg broken by a fall of top coal.
14..	Edward Dougherty	23	S.	....	....	Fair Lawn colliery	14,	Seriously injured by being burnt by a keg of powder exploding whilst putting a wick in his lamp.
15..	James Greely	14	....	....	....	Scranton Coal Company's mines	16,	Seriously injured by being caught between two cars.
17..	Mike M'Carthy	21	S.	....	....	Sloan colliery	17,	Leg broken by a fall of rock roof.
22..	Thomas Cardin	....	....	....	....	No. 10 shaft colliery	23,	Leg broken by a fall of roof.
22..	James Jordan	16	....	....	....	Leggitt's Creek colliery	22,	Injured by being hit by a piece of coal from a blast, fired while he was in a chamber that was not working, injuring him severely.
24..	John Flynn	28	S.	....	....	Grassy Island colliery	29,	Seriously injured by a fall of roof.
26..	Henry Bath	38	M.	W.	2	Ravine colliery	28,	Injured by a fall of top coal.
27..	Daniel M'Gowan	40	M.	W.	3	White Oak colliery	29,	Arm broken by a fall of top coal.
28..	Patrick Murphy	27	M.	W.	5	Oxford shaft colliery	30,	Injured by being hit by a piece of coal from a blast.
29..	John Hunt	30	S.	....	....	Powderly slope colliery	30,	Injured by a fall of roof.
30..	Larry Toole	....	....	....	....	Greenwood colliery	May 3,	Injured by a fall of top coal.
30..	Michael Shenan	29	S.	....	....	Pine Brook colliery	3,	Injured by being hit by a piece of coal from a blast.
May 4..	James Jones	32	M.	W.	1	Cayuga shaft colliery	5,	Severely injured by a fall of top coal.

TABLE No. 2—CONTINUED.

Date.	Names.	Age.	Married or single	Wife	Children	Colliery where accident occurred.	Date of investigation.	Nature or cause of accident.
May 6..	Reese Davis	45	M.	W.	9	Sloan shaft colliery	May 8.	Leg broken by a fall of top coal.
8..	Wm. S. Davis	12	M.	W.	5	Continental shaft colliery	10.	Leg broken by a fall of top coal.
12..	Martin O'Hora	18	S.	....	....	Archbald shaft colliery	14.	Arm broken by a mule jerking him against a door in the mine.
15..	George Thomas	40	....	....	....	....do	17.	Badly cut on right arm and shoulder by a fall of top coal.
15..	Wm. Bradburry	36	....	....	....	Carbon Hill colliery	18.	Badly cut, but no bones broken, by a fall of top coal.
19..	Richard Lamb	45	M.	W.	....	Oxford shaft colliery	20.	Leg broken and head cut by falling off the carriage down the shaft.
21..	Rodger Finnerty	55	M.	W.	5	Eaton colliery	21.	Face and hands burned by an explosion of powder.
24..	Reese Lloyd	45	M.	W.	3	Sloan shaft colliery	25.	Leg broken whilst getting away from a blast.
25..	Richard Jones	48	M.	W.	....	Grassy Island colliery	26.	Face and hands burned by an explosion of powder.
28..	Thomas Griffith	28	M.	W.	....	Taylor shaft colliery	29.	Collar bone broken. He would not get out of the way of a mine car when told.
29..	Thomas Jones	13	....	....	....	Von Storch colliery	31.	Leg broken by a door falling on it.
June 1..	Patrick Clifford	....	....	....	....	No. 10 shaft colliery	June 2.	Leg broken by a fall of rider coal.
4..	Patrick Nolan	16	....	....	....	Fair Lawn colliery	4.	Leg broken by falling 20 feet whilst oiling the breaker machinery.
4..	Michael Coyne	60	M.	W.	5	National colliery	9.	Injured severely; two ribs broken and hip dislocated by a fall of rock.
4..	James Ruane	17	S.	....	....	Meadow Brook colliery	9.	Leg broken by a mine car running over it.
10..	Thomas O'Donnell	23	S.	....	....	Oxford shaft colliery	10.	Leg broken by a fall of roof.
10..	Peter Gundlock	58	M.	W.	3	Tripp's slope colliery	11.	Injured by a fall of roof.
17..	Isaac Edmunds	....	....	....	....	Meadow Brook colliery	19.	Hands burned by an explosion of powder whilst making a cartridge.
22..	Patrick M'Andrews	28	M.	W.	....	Diamond shaft colliery	23.	Arm fractured by a fall of top coal.
24..	James Lyons	16	....	....	....	Hillside colliery	25.	Both legs broken by being run over by a mine car.
25..	Thomas Rowny	33	S.	....	....	Dodge colliery	28.	Leg broken; got hit by a piece of coal from a blast.
28..	W. H. Watley	14	....	....	....	Leggitt's Creek colliery	29.	Face, hands and back badly burned by an explosion of fire-damp.
July 1..	John Healy	....	....	....	....	Meadow Brook colliery	July 2.	Arm broken by getting hit by a piece of coal from a blast in the cross entrance driving towards his chamber.
3..	Patrick Mally	45	M.	W.	8	Leggitt's Creek colliery	7.	Nose broken and badly cut about the head by a kick from a mule.
3..	David Jones	14	....	....	....	Meadow Brook colliery	8.	Burned badly by an explosion of powder whilst stealing it.
7..	John Watkins	....	Wr	....	1	Scranton Coal Company's colliery	9.	Badly cut about the face; the powder ignited whilst cleaning out a hole that had missed fire a few minutes before.
8..	Charles Parry	17	S.	....	....	Ontario colliery	10.	Seriously injured about the hips by being squeezed between two cars.
16..	Patrick Flatherty	13	....	....	....	White Oak colliery	17.	Left arm and right hand broken by a car running over him.
19..	Patrick Mulderig	50	M.	W.	6	No. 4 shaft colliery	20.	Both arms broken by a fall of top coal.
24..	Patrick Corcoran	....	....	....	....	Winton colliery	28.	Leg broken by being run over by an empty car outside.
27..	Thos. M'Hale	....	....	....	....	Fler's slope colliery	29.	Face and hands severely burned by an explosion of powder.
27..	Wm. Bennett	....	....	....	....	....do	29.	Face and arms badly burned by an explosion of powder.
Aug. 9..	John Differs	14	....	....	....	Taylor colliery	10.	Wrist disjointed by falling off a trestling 14 feet high.
19..	Thomas Murphy	21	S.	....	....	Cayuga colliery	21.	Seriously injured by a fall of top coal.
21..	Daniel Beynon	25	S.	....	....	Central colliery	23.	Seriously injured by a fall of top coal.
21..	James Gallagher	20	S.	....	....	Von Storch colliery	24.	Leg amputated by a fall of top coal.
21..	John Moran	13	....	....	....	Tompkins' colliery	24.	Leg and arm broken by a fall off the trestling 20 feet in height.
23..	Michael Noon	....	....	....	....	Green Ridge colliery	23.	Severely cut about the head by a blast which he thought missed fire.
25..	Thomas Sullivan	....	....	....	....	Forrest Tunnel colliery	25.	Severely injured by a fall of roof.
27..	Florence Sullivan	30	S.	....	....	Taylor shaft	28.	Head cut and severely bruised by a fall of coal.
27..	William Durkin	....	....	....	....	No. 5 shaft	31.	Leg broken by a fall of roof.
31..	Daniel Kelaher	....	....	....	....	Pine Brook shaft	Sept. 1.	Leg broken by a fall of coal.
Sept. 1..	Timothy M'Nulty	44	M.	W.	8	No. 7 shaft	4.	Seriously injured by a fall of rider coal.
15..	Patrick Gallagher	40	M.	....	....	Grassy Island shaft	17.	Breast bone broken by a fall of top coal.

Sept.	18.	Ed. Evans	10	M.	....	....	Grassy Island shaft	Sept. 21,	Leg broken by a fall of bony coal.
	27.	Howell Jones	17	S.	....	....	Continental shaft	30.	Both legs broken by a fall of roof.
Oct.	1.	Hugh Pace	38	M.	W.	3.	No. 5 shaft	Oct. 5,	Hip dislocated and rectum injured.
	1.	Wm. Faircloth	....	....	....	....	No. 9 shaft	6,	Arm broken by a blow from a hammer.
	8.	Thos. Twaddle	....	....	....	....	Eddy Creek	9 & 11,	Ribs broken and otherwise injured by being caught between a car and prop.
	19.	Michael Kelly	....	....	....	....	Tripp's slope	20,	Seriously injured by chain breaking on slope, letting car come down, hitting him.
	22.	Wm. Loftus	....	....	....	....	....do	25,	Leg badly injured by a fall of top coal.
Nov.	1.	Peter Flynn	....	....	....	....	Brisbin colliery	Nov. 3,	Seriously injured by a premature blast.
	9.	Michael Lane	....	....	....	....	Eaton	9,	Seriously injured by falling down the shaft.
	12.	John Coulter	40	S.	....	....	Hillside	15,	Seriously injured by a fall of coal.
	12.	Thomas Grant	32	M.	....	....	Archbald	13,	Foot bruised by a fall of roof.
	15.	Oscar Grambs	13	....	....	....	Hampton	18,	Leg broken and arm dislocated by falling before a car.
	25.	John Noon	....	....	....	....	No. 6 shaft, Jenkins township	26,	Leg broken by a piece of top coal whilst prying it down.
Dec.	1.	Patrick O'Doud	38	M.	W.	4	No. 3 shaft, Carbondale	Dec. 3,	Wrist broken by a premature blast.
	4.	Frederick Jones	40	M.	W.	....	Von Storch	4,	Leg broken by a fall of roof.
	8.	Martin Welsh	....	....	....	....	Eddy Creek shaft	8,	Seriously injured by a premature blast.
	23.	Thomas Dee	59	M.	W.	6	Elk Hill	23,	Foot smashed by a car running over it on the culm dump.
	30.	James Laird	28	M.	W.	3	Phœnix	30,	Arm broken by a piece of coal falling down the shaft on it.

Total number of accidents not resulting fatally, 102.
There was one accident to every 78,004 tons of coal mined.
There were 27 persons who had one leg broken.
There were 8 persons who had one arm broken.
There were 2 persons who had both arms broken.
There were 2 persons who had both legs broken.
There were 4 persons who had one hip dislocated.
There was 1 person who had one hip dislocated.
There was 1 person who had one ankle dislocated.
There were 2 persons who had their collar bones broken.
There were 2 persons who had one leg amputated.
There was 1 person who had his legs and arm broken.
There was 1 person who had his breast bone broken.
There was 1 person who had his wrist disjointed.
There were 9 persons who were seriously injured by cars.
There were 8 persons who were seriously injured by falls of roof.
There were 13 persons who were seriously injured by falls of coal.
There were 10 persons who were seriously injured by powder explosions.
There were 5 persons who were seriously injured by premature blasts.
There was 1 person who was seriously injured by falling down a shaft.
There was 1 person who was seriously injured by a chain breaking on the slope.
There was 1 person who was seriously injured by an explosion of fire-damp.
There was 1 person who was seriously injured by being kicked by a mule.
There was 1 person who was seriously injured by being hit by an axe.

TABLE No. 3.—*A tabulated report of the condition of the coal mines in the Eastern kins township, for the year ending*

Number of coal mine or colliery.....	Name of Coal Mine and Colliery.	Name of Township, City or Borough where Located.	By whom Operated.	What is the size of intake?.....
1,	No. 2, or Port Griffith	Jenkins township	Pennsylvania Coal Company	100
2,	Everhard	do	Everhart Coal Co	100
3,	No. 6 Shaft	do	Pennsylvania Coal Co	100
4,	No 5 Shaft	do	do	110
5,	No. 11 Shaft	do	do	110
6,	No. 7 Shaft	do	do	100
7,	No. 4 Shaft	Pittston borough	do	100
8,	No. 4 Slope	Jenkins township	do	54
9,	New No. 1 Shaft	Pittston township	do	
10,	Tompkins'	Pittston borough	Alva Tompkins	40
	do	do	do	
11,	No. 1 Slope and Tunnel	do	Pennsylvania Coal Co	42
12,	No. 9 Shaft	do	do	100
13,	No. 10 Shaft	Pittston township	do	100
	do	do	do	100
14,	No. 8 Shaft	do	do	220
15,	No. 6 Slope	do	do	160
16,	Seneca Slope	Pittston borough	Pittston Coal Co	100
	do	do	do	100
17,	Ravine Shaft	do	do	160
	do	do	do	This
18,	Beaver	do	Waterman & Beaver	48
19,	Rock Hill	do	Bowkley & Son	56
20,	Twin Shaft	do	Pittston Coal Co	100
	do	do	do	This
21,	Phœnix	Pittston township	J. B. Hutchison	192
22,	Columbia	do	Grove Bros	84
23,	Butler	do	Butler Coal Co	368
24,	Ontario	Pleasant Valley borough	Luzerne Coal and Iron Co	70
	do	do	do	
	do	do	do	
25,	Hillside	do	Hillside Coal and Iron Co	144
26,	do	do	do	
	Heidelburg	do	do	
27,	New Shaft at No. 10	Pittston township	Pennsylvania Coal Co	140
28,	Brown's	Pleasant Valley borough	do	38
29,	Dawson	do	do	120
30,	Stark	Lackawanna township	do	50
31,	Spring Brook	do	Glenwood Coal Co	84
32,	do	do	do	84
33,	Carbon Hill	Old Forge township	do	140
	do	do	do	140
	do	do	do	48
34,	Sibley	do	Elliot, Kernen & Co	100
35,	Pyne	Lackawanna township	Del., Lacka. and W. R. R. Co	98
36,	Taylor Shaft	do	do	56
	do.. Drift	do	do	48
37,	Corey Breaker, No. 4	do	Lacka., Susq. Coal & Iron Co.,	48
	do No. 8	do	do	54
	do No. 10	do	do	54
38,	Greenwood	do	do	112
39,	National Anthracite	City of Scranton	Wyoming Val. R. R. & C. Co.	54
	do	do	do	
40,	Meadow Brook	do	Wm. Connell & Co	63
	do No. 3	do	do	112
	do No. 4	do	do	63
41,	Stafford Brook	do		
42,	Scranton C. Company	Lackawanna township	Del., Lacka. and W. R. R. Co	210
	do	do	do	210
43,	Dodge	do	do	210
	do	do	do	210
44,	Bellevue Shaft	do	do	180
45,	do Slope	do	do	98
	do Slope	do	do	98
46,	Oxford	City of Scranton	do	48
	do	do	do	48
47,	Central	do	do	140
48,	Sloan	Lackawanna township	do	98
49,	Archibald	do	do	
	do	do	do	270
50,	Continental	do	do	56
	do	do	do	140
51,	Hampton	do	do	162

district of the Wyoming coal-fields, Luzerne county, lying east of and including Jen- 31st day of December, A. D. 1875.

MODE OF VENTILATION.	Condition of ventilation	Number of shafts	Number of slopes	Number of tunnels	Number of breakers	Number of screens and shutes	Is there a second opening?	Number of persons employed in the mines	Number of persons employed outside	Number of tons of coal mined
Steam jet	Good		1			1	Yes,	82	15	57,197
Furnace	"		1	1	1		"	91	54	76,945
Steam jet	"	1			1		"	112	39	84,145
Natural	"	1					"	103	40	95,371
....do	"	1					"	72	28	55,936
Fan 17 dia. by 4½ face	"	1				1	"	135	25	107,003
....do....do	"	1				1	"	132	20	115,896
Natural	"		1			1	"	116	24	103,424
....do	"	1					"			5,710
....do	"	1			1		"	60	40	26,432
....do	"			2			"	14		
Furnace 4′ by 6′	"		1	1		1	"	29	12	34,610
....do... 5′ by 8′	"	2					"	87	38	59,986
....do... 5′ by 6′	"	1			1		"	109	43	77,324
Natural	"						"	140	55	113,094
....do	"	1			1		"	126	55	101,241
Furnace 5′ by 6′	"	1	1				"	48	19	37,844
Natural	"		1		1		"	61	80	73,212
....do	"						"	56		
Furnace 5′ by 8′	"	1			1		"	110	81	66,675
vein is abandoned	"						"			
Natural	"			1	1		"	22	9	20,458
....do	"			1	1		"	35	19	26,589
Steam jet	"						"	96	58	67,112
vein is abandoned	"	2			1		"			
Furnace 6′ by 10′	"	1			1		"	55	33	23,520
....do... 4′ by 6′	"			1	1		"	25	18	21,090
..do... 5′ by 7′ and	"	1			1		"	103	115	74,480
Fan	"						"			
Natural	"		1				"	104	70	
..... (Drawing out pillars)				1	1		"			44,800
..... (Drawing out pillars)				2			"			
Fan 15′ dia. by 6′ face	Good	1					"	145	81	
..... (Idle in 1875)			1	1	2		"			78,064
..... (Idle in 1875)				1			"			
Furnace 5′ by 6′	Good	1					"	14	9	
Natural	"			1	1		"	15	20	41,567
Furnace 5′ by 6′	"	1			1		"	115	41	85,500
Furnace 5′ by 6′, nat'l & steam jet	"	1		1	1		"	159	64	115,748
Furnace 8′ by 8′	"		1	1	1		"	47	98	120,794
....do... 6′ by 8′	"			1			"	135		
	"	1	Used	as a	pu	mping	sha	ft.		
Furnace 6′ by 8′	"	1			1		Yes,	16	6	
Steam jet	"		1	1			"	110	53	42,511
Fan 16′ dia. by 6′ face	"	1	1		1		"	112	81	89,839
Fan 12′ dia. by 4′ face	"	1	1		1		"	148	109	128,386
Fan 12′ dia. by 4′ face	"	1			1		"	178	125	157,456
Furnace 6′ by 8′	"			1			"			
Natural	"			1			"	22		
Furnace 6′ by 6′	"		1	1	2		"	92	113	124,288
....do... 6′ by 6′	"			1			"	67		
....do... 2′ by 4′	"		1	2			"	18	21	
Natural	"						"	35	65	
	"			4	1		"			47,445
Furnace 12′ by 6′	"	1	1	2			"	83		
.. ..do... 8′ by 8′	"			1	1		"	174	119	172,110
Natural	"			1			"	28		
..... (Idle since Sept. 29)	"		1	1	1		"	8	12	5,600
Double furnace	"		1	1	1		"	215	107	58,760
								9		
Double furnace	"	1			1		"	50	117	158,935
								142		
Furnace 6′ by 7′	"	1					"		16	
....do... 6′ by 7′	"			1	1		"			
....do... 6′ by 7′	"						"			47,625
....do... 7′ by 8′	"	1			1		"	14	94	
....do... 7′ by 8′	"						"	165		
Fan 14′ dia. by 4′ face	"	1			1		"	204	89	165,165
Fan 12′ dia. by 4′ face	"	1	1		1		"	192	117	141,797
..... This vein is not working at	present.	1			1		"			
Fan 12′ dia. by 4′ face	Good		1				"	34	59	48,254
Fan 12′ dia. by 4′ face	"	1			1		"	78	119	130,648
..do....do	"						"	126		
Furnace 7′ by 8′	"	1			1		"	199	109	159,943

TABLE No. 3—

Number of coal mine or colliery.....	Name of Coal Mine and Colliery.	Name of Township, City or Borough where Located.	By whom Operated.	What is the size of intake?.....
52.	Hyde Park	City of Scranton	Del., Lacka. and W. R. R. Co	140
	do	do	do do	140
53.	Capouse	do	Lackawanna Coal and Iron Co.	140
	do	do	do do	140
	do	do	do do	280
	do	do	do do	140
54.	Mt. Pleasant	do	Mt. Pleasant Coal Co.	102
	do	do	do	102
	do	do	do	102
55.	Park	do	Park Coal Company	48
56.	Diamond Shaft	do	Del., Lacka. and W. R. R. Co	180
	do	do	do do	180
	do	do	do do	180
57.	Diamond Slope	do	do do	140
58.	Tripp Slope	do	do do	60
59.	Brisbin Shaft	do	do do	140
60.	Cayuga Shaft	do	do do	140
61.	Von Storch Shaft	do	Dela. and Hudson Canal Co	216
	do Slope	do	do do	153
	do Slope	do	do do	153
62.	Leggett's Creek	do	do do	240
	do	do	do do	240
63.	Marion	do	do do	350
64.	Rolling Mill	do	Lackawanna Iron and Coal Co.	70
	do	do	do do	80
65.	Pine Brook	do	do do	320
66.	Fair Lawn	do	Fair Lawn Coal Co	70
67.	Green Ridge	Dunmore borough	J. P. W. Riley	148
68.	No. 2 Shaft	do	Pennsylvania Coal Co	192
	No. 2 Slope	do	do	60
69.	Roaring Brook	do	Roaring Brook Coal Co	160
	do	do	do do	160
	do	do	do do	160
70.	Gipsy Grove	do	Pennsylvania Coal Co	216
	do No. 4	do	do	204
	Finnerty's Tunnel	do	do	50
	Smith's Tunnel	do	do	50
	Sawyer's Tunnel	do	do	55
71.	Elk Hill	Blakely township	Elk Hill Coal Co.	36
72.	Dip Mines	do	Del. and Hudson Canal Co.	63
73.	Eddy Creek	do	do do	63
74.	No. 1 Colliery	do	do do	72
75.	Grassy Island	do	do do	120
76.	Filer	do	Filer & Livey	77
	do	do	do	48
77.	Winton	do	do	91
	do	do	do	77
78.	Eaton	do	Jones, Simpson & Co	70
	do	do	do	60
	do	do	do	77
79.	White Oak	do	Del. and Hudson Canal Co.	77
80.	No. 1 Shaft	Gibsonburg borough	John Jermyn	63
81.	Jermyn's Slope	do	Glenwood Coal Co	80
82.	Erie	Carbondale township	Del. and Hudson Canal Co.	210
83.	Powderly Slope	do	do do	64
84.	Powderly Tunnel	do	do do	54
85.	No. 1 Slope	City of Carbondale	do do	54
86.	White Ridge	do	do do	54
87.	No. 3 Shaft	do	do do	234
88.	Coal Brook	do	do do	70
89.	Breaker Tunnel	do	do do	70
90.	Lackawanna	do	do do	63
91.	Valley Tunnel	do	do do	63
92.	Mill Ridge	Fell township	do do	63
93.	Jefferson	do	do do	63
94.	Midland Tunnel	do	do do	70
95.	Chestnut Hill	City of Carbondale	E. E. Hendricks & Co	30
96.	No. 12 Shaft	Pleasant Valley borough	Pennsylvania Coal Co	120
97.	Law Shaft	do	do	224
98.	Nealon & Gilmartin	City of Carbondale	Nealon & Gilmartin	48
	Horan Coal Mine	do	Anthony Horan	48
	Elk Creek	Fell township	Clarkson & Brennan	42
	Tripp Coal Mine	City of Scranton	Ira Tripp	60
	Rackett's Breaker	Carbondale township	Dela. and Hudson Canal Co	
	Screens at Dunmore	Dunmore borough	Pennsylvania Coal Co	

CONTINUED.

MODE OF VENTILATION.	Condition of ventilation	Number of shafts	Number of slopes	Number of tunnels	Number of breakers	Number of screens and shutes	Is there a second opening?	Number of persons employed in the mines	Number of persons employed outside	Number of tons of coal mined
Furnace 12′ by 16′	Good	1			1		Yes,	31	88	95,283
do do	"						"	136		
Fan 9½ dia. by 3 face	"	1					"	21		
Fan 20 dia. by 4 face	"	1			1		"	17	98	60,444
do do	"						"	114		
Fan 20 dia. by 4½ face	"						"	82		
Furnace	"						"	85	106	143,360
Steam jet	"		1		1		"	79		
(Idle all year)	"						"			
Natural	"		1	1	1		"	37	40	7,511
Fan 12 dia. by 4 face	"	1					"	100		
do do	"	1			1		"	21	145	166,163
do do	"						"	101		
Double furnace 14 by 16	"		1		1		"	111	130	96,322
Fan 12 dia. by 4 face	"		1				"	95		69,577
Fan 14 dia. by 4 face	"	1			1		"	86	70	31,070
Fan 12 dia. by 4 face	"	1			1		"	171	103	137,784
Fan 20 dia. by 5 face	"	1					"	117	140	
do do	"				1		"	99		263,516
do do	"		1				"	195		
do do	"	2			1		"	142	91	169,300
do do	"						"	157		
do do	"	1			1		"	49	11	14,600
Steam jet	"		1				"	33	12	6,621
Furnace 4½ by 5	"			1			"	47	1	
Furnace 5 by 7	"	1			1		"	124	38	86,977
do do	"		1		1		No.	47	54	55,430
Furnace 8 by 8	"		1		2		Yes,	247	103	134,575
do 4 by 6	"	1		1		1	"	113	11	75,566
Natural	"		1				"	17	1	
Furnace 4 by 6	"						"	50		
do do	"	2			2		"	73	90	142,473
do do	"						"	77		
do do	"	1					"	74		
Natural	"	1					"	6		
Furnace 4 by 6	"			1	1		"	83	42	145,226
do do	"			1			"	73		
do do	"			1			"	59		
Furnace 6 by 8	"			1	1		"	129	57	95,200
Natural	"			1	1		"	83	84	108,688
Water fall and fan	"	2					"	204		
Furnace 8 by 8	"		1	1	1		"	154	62	60,875
do 8 by 8	"	1			1		"	228	91	158,724
do 4 by 6	Moderate		1		1		"	107	84	50,058
do 4 by 6	"			1			"	72		
do 6 by 6	Good		1		1		"	121	86	137,680
do 4 by 6	"			1			"	63		
Natural	"	1	1				"			
Furnace 6 by 8	"			1	1		"	229	82	147,122
do 6 by 8	"			1			"			
do 6 by 8	"		1	1	1		"	235	68	149,580
do 8 by 8	"	1			1		"	219	105	110,000
do 8 by 8	"		1		1		"	205	98	156,480
do 10 by 10	"	1		1	1		"	239	103	104,661
Fan 15 dia. by 3 face	"		1			1	"	178	24	18,417
Furnace 6 by 6	"			1			"	25		
Natural	"		1			1	"	111	22	61,694
do	"			1		1	"	92		
do do	"	1				1	"	165	17	6,028
Furnace 8 by 8	"			1			"	164		
do do	"			1			"	26		
Furnace 6 by 8	"			1			"			
do 6 by 8	"			1	1		"	58	115	252,170
do 6 by 8	"			1			"	90		
do 6 by 8	"			1			"	11		
Two grates	"			1			"	97		
Furnace 4 by 6	"			1	1		"	37	22	11,415
Fan 17½ dia. by 5 face	"	1			1		"	80	48	77,430
do do	"	1					"	71	29	35,130
Natural	"			1	1		"	6	11	6,720
do	"			1	1		"	29	16	13,400
do	"			1	1		"	16	17	6,439
Fan 12 dia. by 4 face	"	1			1		"	10	7	7,840
					1				75	185,816
						1			65	

TABLE No. 3—

Number of coal mine or colliery.....	NAME OF COAL MINE AND COLLIERY.	NAME OF TOWNSHIP, CITY OR BOROUGH WHERE LOCATED.	BY WHOM OPERATED.	What is the size of Intake?.....
104,	No. 6½ Breaker	Dunmore borough	Pennsylvania Coal Co	.....
105,	No. 2 Breaker	Pittston borough	.....do..	.....
	Miscellaneous workmen employed by Pennsylvania Coal Co			.....
	Miscellaneous workmen employed by Delaware, Lackawanna and Western Coal Company			.....
	Miscellaneous workmen employed by Delaware and Hudson Canal Company			.....
106.	Jermyn's Shaft	Green Ridge	Jno. Jermyn	.....
107,	Williams' Breaker	Fell township	—— Williams	42
108,	Campbell & Son	City of Scranton	Campbell & Son	.....

CONTINUED.

MODE OF VENTILATION.	Condition of ventilation.....	Number of shafts.....	Number of slopes.....	Number of tunnels.....	Number of breakers.....	Number of screens and shutes.....	Is there a second opening?.....	Number of persons employed in the mines.....	Number of persons employed outside.....	Number of tons of coal mined.....
.....	.....	.....	.....	.....	1	.....	.....	.....	16	.....
.....	.....	.....	.....	.....	1	.....	.....	.....	67	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	23	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	40	.....
Sinking	.....	1	.....	.....	1	.....	.....	37	40	.....
Natural	.....	.....	.....	1	1	.....	.....	4	6	3,000
....do	.....	.....	.....	1	1	.....	.....	3	7	3,360
		62	38	63	79	10	.....	12,012	5,796	7,575,150
Coal used for steam purposes at the mines										236,400
Coal sold to 12,076 employees										144,902
Total amount of coal mined.....										7,956,452

There are eight mines ventilated by steam jets.
There are thirty-one mines ventilated by natural means, or by atmospheric pressure.
There are twenty-five mines ventilated by fans.
There are sixty-nine mines ventilated by furnaces.
There are sixty-two shafts.
There are thirty-eight slopes.
There are sixty-three tunnels or drifts.
There are seventy-nine breakers.
There are ten shutes and screens.

TABLE No. 3.—CONTINUED.

Number of coal mine or colliery.	Is the breaker machinery fenced and boxed off.....	Are the shaft landings protected by safety-gates.....	Is there a metal speaking-tube in shaft or slope.....	Is there a safety carriage with all modern improvements.....	Is there any noxious or inflammable gas evolved in the mine.....	How many splits of air in the mine.....	How many persons working in each split.....	Is the mine in a good and safe working condition.....	How many kegs of powder used during the year.....	Name of general mine superintendent.	Name of mining boss.
1	.....	.....	Yes,	.....	Yes.	2	44 16	Yes,	.....	Wm Law.....	Henry Jopling . .....
2	Yes,	.....	.....	.....	No..	.....	.....	"	2,500	Waddell & Schooley	Elihu Smith.....
3	"	Yes,	Yes,	Yes,	"	2	48 32	"	.....	Wm. Law.....	William Reynolds ...
4	.....	"	"	"	"	2	36 44	"	.....	.....do.....	Benjamin Harding ..
5	.....	"	"	"	"	1	56	"	.....	Andrew Bryden	..... do.....
6	.....	"	"	"	"	3	4 16 72	"	.....	William Law.....	William Reid .....
7	.....	"	"	"	No..	4	24 20 44 15	"	.....	Andrew Bryden	Peter P. Daly.....
8	... ..	.....	"	.....	"	3	16 32 44	"	.....	.....do.....	James Watson .....
9	.....	Yes,	"	Yes,	"	.....	.....	"	.....	.....do.....	.....
10	Yes,	"	"	"	Yes,	2	.....	"	.....	D. Davis	John Barclay,.....
	.....	.....	.....	.....	"	1	.....	"	.....	.....do.....	.....do .....
11	.....	.....	Yes,	.....	No..	1	.....	"	.....	William Law.....	Samuel Bennett.....
12	.....	Yes,	"	Yes,	Yes,	2	34 48	"	.....	Andrew Bryden	Thomas Richardson..
13	Yes,	"	"	"	No..	2	28 53	"	.....	.....do.	William Abbott.....
	.....	"	"	"	"	2	48 60 52	"	.....	.....do.....	James Moffatt.....
14	Yes,	"	"	"	"	4	18 26 28	"	.....	.....do.....	.....do.....
15	.....	.....	"	.....	"	2	24	"	.....	.....do.....	.....do .....
16	Yes,	.....	"	.....	"	2	38 23	"	2,084	Charles Hiscock.....	Thomas Smiles.....
	.....	.....	"	.....	"	1	56	"	.....	.....do.....	.....do .....
17	Yes,	Yes,	"	Yes.	"	2	50	"	1,789	.....do.....	.....do .....
	.....	.....	.....	.....	"	.....	.....	"	.....	.....	.....
18	Yes,	.....	Yes,	.....	"	1	22	"	469	Daniel Edwards	Fred'k Burkhart ....
19	"	.....	"	.....	"	1	35	"	940	Benjamin Bowkley	Benjamin Lloyd ....
20	"	Yes,	"	Yes,	"	2	48	"	1,829	Charles Hiscock	Thomas Smiles.....
	.....	.....	.....	.....	"	.....	.....	"	.....	.....	.....
21	Yes,	Yes,	Yes,	Yes,	"	1	55	"	490	J. B. Hutchison	James D. Jones.....
22	"	.....	"	....	No..	1	25	"	.....	Daniel Evans	Daniel Evans .....
23	"	Yes,	"	Yes,	"	2	50	"	2,695	S. B. Bennett.....	Thomas Titley .....
	.....	.....	.....	.....	"	.....	.....	"	.....	.....do.....	.....do .....
24	.....	.....	.....	.....	"	.....	.....	"	.....	Fred Mercur	A. Rees.....
	Yes,	.....	Yes,	.....	"	.....	.....	"	1,607	.....do.....	.....do .....
	.....	.....	.....	.....	"	.....	.....	"	.....	.....do.....	.....do .....
25	.....	Yes,	Yes,	Yes,	"	2	50	"	.....	W. E. Colbourne	A. M'Caa .....
26	Yes.	.....	"	.....	"	.....	.....	"	2,751	.....do.....	.....do .....
	.....	.....	.....	.....	"	.....	.....	"	.....	.....do.....	.....do .....
27	.....	Yes,	Yes,	Yes,	"	1	14	"	.....	Andrew Bryden.....	Wm. Abbott .....
28	Yes,	.....	.....	.....	"	1	12	"	.....	William Law.....	John B. Law.....
29	.....	Yes.	Yes.	Yes.	"	3	12 48 38	"	....	.....do.....	Thomas Weir .....
30	Yes,	"	"	"	"	3	48 30 32	"	.....	.....do.....	Alexander Laird.....
31	.....	.....	.....	.....	"	1	47	"	.....	W. E. Colbourne	Joseph D. Davis.....
32	Yes,	.....	.....	.....	"	1	135	"	3,716	.....do.....	.....do... .....
33	.....	Yes,	.....	Yes,	.....	.....	.....	.....	.....	.....do.....	Chas. Smith.....
	Yes.	"	Yes,	"	Yes,	1	16	Yes,	1,623	.....do.....	.....do .....
	.....	.....	.....	.....	No..	1	.....	"	.....	.....do.....	.....do .....
34	Yes,	Yes,	"	Yes,	Yes,	2	50	"	3,962	F. Kierner	Fred. Courtright ....
35	"	"	"	"	"	3	44	"	3,121	W. R. Storrs, gen. agt., E. R. Walter, gen. out. superintendent.....	John L. Lewis..... Morgan Harris ...
	"	"	"	"	"	3	50 50 22	"	.....	B. Hughes, gen. in. supt	
36	.....	.....	.....	.....	.....	.....	.....	.....	5,055	.....do.....do.....	.....do .....
37	.....	.....	.....	.....	No..	1	22	Yes,		Gen. E. Phiny.....	John Smith.....
	Yes,	.....	.....	.....	"	1	92	"		.....do.....	.....do .....
	.....	.....	.....	.....	"	1	67	"	4,133	.....do.....	.....do .....
38	.....	.....	Yes,	.....	"	.....	.....	"		.....do.....	John Muchlow .....
39	Yes.	.....	.....	.....	"	1	32	"		William Connell	John Humphrey .....
	.....	.....	.....	.....	"	.....	.....	"	1,846	.....do.....	.....do .....

TABLE No. 3.—CONTINUED.

Number of coal mine or colliery.	Is the breaker machinery fenced and boxed off?	Are the shaft landings protected by safety-gates?	Is there a metal speaking tube in shaft or slope?	Is there a safety carriage with all modern improvements?	Is there any noxious or inflammable gas evolved in the mine?	How many splits of air in the mine?	How many persons working in each split?	Is the mine in a good and safe working condition?	How many kegs of powder used during the year?	Name of general mine superintendent.	Name of mining boss.
40	Yes,	Yes,	Yes,	Yes,	No..	2	40	Yes,	6,702	Wm. Connell	John Humphrey
	"	"	"	.....	"		.....	"		do	do
	"	.....	"	.....	"		.....	"		do	do
41	"	.....	No..	.....	"	1	8	"	.....	A. J. Norman	Frederick Repp
42	"	.....	Yes,	.....	Yes,	4	50 40 30 29	.....	.....	Wm. R. Storrs, gen. coal agent E. R. Walters, gen. o. s. Benj. Hughes, gen'l inside superintendent	Richard M. Hackett do
	.....	.....	"	.....	"	1	9	Yes,	1,786		
43	Yes,	Yes,	"	Yes,	"	1	50	"		do	Lewis Roberts
	.....	.....	"	.....	"	3	50 18 24	"	4,246	do	do
44	Yes,	Yes,	"	Yes,	"	.....	.....	"	.....	do	John Hale
45	"	.....	"	.....	"	.....	.....	"	.....	do	do
	"	.....	"	.....	"	.....	.....	"	.....	do	do
46	"	Yes,	"	Yes,	"	1	11	"	1,147	do	G. N. Williams
	"	"	"	"	"	2	70 72 46	"	.....	do	do
47	"	"	"	"	"	4	34 20 41	"	3,766	do	John Flynn
48	"	"	"	"	"	3	50	"	4,068	do	John T. Williams
49	"	"	"	"	"	.....	.....	.....	.....	do	John Gorden
	.....	.....	"	.....	No..	1	34	Yes,	1,642	do	do
50	Yes,	Yes,	"	Yes,	Yes,	2	35	"	3,489	do	Wm. Douse
	.....	"	"	"	"	2	48	"	.....	do	do
51	Yes,	"	"	"	No..	3	40 45 43	"	4,828	do	Thomas Carson
52	"	"	"	"	"	1	31	"	.....	do	D. W. Moser
	.....	"	"	"	Yes,	2	50	"	2,458	do	do
53	.....	"	"	"	No..	1	21	"		Chas. F. Mattes	R. G. Brooks
	Yes,	"	"	"	"	1	17	"		do	do
	.....	"	"	"	"	2	50	"	2,418	do	do
	.....	"	"	"	Yes,	2	35 17	"		do	do
54	.....	.....	"	.....	No..	1	85	"		Wm. T. Smith	James R. James
	.....	.....	"	.....	"	1	79	"	4,000	do	do
	.....	.....	"	.....	.....	.....	.....	"		do	do
55	Yes,	.....	.....	.....	No..	1	37	"	2,410	Morgan Bowen	Morgan Bowen
56	.....	Yes,	Yes,	Yes,	"	2	50	"	2,519	B. Hughes & Co	John Hale
	Yes,	"	"	"	"	1	21	"	486	do	Rees T. Evans
	.....	"	"	"	Yes,	2	48	"	1,695	do	do
57	.....	.....	"	.....	"	3	40 30 44	"	2,501	do	Daniel Phillips
58	.....	.....	"	.....	No..	2	45	"	2,364	do	John A. Bergan
59	Yes,	Yes,	"	Yes,	Yes,	2	47 37 45	"	1,228	do	Frank. Zimmerman,
60	"	"	"	"	"	4	40 35 25	"	4,223	do	Thomas Watkins
61	.....	"	"	"	"	3	35	"		A. Vandling, gen. mi. s.	E. D. Davis
	Yes,	.....	"	.....	No..	2	45	"	7,723	Andrew Nicol, dist. sup.	do
	.....	.....	"	.....	Yes.	3	48	"		Finlay Ross, assistant	Ed. D. Jones
62	Yes,	Yes,	"	Yes,	"	3	45	"	5,986	do	Thomas Bamford
	.....	"	"	"	"	5	30	"		do	Matthew Mackie
63	Yes,	"	"	"	"	1	49	"	813	do	Joseph V. Bertley
64	.....	.....	.....	.....	No..	1	33	"	228	Chas. F. Mattes	R. G. Brooks
	.....	.....	.....	.....	"	1	47	"		do	do
65	Yes.	Yes,	Yes.	Yes,	Yes.	2	43 58	"	2,439	do	do
66	"	.....	"	.....	"	1	47	"	2,185	John H. Hosie	Wm. M'Coy
67	"	.....	"	.....	"	2	50 197	"	5,620	J. P. W. Reiley	Alex. Frew
68	.....	Yes,	"	Yes,	No..	1	80	"	3,404	James Young	Robert M'Millan
	.....	.....	.....	.....	"	1	17	"	.....	do	do
69	.....	Yes,	"	Yes,	"	1	50	"	7,021	John R. Davis	Patrick Mongan
	Yes,	"	"	"	"	1	73	"		do	do
	.....	"	"	"	"	1	77	"		do	do
70	.....	"	"	"	"	1	74	"		James Young	P. H. O'Hora
	.....	"	"	"	"	1	6	"		do	do
	Yes,	.....	.....	.....	"	1	53	"	7,092	do	do
	.....	.....	.....	.....	"	1	73	"		do	do
	.....	.....	.....	.....	"	1	59	"		do	do

TABLE No. 3.—CONTINUED.

Number of coal mine or colliery.	Is the breaker machinery fenced and boxed off.....	Are the shaft landings protected by safety-gates.....	Is there a metal speaking-tube in shaft or slope.....	Is there a safety carriage with all modern improvements.....	Is there any noxious or inflammable gas evolved in the mine.....	How many splits of air in the mine.....	How many persons working in each split.....	Is the mine in a good and safe working condition.....	How many kegs of powder used during the year.....	Name of general mine superintendent.	Name of mining boss.
71	Yes,	.....	.....	.....	No..	2	60	Yes,	2,730	Wm. H. Richmond.....	Benjamin Rees.....
72	"	.....	.....	.....	"	1	33	"	4,101	A. H. Vandling, g. m. s. Andrew Nicol, dist. sup. A. B. Nicol, assistant...	P. K. Lardier.....
73	"	Yes,	Yes,	Yes.	"	4	50	"		....do.....do.....	....do.....
74	"	.....	.....	.....	"	3	50	"	2,465	.....do.....do.....	Andrew Patten.....
75	"	Yes,	Yes,	Yes,	"	4	50	"	4,359	.....do.....do.....	.....do.....
76	"	.....	"	.....	No..	2	50	"	1,950	George Filer.....	Timothy Parfrey....
	"	.....	"	.....	"	1	72	"		....do.....	.....do.....
77	"	.....	"	.....	"	2	19 81	"	5,359	....do.....	.....do.....
	"	.....	.....	.....	"	1	66	"		....do.....	.....do.....
78	"	Yes,	Yes,	Yes,	"	.....	.....	"	4,461	Edward Jones.....	James Eaton.....
	"	.....	.....	.....	"	.....	.....	"		....do.....	.....do.....
	"	.....	.....	.....	"	.....	.....	"		...do.....	.....do.....
79	"	.....	.....	.....	"	4	50	"	4,331	A. Vandling, A. B. Nicol, assistant.....	Hugh Jones.....
80	"	Yes,	Yes,	Yes,	"	4	50	"	7,535	J. J. Jermyn.....	Robert Carter.....
81	"	.....	"	.....	"	.....	.....	.....		....do.....	A. D. Green.....
82	"	Yes,	"	Yes,	"	2	95	"	3,430	W. E. Colbourne.....	Joseph Davis.....
83	.....	.....	.....	.....	"	3	50	"	2,767	A. H. Vandling and A. Nicol, assistant.....	James Nicol.....
84	.....	.....	.....	.....	"	1	25	"	.....	.....do.....do.....	.....do.....
85	Yes,	Yes,	Yes,	Yes,	"	2	50	"	4,300	....do.....do.....	John Campbell.....
86	.....	.....	.....	.....	"	1	92	"		....do.....do.....	.....do.....
87	Yes,	Yes,	Yes,	Yes,	"	3	50	"	1,437	.....do.....do.....	John Hughes.....
88	.....	.....	.....	.....	"	3	50	"		....do.....do.....	John Waterfield.....
89	.....	.....	.....	.....	"	1	26	"		....do.....do.....	.....do.....
90	.....	.....	.....	.....	"	.....	.....	"		....do.....do.....	.....do.....
91	Yes,	.....	.....	.....	"	1	58	"	10,832	....do.....do.....	Wm. M'Myne.....
92	.....	.....	.....	.....	"	1	90	"		....do.....do.....	.....do.....
93	.....	.....	.....	.....	"	1	11	"		...do.....do.....	John Waterfield.....
94	.....	.....	.....	.....	"	1	97	"		....do.....do.....	Wm. M'Myne.....
95	Yes,	Yes,	.....	.....	"	1	37	"	593	E. E. Thomas.....	E. E. Thomas.....
96	"	"	Yes,	Yes,	"	2	44 29	"	.....	Wm. Law.....	John B. Law.....
97	"	"	"	"	Yes,	2	46 25	"	.....	.....do.....	Robert M'Millan.....
98	"	.....	.....	.....	No..	1	6	"	250	M. Gilmartin.....	M. Gilmartin.....
99	"	.....	.....	.....	"	1	20	"	350	Anthony Horan.....	Anthony Horan.....
100	"	.....	.....	.....	"	1	16	"	180	Thomas Brennan.....	.....
101	"	.....	.....	.....	"	1	10	.....	.....	.....	.....
102	.....	.....	.....	.....	.....	.....	.....	.....	.....	The coal prepared in this	breaker is taken from
103	.....	.....	.....	.....	.....	.....	.....	.....	.....	Powderly, No. 1, slope,	White Ridge, and No.
104	.....	.....	.....	.....	.....	.....	.....	.....	.....	2 shaft.	.....
105	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
106	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Jermyn.....	.....
107	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. W. Williams.....	.....
108	.....	.....	.....	.....	.....	.....	.....	.....	.....	Campbell & Son.....	.....

TABLE No. 3.—CONTINUED.

Number of coal mine or colliery.	Name of outside foreman.	Are there any boys working in the mines under 12 years of age	Length of headings in feet.....	Length of air-ways in feet.....	Length of T-iron track laid in mines.....	Length of strap-iron track laid in the mines.....	Length of iron track outside.....	Is there any standing gas or water in the mines.....	Number of chambers working in the mines.....	What is the size of outcast.....
1	.....	No.	15,431	15,431	12,063	1,038	480 S 315 S	No.	18	88
2	.....	"	3,000	3,000	2,400	4,500	4,800 T	"	34	48
3	Loftiss Campbell	"	23,702	22,342	4,320	12,900	185 T	"	20	88
4	.....do	"	14,789	13,789	9,530	1,550	1,000 S 1,025 T	"	20	120
5	.....	"	8,171	8,171	7,100	1,100	2,100 T	"	14	100
6	.....	"	22,076	22,076	2,600	14,500	60 T	"	23	147
7	.....	"	23,241	22,720	5,109	18,252	135 T	"	26	140
8	.....	"	21,974	21,869	3,550	17,000	1,100 T 3,800 S	"	23	72
9	.....	"	Just sinking.		.....	.....	.....	"	.....	.....
10	David W. Evans.....	"	2,134	2,134	1,300	350	1,500 T	"	34	32
	.....do	"	Idle all year.		.....	.....	.....	"	.....	.....
11	.....	"	2,000	1,850	550	.....	1,017 T	"	6	42
12	.....	"	9,882	7,312	3,232	.....	2,300 T 7,884 S	"	17	60
13	Henry Searle	"	12,271	12,421	2,905	6,352	50 T	"	20	60
14	J. B. Irwin	"	18,263	17,705	3,467	12,519	50 T	"	27	100
15	.....do	"	21,392	21,998	3,100	1,800	500 T	"	26	100
16	.....do	"	2,400	1,900	.....	1,360	1,200 T	"	10	25
	Joseph Cool	"	3,200	3,200	900	1,200	600 T	"	9	65
	.....do	"	3,200	3,200	.....	.....	4,276 S	"	13	120
17	.....do	"	4,000	4,000	2,867	3,233	1,529 T 894 S	"	32	40
	.....	"	.....	.....	.....	.....	.....	"	.....	.....
18	John J. Powell.....	"	2,400	2,400	1,553	553	300 T 200 S	"	8	48
19	Abraham Price	"	2,500	2,500	500	1,500	300 S	"	14	56
20	Joseph Cool	"	6,100	6,100	2,000	1,670	2,137 T 70 S	"	31	100
	.....	"	.....	.....	.....	.....	.....	"	.....	.....
21	Thomas Watkins	"	700	650	1,164	250	400 T	"	10	96
22	Evan J. Evans	"	2,300	2,300	2,400	4,500	650 T	"	10	32
23	Robert Jagues.....	"	2,850	2,850	2,600	.....	1,600 S 8,345 T	"	40	126
	.....	"	.....	.....	.....	.....	.....	"	.....	.....
24	C. W. Fisher	"	3,000	3,000	2,500	.....	9,000 T	"	15	70
	.....do	"	700	700	2,500	.....	.....	"	.....	.....
	.....do	"	1,200	1,200	1,000	.....	.....	"	.....	.....
25	Lyman K. Carle	"	4,500	4,500	5,250	2,400	154 S 6,677 T	"	53	48
26	.....do	"	440	336	200	178	1,000 T	"	.....	.....
27	.....do	"	1,050	550	950	200	6,753 T	"	.....	.....
28	Henry Searle	"	.....	.....	.....	.....	.....	"	.....	.....
29	Dathan Morse.....	"	2,000	.....	1,200	1,000	1,300 T	"	6	60
	.....do	"	8,882	8,135	3,900	2,900	40 S 140 T	"	23	60
30	Frank Boone	"	13,297	13,297	4,175	5,050	500 S 1,767 T	"	32	100
31	J. D. Caryl.....	"	450	459	1,369	3,389	1,100 S 8,498 T	"	21	64
32	.....do	"	4,980	4,980	3,334	1,539	.....	"	55	64
33	D. Robertson	"	.....	.....	.....	.....	.....	"	.....	.....
	.....do	"	2,500	2,400	800	800	450 T	"	6	50
	.....do	"	1,500	1,500	1,500	4,000	1,200 S 2,000 T	"	35	36
34	P. H. Kœrner.....	"	5,000	5,000	4,200	600	900 T	"	46	132
35	Adam Rheinhart.....	"	5,256	3,333	3,252	600	2,300 T	"	54	90
36	J. V. Cooper	"	11,703	600	18,122	2,242	3,148 S 3,259 T	"	63	100
	.....do	"	4,400	300	7,950	1,200	.....	"	14	144
37	M. L. Cayne	"	3,400	3,100	3,500	2,000		"	9	42
	.....do	"	2,000	2,000	2,000	2,000	12,000	"	32	30
	.....do	"	1,000	1,200	1,200	1,000		"	24	42
38	John Muchlow	"	.....	.....	400	.....	.....	"	2	16
39	Robert Vinman	"	3,000	3,000	2,500	1,000	500 S 500 T	"	8	54
	.....do	"	.....	.....	.....	.....	.....	"	.....	.....
40	William Humphray	"	2,900	2,900	2,900	600	300 T	"	8	72
	.....do	"	20,000	20,000	10,800	9,600	9,000 T 2,000 S	"	66	72
	.....do	"	3,000	6,000	3,600	1,000	100 T	"	10	63
41	.....	"	505	.....	400	500	300 T	"	3	56
42	John A. Mears.....	"	8,505	8,505	11,121	3,786	750 S 6,000 T	"	50	36
	.....do	"	300	75	820	.....	.....	"	3	36
43	Edward E. Thomas.....	"	1,566	1,238	2,053	3,435	.....	"	25	120

TABLE No. 3.—CONTINUED.

Number of coal mine or colliery.	Name of outside foreman.	Are there any boys working in the mines under 12 years of age	Length of headings in feet.....	Length of air-ways in feet.....	Length of T-iron track laid in mines.....	Length of strap-iron track laid in the mines.....	Length of iron track outside.....	Is there any standing gas or water in the mines.....	Number of chambers working in the mines.....	What is the size of outcast.....
	Edward E. Thomas	"	11,407	3,089	11,174	4,300	144 S 6,496 T	No.	52	120
44	J. M. Acker	"	12,000	12,000	3,800	3,200		"	.....	100
45	do	"	6,699	6,699	5,538	5,892		"	.....	100
	do	"	.....	.....	.....	.....	.....	"	.....	100
46	W. H. Carling	"	4,946	2,700	735	4,818	.....	"	7	60
	do	"	10,878	6,000	8,444	14,400	1,800 S 4,000 T	"	50	60
47	S. N. Stetler	"	13,250	7,881	14,689	6,840	200 S 2,600 T	"	72	90
48	John Rees	"	8,160	8,400	13,260	2,130	1,365 T	"	76	100
49	John Fern	"	5,550	3,225	9,175	500	50 S 730 T	"	43	100
	do	"	700	700	1,850	.....	.....	"	5	100
50	J. F. Greene	"	7,000	7,000	6,000	.....	.....	"	35	100
	do	"	15,930	10,000	14,318	4,050	2,212 T	"	33	100
51	B. C. Greene	"	26,000	8,000	35,900	4,000	5,536 T	"	76	48
52	Robert E. Ruthvin	"	4,266	3,966	5,051	900	.....	"	17	100
	do	"	11,103	9,000	31,364	2,063	3,275 T	"	47	100
53	David Brooks	"	9,100	5,300	12,700	8,000	2,600 T 175 S	"	6	70
	do	"	10,000	6,000	9,000	450	.....	"	4	90
	do	"	1,400	1,400	2,500	100	.....	"	26	90
	do	"	.....	.....	.....	.....	.....	"	6	90
54	Thomas D. Bevan	"	8,410	525	5,300	26,000	2,000 T	"	28	132
	do	"	6,950	6,050			2,000 S	"	24	132
	do	"	.....	.....	.....	.....	.....	"	.....	132
55	David Brooks	"	2,000	1,500	1,500	1,000	400 T 300 S	"	12	48
56	D. Langstaff	"	1,625	1,153	1,546	.....	.....	"	11	48
	do	"	8,050	6,250	12,976	2,968	1,922 S 2,540 T	"	35	60
	do	"	10,896	5,796	7,690	562	1,422 S 2,540 T	"	33	60
57	do	"	9,738	2,880	11,040	2,580	2,248 S 3,200 T	"	44	144
58	do	"	6,550	5,150	10,950	1,135	200 S 1,800 T	"	35	60
59	D. E. Bell	"	2,138	2,306	5,369	150	332 S 2,253 T	"	34	90
60	J. C. Bowman	"	10,491	10,181	13,267	3,350	975 S 3,450 T	"	64	90
61	Chas. Zeigler	"	5,370	4,660	7,829	6,353	.....	"	38	100
	do	"	16,707	16,707	22,107	6,000	.....	"	24	100
	do	"	21,376	21,376	21,701	4,969	1,170 S 5,000 T	"	61	100
62	J. L. Atherton	"	23,711	21,861	31,835	16,465	2,550 T	"	32	63½
	do	"						"	49	63½
63		"	3,274	3,274	3,809	450	.....	"	13	100
64	Albert Ross Kelly	"	7,000	6,900	4,000	1,800	100 S 700 T	"	16	50
	do	"	6,000	6,000	1,600	2,000	100 T 50 S	"	21	50
65	Henry Hess	"	18,000	15,000	16,900	10,000	600 S 1,600 T	"	44	132
66		"	1,700	1,825	2,850	.....	2,200 T	"	18	.....
67	W. S. Boyd	"	18,700	6,500	3,045	10,890	4,575 T 400 S	"	39	69
68	John W. Marshall	"	1,725	1,725	1,600	1,725	.....	"	20	66
	do	"	800	800	1,100	700	666 T	"	6	120
69	C. W. Baxter	"	2,400	2,400	200	2,900	4,000 T	"	17	80
	do	"	3,000	3,000	200	4,700	2,000 S	"	26	80
	do	"	3,100	3,100	200	5,350		"	22	80
70	Wm. A. Jennings	"	3,149	3,100	750	3,900	900 S 1,200 T	"	18	75
	do	"	150	.....	.....	.....	.....	"	1	191
	do	"	4,800	4,000	678	4,800	800 S 1,000 T	"	9	60
	do	"	2,887	2,200	.....	3,000	1,300 T	"	17	75
	do	"	3,650	.....	100	3,000	2,070 T	"	14	75
71		"	15,000	10,000	3,000	12,000	1,560 T 1,000 S	"	48	80
72	J. G. Bell	"	6,065	6,075	2,912	6,075	250 S 1,868 T	"	.....	64
73	do	"	3,400 13,200	3,400 13,200	4,500 2,000	800 13,200	600 S 640 T	"	84	150
74	do	"	42,300	42,300	960	42,300	656 S 626 T	"	60	64

TABLE No. 3.—CONTINUED.

Number of coal mine or colliery.	Name of outside foreman.	Are there any boys working in the mines under 12 years of age	Length of headings in feet.....	Length of air-ways in feet.....	Length of T-iron track laid in mines.....	Length of strap-iron track laid in the mines.....	Length of iron track outside.....	Is there any standing gas or water in the mines.....	Number of chambers working in the mines.....	What is the size of outcast.....
75	J. G. Bell	"	26,000	26,000	17,400	26,000	1,875 S 6,436 T	No.	62	70
76	D. Stearns	"	2,200	2,200	2,200	900	5,850 T	"	23	36
	do	"	1,200	1,100	1,500	1,300	400 S	"	16	64
77	Edward Bronnell	"	1,500	1,500	1,200	3,800	830 S 3,700 T	"	36	66
	do	"	1,600	1,500	1,700	1,600		"	20	36
78	George Eaton	"	840	738			1,750 T	"	5	70
	do	"	18,210	18,410		30,000	1,650 S	"	23	48
	do	"	6,800	6,300				"	24	48
79	Thomas Law	"	19,500	19,000	3,500	19,500	1,200 T 61 S 6,700 T	"	61	64
80	John Knight	"	6,014	6,014	3,200	22,419		"	100	60
81	Peter Merritt	"	16,425	16,425	3,500			"	162	64
82	William D. Walker	"	4,500	4,500	900	4,000	5,700 T 1,561 S	"	53	80
83	William Bowers	"	14,850	14,850	1,300	14,850	1,110 S	"	43	50
84	do	"	6,000	2,000	1,000	4,000		"	13	40
85	do	"	6,000	6,000	600	5,400	250 S	"	28	64
86	do	"	21,150	21,150	1,000	15,229	3,150 T	"	21	48
87	do	"	35,600	26,000		35,600	1,200 T	"	50	88
88	W. P. E. Morss	"	17,000	17,000	1,200	17,000	2,000 T	"	42	64
89		"	2,400	2,400	450	2,400		"	7	64
90		"	6,318	6,318	500	6,318		"		64
91		"	7,500	7,500	830	8,000	9,236 S	"	16	64
92		"	4,350	4,350	600	4,350	8,463 T	"	22	64
93		"	9,870	9,870	640	9,870		"	13	64
94		"	4,000	4,000	500	4,000		"	24	64
95	E. E. Hendrick	"	1,345	565	225	1,640	340 S 290 T	"	14	40
96	George M. Snyder	"	3,700	3,700	2,700	500	805 T	"	20	80
97	do	"	2,600	2,600	2,000	600	1,640 T	"	18	72
98	M. Gilmartin	"	200	200		200	100 S	"	3	48
99	Anthony Horan	"	300	300	150	150	300 T	"	10	48
100		"	610	200		412	326 S	"	6	42
101		"						"	5	144
102										
103										
104										
105										
106	Jno Biglin									
107			300	300				700 S		
108			500	500			500	300 S	4	42
			1,029,033	878,801	631,194	661,318	230,903	68,850		

There are 1,029,033 feet of headings, which equals 194.89 miles.
There are 878,801 feet of air-ways, which equals 166.44 miles.
There are 631,318 feet of T-iron track in the mines, which equals 119.54 miles.
There are 230,903 feet of T-iron track outside, which equals 43.73 miles.
There are 661,318 feet of strap-iron track in the mines, which equals 125.25 miles.
There are 68,850 feet of strap-iron track outside, which equals 13.04 miles.

TABLE No. 4.

Number of colliery	NAME OF COLLIERY.	AMOUNT OF VENTILATION PER MINUTE AT			Is the air conducted to the face of the workings systematically	Are the doors hung on main roads so as to close of their own accord	Are there double doors on main travelled roads	Is there an extra door in case of an accident to any of the others	Are there attendants at main doors	Is the mine examined every morning before persons are allowed to enter	Is the mine examined every evening to see that the main doors are all closed	Has the amount of ventilation been measured and reported	Is the mining boss a competent and practical man	Is there an assistant or fire boss in the mine
		Intake	Face of workings	Outcast										
1	No. 2 or Port Griffith	40,200	25,100	11,200	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,
2	Everhart	11,460	5,840	11,850	"	"	No..	No..	"	.....	.....	"	"	.....
3	No. 6 shaft	35,000	22,350	40,300	"	"	"	"	"	Yes,	Yes,	"	"	Yes.
4	No. 5 shaft	20,000	18,800	15,000	"	"	Yes,	Yes,	"	"	"	"	"	.....
5	No. 11 shaft	11,000	10,700	12,200	"	"	"	"	"	"	"	"	"	.....
6	No. 7 shaft	26,650	25,500	36,200	"	"	"	"	"	"	"	"	"	Yes,
7	No. 4 shaft	18,000	17,200	18,000	"	"	"	"	"	"	"	"	"	"
8	No. 4 slope	21,000	9,230	19,600	"	"	"	"	"	"	"	"	"	No..
9	No. 5 shaft (new)	Just opened.		.....	"	"	"	"	"	.....	.....	"	"	.....
10	Tompkins slope	6,732	4,800	8,960	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
	do	.....	.....	.....						.....	.....	"	"	.....
11	No. 1 slope	12,600	12,150	12,750	Yes,	Yes,	Yes,	Yes,	Yes,	.....	.....	"	Yes,	.....
12	No. 9 shaft	32,100	28,300	34,700	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
13	No. 10 shaft	26,000	24,800	27,300	"	"	"	"	"	.....	.....	"	"	.....
	do	30,000	21,300	31,200	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
	do	Just opened.		.....	"	"	"	"	"	.....	.....	"	"	.....
14	No. 8 shaft	16,330	15,570	15,840	"	"	"	"	"	.....	.....	"	"	.....
15	No. 6 slope	14,640	9,450	15,130	"	"	"	"	"	.....	.....	"	"	.....
16	Seneca slope	13,650	10,760	15,180	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
	do	13,540	13,000	15,100	"	"	"	"	"	.....	.....	"	"	.....
17	Ravine shaft	13,350	12,400	14,760	"	"	"	"	"	.....	.....	"	"	.....
	do	This vein is abandoned.			.....	.....				.....	.....			
18	Beaver	4,500	2,500	4,650	Yes,	Yes,	No..	No..	Yes,	.....	.....	Yes,	Yes,	.....
19	Rock Hill tunnel	4,500	2,500	4,650	"	"	"	"	"	.....	.....	"	"	.....
20	Twin	13,220	9,860	11,480	"	Yes,	Yes,	"	Yes,	Yes,	Yes,	"	"	Yes,
	do	This vein is abandoned.			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	Phœnix	4,800	4,200	5,190	Yes,	Yes,	No..	No..	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,
22	Columbia	4,000	3,400	4,400	"	"	"	"	"	.....	.....	"	"	.....
23	Butler	6,890	6,240	7,200	"	"	Yes,	Yes,	"	.....	.....	"	"	.....
	do	This vein was idle all year.			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	Ontario slope	11,800	5,780	12,000	Yes,	Yes,	Yes,	Yes,	Yes.	.....	.....	Yes,	Yes,	.....
	Ontario tunnel	12,100	6,300	12,640	Drawing out pillars in this vein.									
	do	Drawing out pillars in this vein.			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	Hillside	18,000	10,000	19,000	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,
26	Hillside tunnel	This tunnel was idle all year.			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Heidelberg tunnel	This tunnel was idle all year.			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	Brown's	Drawing out pillars in this colliery.			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	Dawson	31,440	10,050	34,700	Yes,	Yes,	Yes,	Yes,	Yes,	.....	.....	Yes,	Yes,	.....
29	Stark	24,000	19,050	25,240	"	"	"	"	"	.....	.....	"	"	.....
30	Spring Brook	7,200	4,100	7,560	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
31	do	29,400	13,600	30,200	"	"	"	"	"	"	"	"	"	.....
32	Carbon Hill	Used as a pumping shaft.			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	do	10,000	7,000	11,000	Yes,	Yes,	No..	No..	Yes,	.....	.....	Yes,	Yes,	.....
	do	7,000	3,000	7,500	"	"	"	"	"	.....	.....	"	"	.....
33	Sibley	20,000	12,000	25,000	"	"	Yes,	Yes,	"	.....	.....	"	"	.....
34	Pyne	64,000	55,000	69,060	"	"	"	"	"	.....	.....	"	"	.....
35	Taylor	67,000	60,070	75,700	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
36	Taylor drift	25,000	18,000	28,000	"	"	"	"	"	.....	.....	"	"	.....
37	Corey breaker	.....	.....	.....	"	"	"	"	"	.....	.....	"	"	.....
	do	.....	.....	.....	"	"	"	"	"	.....	.....	"	"	.....
	do	15,000	10,000	15,100	"	"	"	"	"	.....	.....	"	"	.....
38	Greenwood	.....	.....	.....	"	"	"	"	"	.....	.....	"	"	.....
39	National Anthracite	16,000	14,000	17,000	"	"	"	"	"	.....	.....	"	"	.....
40	Meadow Brook	20,000	18,000	21,000	"	"	"	"	"	.....	.....	"	"	.....
	do	35,000	30,000	36,000	"	"	"	"	"	.....	.....	"	"	.....
	do	12,000	9,000	12,000	"	"	"	"	"	.....	.....	"	"	.....
41	Stafford Brook, No. 2	9,900	8,000	10,100	"	"	"	"	"	.....	.....	"	"	.....
42	Scranton Coal Co	35,000	30,000	32,000	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
	do	.....	.....	.....	"	"	"	"	"	.....	.....	"	"	.....
43	Dodge	17,000	15,000	18,000	"	"	"	"	"	"	"	"	"	"
	do	75,000	58,000	85,000	"	"	"	"	"	"	"	"	"	"
44	Bellevue shaft	Idle in 1875.		.....	"	"	"	"	"	.....	.....	"	"	.....
45	Bellevue slope	Idle in 1875.		.....	"	"	"	"	"	.....	.....	"	"	.....
	do	Idle in 1875.		.....	"	"	"	"	"	.....	.....	"	"	.....
46	Oxford shaft	18,000	16,000	18,500	"	"	"	"	"	Yes,	Yes,	"	"	No..
	do	18,000	15,000	24,000	"	"	"	"	"	"	"	"	"	"
47	Central shaft	50,000	45,500	60,000	"	"	"	"	"	"	"	"	"	Yes,
48	Sloan shaft	64,000	55,000	64,800	"	"	"	"	"	"	"	"	"	"
49	Archbald shaft	This vein was idle all year.			.....	.....	.....	.....	.....	.....	.....	"	"	.....
	Archbald slope	37,520	27,550	33,609	Yes,	Yes,	Yes,	Yes,	Yes,	.....	.....	"	"	.....
50	Continental	50,000	26,000	27,000	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
	do	50,000	25,000	60,000	"	"	"	"	"	"	"	"	"	"
51	Hampton	32,000	30,000	35,000	"	"	"	"	"	"	"	"	"	"
52	Hyde Park	54,000	20,000	55,389	"	"	"	"	"	.....	.....	"	"	.....
	do	61,000	39,280	62,420	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
53	Capouse colliery	24,000	13,000	25,000	"	"	"	"	"	.....	.....	"	"	.....
	do	16,000	12,000	18,000	"	"	"	"	"	.....	.....	"	"	.....
	do	16,000	12,000	17,000	"	"	"	"	"	.....	.....	"	"	.....
	do	21,000	20,000	26,000	"	"	"	"	"	Yes,	Yes,	"	"	Yes,

TABLE No. 4—CONTINUED.

Number of Colliery	NAME OF COLLIERY.	AMOUNT OF VENTILATION PER MINUTE AT			Is the air conducted to the face of the workings systematically	Are the doors hung on main roads so to close of their own accord	Are there double doors on main traveled roads	Is there an extra door in case of an accident to any of the others	Are there attendants at main doors	Is the mine examined every morning before persons are allowed to enter	Is the mine examined every evening to see that the main doors are closed	Has the amount of ventilation been measured and reported	Is the mining boss a competent and practical man	Is there an assistant or fire boss in the mine
		Intake	Face of workings	Outcast										
54	Mt. Pleasant		9,460		Yes,	Yes,	Yes,	Yes,	Yes,			Yes,	Yes,	
	do	24,900	17,240	25,250	"	"	"	"	"			"	"	
	do				"	"	"	"	"			"	"	
55	Park	6,000	5,000	7,000	"	"	"	"	"			"	"	
56	Diamond shaft	36,870	26,180	44,980	"	"	"	"	"			"	"	
	do	20,000	19,800	20,200	"	"	"	"	"			"	"	
	do	62,000	50,000	63,000	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
57	Diamond slope	32,640	32,270	32,720	"	"	"	"	"	"	"	"	"	
58	Tripp slope	22,000	18,600	21,600	"	"	"	"	"			"	"	
59	Brisbin	25,000	24,400	26,100	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
60	Cayuga	38,200	33,650	44,250	"	"	"	"	"	"	"	"	"	
61	Von Storch	40,000	22,000	42,000	"	"	"	"	"	"	"	"	"	
	do	21,200	20,000	22,000	"	"	"	"	"	"	"	"	"	
	do	90,000	80,600	95,000	"	"	"	"	"	"	"	"	"	
62	Leggitt's Creek	39,000	24,120	39,200	"	"	"	"	"	"	"	"	"	
	do	63,400	43,220	63,500	"	"	"	"	"	"	"	"	"	
63	Marvin shaft	30,000	12,000	31,200	"	"	"	"	"	"	"	"	"	
64	Rolling Mill	6,000	4,000	7,200	"	"	"	"	"			"	"	
	do	6,500	4,200	8,000	"	"	"	"	"			"	"	
65	Pine Brook	40,000	30,000	45,000	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
66	Fair Lawn	8,000	7,500	8,500	"	"	"	"	"	"	"	"	"	
67	Green Ridge	39,680	25,500	45,000	"	"	"	"	"	"	"	"	"	
68	No. 2 shaft	6,180	6,000	6,900	"	"	"	"	"			"	"	
	No. 2 slope				"	"	"	"	"			"	"	
69	Roaring Brook	48,120	49,000	54,580	"	"	"	"	"			"	"	
	do	48,000	48,500	54,080	"	"	"	"	"			"	"	
	do	47,900	50,000	54,900	"	"	"	"	"			"	"	
70	Gipsy Grove	8,400	8,150	8,480	"	"	"	"	"			"	"	
	No. 4 shaft	8,000	7,780	8,210	"	"	"	"	"			"	"	
	Finnerty's tunnel	8,000	7,800	8,200	"	"	"	"	"			"	"	
	Smith's tunnel	8,560	8,490	8,640	"	"	"	"	"			"	"	
	Sawyer's tunnel	9,350	9,000	9,890	"	"	"	"	"			"	"	
71	Elk Hill tunnel	18,000	12,000	20,000	"	"	"	"	"			"	"	
72	Dip mines	20,000	18,240	25,000	"	"	"	"	"			"	"	
73	Eddy Creek	64,000	38,250	70,000	"	"	"	"	"			"	"	
74	No. 1 slope	26,000	18,970	30,000	"	"	"	"	"			"	"	
75	Grassy Island	54,000	36,240	60,600	"	"	"	"	"			"	"	
76	Filer	4,200	2,200	4,650	"	"	"	"	"			"	"	
	do	8,440	3,640	8,730	"	"	"	"	"			"	"	
77	Winton	23,720	8,870	27,000	"	"	"	"	"			"	"	
	do	14,400	4,720	7,940	"	"	"	"	"			"	"	
78	Eaton	5,200	1,800	5,560	"	"	"	"	"			"	"	
	Eaton, No. 1	14,625	5,200	30,000	"	"	"	"	"			"	"	
	Eaton, No. 2	14,000	5,000		"	"	"	"	"			"	"	
79	White Oak	17,500	12,200	18,230	"	"	"	"	"			"	"	
80	No. 1 shaft	54,090	50,000	55,860	"	"	"	"	"			"	"	
81	Jermyn's slope	50,000	40,000	58,000	"	"	"	"	"			"	"	
82	Erie	18,000	5,000	20,000	"	"	"	"	"			"	"	
83	Powderly	25,000	8,000	26,400	"	"	"	"	"			"	"	
84	Powderly Rock tun	7,000	2,500	7,500	"	"	"	"	"			"	"	
85	No. 1 slope	16,240	9,400	17,320	"	"	"	"	"			"	"	
86	White Bridge	14,000	6,800	14,800	"	"	"	"	"			"	"	
87	No. 3 shaft	15,000	7,200	15,960	"	"	"	"	"			"	"	
88	Coal Brook	20,000	11,240	20,500	"	"	"	"	"			"	"	
89	Breaker	20,000	16,400	20,500	"	"	"	"	"			"	"	
90	Lackawanna	14,000	12,200	14,600	"	"	"	"	"			"	"	
91	Valley	14,000	8,500	14,600	"	"	"	"	"			"	"	
92	Mill Ridge	13,000	7,500	14,100	"	"	"	"	"			"	"	
93	Jefferson	14,200	8,600	14,980	"	"	"	"	"			"	"	
94	Midland	20,000	9,000	20,840	"	"	"	"	"			"	"	
95	Chestnut Hill	4,500	3,200	4,800	"	"	"	"	"			"	"	
96	No. 12 shaft	15,750	13,500	16,500	"	"	"	"	"			"	"	
97	Law shaft	29,600	27,000	32,000	"	"	"	"	"	Yes,	Yes,	"	"	Yes,
98	Nealon & Gilmartin	5,240	3,410	5,530	"	"	"	"	"			"	"	
99	Horan	5,800	3,650	6,040	"	"	"	"	"			"	"	
100	Elk Creek	3,100	1,850	3,240	"	"	"	"	"			"	"	
101	Rackett's Brook													
102	Williams' breaker													
103	Screens at Dunmore													
104	No. 6½ breaker													
105	No. 1 pumping shaft, Pittston													
106	No. 2 pumping shaft, Pittston													
107	No. 3 pumping shaft, Pittston													
108	No. 2 breaker, Pittston													
109	Campbell & Son, Scr.													

TABLE No. 4—CONTINUED.

Number of colliery	Depth of shaft in feet	Width of shaft in feet	Length of shaft in feet	Length of slope in feet	Width of slope in feet	Height of slope in feet	Angle of slope in feet	Length of tunnel to coal	Length of plane in the mines	Angles of slopes in the mines	Length of slopes in the mines	Angles of slopes in the mines in degrees	How wide are headings in feet?	How wide are air-ways in feet?	How wide are chambers in feet?	How wide are pillars in feet?	Number of mine cars	What is the nature of the roof?
1.	.....	....	....	1,010	11	8	30	.....	.....	....	.....	....	10	15	24	14-18	66	Bony coal
2.	.....	....	....	312	12	8	19	150	.....	....	.....	....	10	15	24	18	60	Rock and slate
3.	312	$9\frac{1}{2}$	16	.....	.....	.....	.....	.....	200 300	$9\frac{1}{2}$ $5\frac{1}{4}$	.....	....	10	15	24	14-18	92	Slate
4.	257	$9\frac{1}{2}$	16	.....	.....	.....	.....	.....	450	$8\frac{1}{4}$	.....	....	10	15	24	14-18	80	...do
5.	302	10	$14\frac{1}{2}$	.....	.....	.....	.....	.....	195	9	.....	....	10	15	24	14-18	59	...do
6.	312	$9\frac{1}{2}$	16	.....	.....	.....	.....	.....	96 350	$5\frac{3}{4}$ $8\frac{1}{4}$	.....	....	10	15	24	14-18	82	Slate and coal
7.	182	$9\frac{1}{2}$	16	.....	.....	.....	.....	.....	430	$5\frac{3}{4}$	700	4	10	15	24	14-18	88	Slate
8.	.....	....	....	184	9	6	$7\frac{1}{8}$	.....	200	$7\frac{1}{2}$	674	$5\frac{3}{4}$	10	15	24	14-18	115	...do
9.	433	10	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10.	.....	....	....	130	15	10	19	.....	.....	....	130	19	10	14	24	15	75	Rock
11.	This	vei	u h	as be	en	wo	rke	d on	ly	fou	r m	on	th	s in	187	5.	.....	.....
12.	.....	....	....	42	10	7	.....	.....	.....	.....	.....	....	10	15	24	14-18	21	Rock
	132	12	$16\frac{1}{2}$	.....	.....	.....	.....	.....	470	$5\frac{1}{4}$	.....	....	10	15	24	14-18	68	Slate
13.	100	10	12	.....	.....	.....	.....	.....	150 300 350	$9\frac{1}{2}$ $8\frac{1}{8}$ $8\frac{1}{8}$	250	$5\frac{3}{4}$	10	15	24	14-18	63	...do
	150	12	17	.....	....	..	.....	.....	250 300 400	$5\frac{3}{8}$ $9\frac{1}{2}$ $8\frac{1}{8}$	.....	....	10	15	24	14-18	87	...do
	330	12	$3\frac{1}{2}$	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	15	24	14-18	80	...do
14.	206	$9\frac{1}{2}$	14	.....	.....	.....	.....	.....	230 300 400	$9\frac{1}{8}$ $8\frac{1}{8}$ $5\frac{1}{4}$	.....	....	10	15	24	14-18	80	Slate and rock
15.	9	$9\frac{1}{2}$	$14\frac{1}{2}$	778	10	6	8^{3}_{8}	.....	.....	.....	250	19	10	15	24	14-18	40	Slate
16.	.....	....	....	450	10	10	19	.....	.....	....	.....	....	10	15	24	12	60	Rock
	.....	....	....	650	10	10	19	.....	70	25	.....	....	10	15	24	12	60	Slate
17.	150	10	16	.....	.....	.....	.....	.....	.....	.....	.....	....	10	15	24	12	74	Bony coal
18.	.....	....	....	.....	.....	.....	.....	75	.....	.....	.....	....	10	18	30	12	42	Rock
19.	.....	....	....	.....	.....	.....	.....	90	.....	.....	.....	....	14	12	21	17	30	...do
20.	110	10	19	.....	.....	.....	.....	.....	275	7	250	10	10	15	20	15	48	Rider coal
21.	175	12	16	.....	.....	.....	.....	.....	.....	.....	.....	....	12	12	24	15	33	Rock
22.	.....	....	....	.....	.....	.....	.....	500	111	6	.....	....	12	12	24	14	28	Slate
23.	100	10	16	.....	.....	.....	.....	.....	.....	.....	400	12	14	20	30	15	62	Slate and rock
24.	.....	....	....	390	10	7	15	.....	.....	.....	.....	....	10	10	24	15	18	Rock
	.....	....	....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....
25.	147	12	20	.....	.....	.....	.....	.....	.....	.....	450	3	12	12	24	12	72	Slate
26.	.....	....	....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....
27.	.....	....	....	.....	.....	.....	.....	.....	.....	.....	.....	....	10	15	24	18	20	Rock
28.	146	12	$16\frac{1}{2}$	.....	.....	.....	.....	.....	205	$8\frac{1}{4}$	590	3	10	15	24	18	76	...do
29.	113	12	$16\frac{1}{4}$	.....	.....	.....	.....	.....	500	$5\frac{1}{2}$	900 1000	$2\frac{1}{2}$ $2\frac{1}{2}$	10	15	24	18	76	...do
30.	.....	....	....	.....	.....	.....	.....	18	600	12	580	15	10	12	30	15	115	...do
31.	.....	....	....	.....	.....	.....	.....	120	927	$8\frac{1}{2}$	.....	....	10	13	30	15		Slate
32.	219	10	14	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....
	219	10	14	.....	.....	.....	.....	.....	.....	.....	.....	....	10	10	24	14	65	Hard rock
	.....	....	....	270	8	6	5	.....	.....	.....	270	1	10	10	24	15		Blue slate
33.	96	10	45	100	9	8	12	.....	.....	.....	.....	....	18	18	27	12	90	Rock
34.	302	10	35	750	8	6	18	.....	.....	.....	.....	....	12	15	30	18	112	Slate
35.	180	10	19	.....	.....	.....	.....	.....	.....	.....	.....	....	12	15	30	18	166	...do
36.	.....	....	....	.....	.....	.....	.....	.....	.....	.....	.....	....	12	15	30	18	.....	...do
37.	.....	....	....	.....	.....	.....	.....	90	.....	.....	.....	....	16	30	12	12		...do
	.....	....	....	.....	.....	.....	.....	60	.....	.....	.....	....	16	30	12	12	250	...do
	.....	....	....	.....	.....	.....	.....	100	.....	.....	.....	....	16	30	12	12		...do
38.	.....	....	....	400	16	7	7	.....	.....	.....	.....	....	16	30	12	12		...do
39.	.....	....	....	.....	.....	.....	.....	.....	.....	.....	.....	....	12	12	25	15	22	Rock
40.	175	12	21	230	9	7	7	.....	.....	.....	.....	....	12	12	25	15		...do
	.....	....	....	.....	.....	.....	.....	200	.....	.....	.....	....	12	12	25	15	114	...do
	.....	....	....	.....	.....	.....	.....	209	.....	.....	.....	....	12	12	25	15		...do
41.	.....	....	....	400	6	6	20	.....	.....	.....	.....	....	12	20	20	15	9	...do
42.	.....	....	....	400	12	6	13	.....	.....	.....	.....	....	12	15	30	15	195	Slate
	.....	....	....	1,100	12	6	3	.....	.....	.....	.....	....	12	15	30	15		...do
43.	300	10	21	.....	.....	.....	.....	351	$15\frac{1}{2}$	.....	.....	....	12	15	30	15	170	Rock
				.....	.....	.....	.....						12	15	30	15		Slate
44.	189	10	18	.....	.....	.....	.....	.....	.....	.....	.....	....	12	15	30	15	165	...do
45.	.....	....	....	310	14	7	11	.....	.....	.....	.....	....	12	15	30	15		...do
	.....	....	....	710	14	7	11	.....	.....	.....	.....	....	12	15	30	15		...do
46.	276	10	22	.....	.....	.....	.....	.....	.....	.....	.....	....	12	15	30	18	157	...do
	238	10	22	.....	.....	.....	.....	.....	.....	.....	990	2	12	15	30	18		...do
47.	320	10	34	.....	.....	.....	.....	.....	.....	.....	.....	....	12	15	30	18	174	...do
48.	395	10	35	80	.....	.....	$22\frac{1}{2}$	.....	.....	.....	.....	....	12	15	30	18	158	...do

TABLE No. 4—CONTINUED.

Number of colliery	Depth of shaft in feet	Width of shaft in feet	Length of shaft in feet	Length of slope in feet	Width of slope in feet	Height of slope in feet	Angle of slope in feet	Length of tunnel to coal	Length of planes in the mines	Angles of slopes in the mines	Length of slopes in the mines	Angles of slopes in the mines in degrees	How wide are headings in feet?	How wide are air-ways in feet?	How wide are chambers in feet?	How wide are pillars in feet?	Number of mine cars	What is the nature of the roof?
49.	250	10	27										12	15	30	18		Slate
	350	10	27	350	10	27	16						12	15	30	18	103	...do
50.	292	10	21					800					12	15	30	15	194	...do
													12	15	30	15		...do
51.	125	9	18								500	7						
											600	7	12	15	30	15	224	...do
52.	263	10	18						255	15½			12	15	30	15	107	...do
													12	15	30	18		...do
53.	136	10	30										10	10	30	15		Rock
	167	10	30					400					10	10	30	15	195	...do
	300	10	25										10	10	30	15		Coal and slate
	300	10	25										10	10	30	15		Hard rock
54.													11	11	30	22	140	Slate
				1,400	8	6	22						11	11	28	20		...do
																		...do
55.				800	8	6	4						12	12	30	15	40	Rock and slate
56.	166	10	18										12	18	30	18	172	Slate
	216	10	18						225	11			12	18	30	18		...do
									306	21½			12	15	30	10	188	...do
57.				375	21	7	22½				480	2⅓	12	15	30	18	161	...do
58.				315	10	6	15						12	15	30	18	133	...do
59.	378	10	36										12	15	30	18	90	...do
60.	368	10	32½										12	15	30	18	154	...do
61.	532	9	34						650	4			10	12	30	20	40	...do
				1,300	15	7	10		600	4⅔			10	12	30	20	204	Fire-clay
									650	4			10	12	30	20		Bony coal
62.	330	10	24								150	5¾	9	12	30	22	194	Fire-clay
		10	24										9	12	30	22		Bony coal
63.	456	10	45½										9	12		20	8	...do
64.				2,000	10	7	6½						10	12	30	15	110	Rock
													10	12	30	15	100	...do
65.	175	22	10										10	12	30	15	210	Slate and rock
66.				322	10	7½	24½		218	7			15	15	30	15	31	Rock
67.				318	12	7	19	300	500	8			14	12	28	17	140	Slate
									600	8								
68.	100	12	16								1,650	5¾	12	15	30	15	70	Sandstone
				1,100	12	7	19						12	15	30	15	24	...do
													12	12	26	22		Slate
69.	294	10	21										12	12	26	22	130	Soft rock
													12	12	26	22		...do
70.	167	12	18										10	15	30	15	65	Sandstone
	95	12	17										10	15	30	15		...do
								260					10	15	30	15	70	Slate and sandstone
								50					10	15	30	15	70	...do...do
								100					10	15	30	15	56	...do...do
71.								200					10	14	36	15	125	Bony coal
72.								45					10	14	36	15	65	Slate rock
	96																	
73.	383	10	27										10	14	36	15	189	Fire-clay and rock
	408																	
74.				450	11	7	8						10	14	36	15	139	Fire-clay
75.	365	10	23								250	8	10	14	35	15	185	Rock
76.				490	11	7	8						12	12	30	15	80	Slate
								175					12	12	30	15		...do
77.				250	13	7	15						12	12	30	15	120	...do
								80					12	12	30	15		...do
78.	36	7	10	547	13	7	9½						10	12	36	16		Sandstone
													10	12	36	16	210	...do
													10	12	36	16		...do
									450	8								
79.				1,200	10	7	4½		450	9½			12	14	36	15	164	...do
									725	5								
80.	90	9	22						216	16								
									336	11	900	4	12	12	36	12	130	Rock
									540	7⅓								
81.				100	11	7	30		540	7			12	12	36	12	140	...do
									600	7½								
82.	183	10	21										10	10	30	15	97	...do
83.				700	9	7	9						10	14	36	15	129	...do
84.													10	14	36	15	30	Slate and bony coal
85.				330	9	6	8						10	14	36	15	72	...do...do
86.									300	8			10	14	36	15	86	Slate and rock
87.	76	9½	27										10	14	36	15	116	Slate and bony coal
								400	450	9								
88.								375					10	14	36	15	100	Rock
								825	450	16								
89.								200					10	14	36	15	36	...do

TABLE No. 4—CONTINUED.

Number of colliery	Depth of shaft in feet	Width of shaft in feet	Length of shaft in feet	Length of slope in feet	Width of slope in feet	Height of slope in feet	Angle of slope in feet	Length of tunnel to coal	Length of planes in the mines	Angles of slopes in the mines	Length of slopes in the mines	Angles of slopes in the mines in degrees	How wide are headings in feet?	How wide are air-ways in feet?	How wide are chambers in feet?	How wide are pillars in feet?	Number of mine cars?	What is the nature of the roof?
90,								330					10	14	36	15		Rock
91,								200					10	14	36	15	40	...do
92,								150	400	5			10	14	36	15	64	...do
93,								156					10	14	36	15		...do
94,								200					10	14	36	15	100	...do
95,								50					8	6	30	10	43	Slate and rock
96,	136	10	13½						190	5½			12	15	30	14-18	60	Rock
97,	2.7	12	24½										12	15	30	14-18	49	...do
98,								43					12	14	30	14	8	...do
99,								50					12	14	30	14	12	...do
100,								164					12	12	24	12	9	...do
101,																	12	
102,																	9	
103,																	12	
104,																	9	
105,																		
106,																		
107,																		
108,																		
109,																	6	
	13,223			20,973				7,135	17,931		11,964						10,015	

TABLE No. 4—CONTINUED.

Number of colliery	Date when mine was first opened	What is the name of the vein of coal worked?	What is the average thickness of each vein?	Do parties having charge know their duty in case of death or serious accident?	Are the engineers experienced, competent and sober men?	Are there more than ten persons allowed to ride on the safety-carriage at one time?	Is there a house for men to wash and change their clothes in?	Are persons allowed to ride on loaded cars in shafts, slopes or on planes?	Length of planes outside	Angles of planes outside	Length of wire rope used	Size of wire rope	Number of tons of coal used at collieries for steam	Number of horses and mules at each colliery
1.	1850..	Pittston or 11-foot..	10	Yes,	Yes,	.....	No..	No..	.....	....	1,400	1¼	3,054	11
2.	1835..	Bottom	9	"	"	.....	"	"	330	12	1,400	1¼	1,120	15
3.	June, 1855..	Pittston or 14 foot..	10	"	"	No..	"	"	.....	....	725 1,000	1⅛ 1⅛	625	21
4.	Apr., 1869..	....do	10	"	"	"	"	"	.....	....	1,260	1⅛	560	18
5.	1871..	....do	10	"	"	"	"	"	883	6½	2,143	1¼	490	11
6.	June, 1854..	....do	12	"	"	"	"	"	.....	....	1,960	1⅛	1,842	18
7.	" 1864..	....do	11	"	"	"	"	"	.....	....	550 1,630	1¼ 1⅛	2,123	17
8.	1853..	....do	11	"	"	"	"	"	510 224	12¼ 14¾	1,530 1,380	1¼ 1⅛	647	21
9.	1875..	Powder Mill.....	7	"	"	"	"	"	.....	....	1,390	1¼	893	.....
10.	1850..	Third	.....	"	"	"	"	"	.....	....	330 339	1 1¼	1,680	8
	1850..	Checkered.....	.....	"	.....	.....	.....	.....	.....	....	.....	...	.....	.....
11.	Apr., 1874..	Pittston	11	"	Yes,	.....	No..	No..	.....	....	900	1⅛	67	6
12.	1870..	Pittston	9	"	"	No..	"	"	357	8⅜	1,172 760	1⅛ 1⅛	548	17
13.	Dec., 1867..	Checkered or 7-foot	6	"	"	"	"	"	.....	....	1,239 1,090	1⅛ 1⅛		
	1867..	Pittston	10	"	"	"	"	"	.....	....	1,556 1,330	1⅛ 1⅛	2,792	18
	1875..	....do	10	"	"	"	"	"	.....	....	550	1⅛	364	.....
14.	1861..	Check'd and Brown	10-8½	"	"	"	"	"	.....	....	1,527 630	1⅛ 1⅛	865	15
15.	1874 1864	Pittston	8½	"	"	"	"	"	.....	....	450	1⅛	237	6
16.	1856..	Checkered.....	6	"	"	.....	"	"	.....	....	600 chain		2,688	23
	1874..	Pittston	10	"	"	.....	"	"	.....	....	200	1		
17.	1873..	Checkered.....	6	"	"	No..	"	"	.....	....	563	1¼	3,091	23
	1855..	Pittston	.....	.....	.....	.....	.....	.....	.....	....	.....	...		
18.	Feb., 1864..	Checkered.....	6	Yes,	Yes,	.....	No..	.....	135	16	265	1	459	5
19.	Aug., 1864..	....do	7	"	"	.....	"	.....	.....	....	.....	...	470	9
20.	1856..	....do	7	"	"	No..	"	No..	.....	....	290	1¼	3,360	20
	.....	.....	.....	.....	.....	.....	"	.....	.....	....	350	1¼		
21.	.....	Pittston	8	Yes,	Yes,	Yes,	"	No..	.....	....	800	1¼	2,016	6
22.	May, 1865..	....do	8	"	"	.....	"	"	.....	....	.....	...	672	5
23.	1840..	Butler	7	"	"	No..	"	"	750	15	2,950	1¼	2,688	26
	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	...		
24.	1871..	Butler	7	Yes,	Yes,	.....	No..	No..	...	...	1,200 600 300	1¼ 1½ 1	2,016	25
	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	...		
	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	...		
25.	Sept., 1870..	Stark	7	Yes,	Yes,	No..	No..	No..	140	....	1,417 600	1⅛ 1¼	4,032	29
26.	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	...		
	1873..	.....	.....	.....	.....	.....	.....	.....	172	12	.....	...	.....	4
27.	1864..	Brown	8	Yes,	Yes,	.....	No..	.....	.....	....	.....	...		
28.	Feb., 1869..	Powder Mill.....	6½	"	"	No..	"	No..	.....	...	370 1,346	1⅛ 1⅛	1,344	17
29.	June, 1869..	Powder Mill.....	9	"	"	"	"	"	.....	....	650 2,550	1⅛ 1⅛	2,720	28
30.	1873..	Stark	7	"	"	.....	"	"	250 250	10 20	1,150 600	1 ⅝	2,352	23
31.	1873..	....do	7	"	"	.....	"	"	.....	....	1,050	1		
32.	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	700	1¼		
	Apr., 1869..	Stark and P. Valley	7-3	Yes,	Yes,	No..	No..	No..	.....	....	700	1¼	4,432	21
	" 1869..	Brown's	7	"	"	.....	"	"	330	13	400 500	1 1⅛		
33.	May, 1872..	G or Big.....	7	"	"	No..	"	"	.....	....	636	1½	1,344	21
34.	Mar., 1871..	1 or Clark	14	"	"	"	"	"	.....	....	1,200	1⅛	4,032	29
35.	Aug., 1867..	1	9	"	"	"	"	"	.....	....	1,050	1¼	4,166	45
36.	Oct., 1869..	F or Roek	6	"	"	.....	"	.....	.....	....	.....	...		
37.	" 1864..	No. 5.....	6	"	"	.....	"	.....	.....	....	.....	...		
	" 1874..	No. 5.....	6	"	"	.....	"	.....	.....	....	674	1⅛	4,032	57
	" 1875..	No. 2.....	4	"	"	.....	"	.....	.....	....	.....	...		
38.	" 1875..	No. 5.....	6	"	"	.....	"	No..	275	10	900	1⅛		
39.	Sept., 1856..	No. 2.....	7	"	"	.....	"	.....	300	8	800	1	1,344	17
40.	Nov., 1873..	No. 5.....	6	"	"	No..	Yes,	No..	.....	....	600	1¼	2,688	49
	Dec., 1870..	No. 5.....	6	"	"	.....	"	.....	200	19	400	1		
	" 1870..	No. 3.....	9	"	"	.....	"	.....	.....	....	525	1		
41.	.....	Rolling Mill	5½	"	"	.....	No..	.....	.....	....	.....	...	448	3
42.	May, 1856..	G.....	12	"	"	.....	"	No..	345	11	1,750	1¼	1,232	47
	Mar., 1874..	1	9	"	"	.....	"	"						
43.	.....	F.....	7	"	"	No..	"	No..	.....	....	2,450	1⅛	3,362	39
	June, 1868..	G.....	14	"	"	"	"	"	262	18				

TABLE No. 4—CONTINUED.

Number of colliery	Date when mine was first opened	What is the name of the vein of coal worked?	What is the average thickness of each vein?	Do parties having charge know their duty in case of death or serious accident?	Are the engineers experienced, competent and sober men?	Are there more than ten persons allowed to ride on the safety-carriage at one time?	Is there a house for men to wash and change their clothes in?	Are persons allowed to ride on loaded cars in slants, slopes or on planes?	Length of planes outside	Angles of planes outside	Length of wire rope used	Size of wire rope	Number of tons of coal used at collieries for steam	Number of horses and mules at each colliery
44.	Aug {1856 / 1874}	G and I	12-9	Yes.	Yes,	No..	No..	No..	.....	....	900	1¼	.....	14
45.	" 1856 .	E	6	"	"	.....	"	"	.....	....	.....	....	.....	
	" 1856..	F	7	"	"	.....	"	"	.....	....	.....	....	.....	
46.	June, 1861.	E	7½	"	"	No..	"	"	295	13	1,525	1	2,688	14
	" 1861..	F	8	"	"	"	"	"	.....	....	850	1¼		
47.	" 1868..	G	12	"	"	"	"	"	.....	...	1,300	1¼	5,376	24
48.	Oct., 1870..	G	9	"	"	"	"	"	.....	....	1,250	1¼	4,704	27
49.	Sept., 1869..	F	8	"	"	"	"	"	75	10	1,100	1¼	3,164	8
	Feb., 1874..	I	9	"	"	.....	"	"	.....	....	300	1		
50.	May, 1860..	G	10	"	"	No..	"	"	200	20	250	1¼	3,194	37
	" 1860..	I	8½	"	"	"	"	"			1,150	1¼		
51.	" 1857..	E	5½	"	"	"	"	"	.....	....	1,150	1	5,913	50
											850	1¼		
52.	Jan., 1869..	G	8	"	"	"	"	"	180	8	2,060	1¼	3,696	30
	" 1869..	F	12	"	"	"	"	"	.....	....				
53.	Oct., 1869..	E	6	"	"	"	"	"	150	30	1,030	1¼	5,376	42
	" 1869..	F	7½	"	"	"	"	"	.....	....	.....	....		
	July, 1873 .	G	14	"	"	"	"	"	.....	....	770	1¼		
	June, 1874..	I	6	"	"	"	"	"	.....	....	.....	....		
54.	1856..	E	7	"	"	.. ...	"	"	.....	....	1,400	1⅜	3,360	30
	1856..	F	7	"	"	.....	"	"	.....	....				
	1856..	G	12	"	"	.....	"	"	.....	....				
55.	1845..	E	6	"	"	.....	"	"	.....	....	1,000	1¼	806	16
56.	May, 1862..	E	6½	"	"	No..	"	No..	.....	....	600	1¼	4,301	24
	" 1862..	F	7	"	"	"	"	"	.....	....	786	1¼		
	" 1856..	G	12	"	"	"	"	"	330	22½	820	1	4,301	49
											730	1¼		
57.	July, 1864..	G	14	"	"	.....	"	"	.....	....	700	¾	5,576	33
											1,200	1¼		
58.	1855..	E	10	"	"	.....	"	"	....	....	700	1	4,082	27
59.	Nov., 1871..	G	10	"	"	No..	"	"	480	11	600	1	2,688	5
											1,400	1¼		
60.	May, 1868..	G	10	"	"	"	"	"	.....	....	1,600	1¼	3,105	31
61.	1871..	I	5	"	"	"	"	"	.....	....	2,375	1½	8,689	66
	1855..	E	7	"	"	.....	"	"	400	16	1,375	1¼		
	1855..	G	9	"	"	.....	"	"	.....	....	2,325	1¼		
62.	1865..	E	7	"	"	No..	"	"	300	9½	2,350	1¼	8,664	46
	1865..	G	9	"	"	"	"	"			350	1		
63.	May, 1872..	G	9	"	"	"	"	"	... .	....	2,400	1¼	4,032	4
64.	" 1855..	Rolling Mill	4½	"	"	.....	"	"	.....	....	2,200	1¼	6,182	16
	Oct., 1864..	....do	4½	"	"	.....	"	"	.....	....	.....	....		10
65.	July, 1861..	I	8	"	"	No..	"	No..	.....	....	770	1¼	6,451	38
66.	June, 1872..	I	8	"	"	.....	"	"	165	33½	1,375	1	1,344	13
67.	Aug., 1868..	I	8	"	"	.....	"	"	175	8	.....	....	3,472	30
									200	16	525	1¼		
									200	19	2,300	1		
68.	June, 1868..	Upper and Middle,	5½	"	"	No..	"	"	.....	....	.....	1	2,003	13
	" 1874..	I	5½	"	"	.....	"	"	.....	....	2,100	1½		
69.	1869..	First	4½	"	"	No..	"	"	2,200	12	2,200	1½	2,688	44
	1869..	Second	4½	"	"	"	"	"	.....	....	2,660	¾		
											16	....		
											1,000	1¼		
	1869..	Third	4½	"	"	"	"	"	800	15	850	1¼		
											425	1		
70.	June, 1870..	Upper and I	5½-5	"	"	"	"	"	450	12	900	1¼	.....	8
											600	1¼		
	May, 1874..	Middle	4½	"	"	"	"	"	.....	...	250	1¼	1,058	10
	June, 1870..	Upper	4½	"	"	.....	"	.....	.....	.....	.....	.....		
	" 1870..	I	4½	"	"	.....	"	.....	.....	.....	.....	.....	.. ...	8
	" 1870..	I	4½	"	"	.....	"	.....	.....	.....	.....	.....	.....	8
71.	May, 1860..	Top	6	"	"	.....	"	.....	275	18¾	500	1	1,120	35
72.	" 1859..	No. 1	7	"	"	.....	"	.....	300	14	500	1	.....	7
73.	Dec. {1862 / 1875}	No. 2 and Grassy I.	5½	"	"	No..	"	.....	.....	....	1,150	1¼	8,680	23
											1,150	1¼		
74.	" 1864..	No. 2	5½	"	"	.....	"	.....	.....	.....	650	1⅛	2,240	31
75.	Apr., 1860..	Grassy Island	11	"	"	No..	"	.....	.....	.....	950	1¼	6,451	35
											325	¾		
76.	June, 1874..	No. 4	8½	"	"	.....	"	No..	...	....	1,500	1	1,887	21
									250	18	500	1¼		
	" 1874..	Grassy Island	8	"	"	.....	"	.....	.....	.....	.....	.....		
77.	Nov. 1873..	No. 4	8	"	"	.....	"	"	.....	.....	600	1¾	3,770	26
	" 1873..	No. 4	8	"	"	.....	"	.....	.....	.....	.....	.....		
78.	June, 1874..	Archbald	10	"	"	Yes,	"	No..	.....	.....	150	1⅛	1,736	51
	May, 1856..	....do	10	"	"	... ..	"	.....	500	11	600	1⅛		
	" 1856..	....do	10	"	"	.....	"	.....	350	10	525	1⅛		
79.	Apr., 1849..	....do	9½	"	"	.....	"	No..	300	9½	1,575	1⅛	3,472	28
											700	1¼		

TABLE No. 4—CONTINUED.

Number of colliery	Date when mine was first opened	What is the name of the vein of coal worked?	What is the average thickness of each vein?	Do parties having charge know their duty in case of death or serious accident?	Are the engineers experienced, competent and sober men?	Are there more than ten persons allowed to ride on the safety-carriage at one time?	Is there a house for men to wash and change their clothes in?	Are persons allowed to ride on loaded cars in shafts, slopes or on planes?	Length of planes outside	Angles of planes outside	Length of wire rope used	Size of wire rope	Number of tons of coal used at collieries for steam	Number of horses and mules at each colliery
80.	May, 1859..	Carbondale	11	Yes,	Yes,	Yes.	No..	No..			2,460	1⅛	3,360	23
81.	July, 1868..	....do	11	"	"		"	"			4,450.	1⅛	1,344	28
82.	1871..	....do	9	"	"	Yes.	"	"	500		2,000	1	4,032	20
											880	1¼		
83.	Feb., 1863..	Top and bottom	5½	"	"		"	"			1,890	1⅛	2,240	15
84.	" 1853..	Top	5½	"	"		"							12
85.	" 1850..	Bottom	6	"	"		"				550	1⅛	1,344	14
											700	1		
86.	" 1863..	Top and bottom	5½-6	"	"		"				480	1⅛		12
87.	April, 1852..	Bottom	6	"	"	Yes,	"				275	1⅛	1,792	19
88.	May, 1860..	....do	5½	"	"		"				500	1⅛		24
											600	1¼		
89.	" 1866..	....do	5½	"	"		"		200	10	500	1¼		3
90.	1865..	....do	5½	"	"		"		200	10	450	1⅛		3
91.	April, 1864..	....do	5½	"	"		"		350	8⅓	500	1⅛	2,315	12
92.	1865..	Top	4½	"	"		"		350	8¼	500	1⅛		12
											440	1		
93.	June, 1863..	....do	4½	"	"		"							
94.	April, 1872..	Bottom	5½	"	"		"							9
95.	June, 1872..	....do	5½	"	"		"						224	4
96.	Sept., 1872..	Powder Mill	9	"	"	Yes,	"	No..	160	9¼	690	1⅛	1,100	11
											600	1⅛		
97.	" 1872..	....do	8	"	"	"	"	"	210	11½	450	1⅛	392	10
											680	1⅛	2,352	
98.	1855..	Bottom	5½	"	"		"		50	8½	75	¾	140	5
99.	1863..	Top and bottom	5½-6	"	"		"		100	6½	140	¾	224	19
100.	Nov., 1873..			"	"		"						224	12
101.									400	8⅓	800	1⅛	2,800	4
102.		Top coal							600		700	⅞	350	12
103.													1,120	32
104.													400	12
105.													736	
106.													377	
107.													627	
108.													392	1
109.													140	8
									18,228		146,664		236,400	2,113

Total length of wire rope, 146,664 feet=27.85 miles.
There are 600 feet of ⅝-inch rope.
There are 3,840 feet of ¾-inch rope.
There are 700 feet of ⅞-inch rope.
There are 20,605 feet of 1-inch rope.
There are 51,814 feet of 1⅛-inch rope.
There are 61,955 feet of 1¼-inch rope.
There are 1,400 feet of 1⅜-inch rope.
There are 3,750 feet of 1½-inch rope.
There are 600 feet of chain.
There are 2,113 horses and mules working at the collieries.
Total depth of 62 shafts, 13,223 feet.
Total length of 38 slopes, 20,973 feet.
Total length of 24 tunnels, 8,135 feet.
Total length of 21 slopes in the mines, 11,964 feet.
Total length of 48 planes in the mines, 17,931 feet.
Total number of mine cars, 10,015.
Total length of 51 planes outside, 18,248 feet.

TABLE No. 5.—*Report of the condition of steam boilers and steam engines in the Eastern District of the Wyoming Coal Fields for the year ending 31st day of December, 1875.*

No. of colliery	Name of Colliery.	Number of boilers	Dimensions. Length in ft.	Dimensions. Diameter in inches	Pressure	Steam gauge or steam valve	Date of boiler examination	Present Condition.	Number of hoisting engines	How many horse power	How many pumping engines	How many horse power	Number of engines in mines	How many horse power	Number of breaker engines	Horse power of each	Number of fan engines	How many horse power
1..	Everhart colliery	5	30	30	60	Yes.	December 15..	Good and safe	1	40	.....	.....	.....	.....	1	40	.....	.....
2..	No. 2 or Port Griffith	3	46	30	75	"	September 26..	do	1	40	.....	.....	4	120	.....	.....	.....	.....
.....	do	3	46	30	75	"	....do.....27..	do	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3..	No. 6 shaft	3	36	30	75	"	....do.....18..	do	1	25	.....	.....	.....	.....	.....	.....	.....	.....
.....	No. 3 breaker	3	36	30	75	"	....do.....18..	do	.....	.....	.....	.....	.....	.....	1	40	.....	.....
4..	No. 5 shaft	3	35	30	75	"	....do.....18..	do	1	40	1	10	.....	.....	.....	.....	.....	.....
5..	No. 11 shaft	3	36	30	75	"	....do.....18..	do	1	40	.....	.....	.....	.....	.....	.....	.....	.....
6..	No. 7 shaft	3	36	30	75	"	....do.....26..	do	1	40	1	120	1	10	.....	.....	.....	.....
7..	No. 4 shaft	3	35	30	75	"	....do.....25..	do	1	40	1	40	.....	.....	.....	.....	.....	.....
.....	do	4	35	30	75	"	....do.....26..	do	2	40	.....	.....	.....	.....	.....	.....	2	40
8..	No. 4 slope	2	20	30	75	"	....do.....26..	do	2	40	.....	.....	1	20	.....	.....	.....	.....
.....	do	3	36	30	75	"	....do.....26..	do	1	20	.....	.....	.....	.....	.....	.....	.....	.....
9..	No. 9 shaft	3	36	30	75	"	....do.....26..	do	3	80	.....	.....	.....	.....	.....	.....	.....	.....
10..	No. 10 shaft	3	36	30	75	"	....do.....26..	do	4	115	2	50	.....	.....	.....	.....	.....	.....
.....	do	3	36	30	75	"	....do.....26..	do	.....	.....	1	30	.....	.....	1	40	.....	.....
.....	No. 10 shaft, new	6	36	31	75	"	New	do	1	40	.....	.....	1	40	.....	.....	.....	.....
11..	No. 8 shaft	5	36	31	75	"	August 26..	do	1	40	.....	.....	1	30	1	30	.....	.....
.....	No. 1 shaft, new	5	36	30	75	"	New	do	2	60	1	20	.....	.....	.....	.....	.....	.....
12..	New shaft at No. 6 slope	Takes steam from boilers at No. 8 shaft.						do	1	25	.....	.....	.....	.....	.....	.....	.....	.....
13..	No. 2 shaft, pumping	3	36	30	50	Yes.	September 25..	do	.....	.....	1	30	.....	.....	.....	.....	.....	.....
14..	No. 3 shaft, pumping	3	36	30	50	"	....do.....28..	do	.....	.....	1	30	.....	.....	.....	.....	.....	.....
15..	No. 2 breaker	5	36	30	80	"	October 21..	do	.....	.....	.....	.....	.....	.....	1	40	.....	.....
16..	Central breaker	3	36	30	75	"	September 19..	do	.....	.....	.....	.....	.....	.....	1	40	.....	.....
17..	Law shaft	3	36	30	75	"	....do.....26..	do	1	40	1	10	.....	.....	.....	.....	.....	.....
.....	do	3	36	30	75	"	....do.....27..	do	.....	.....	1	40	.....	.....	1	40	1	20
18..	No. 12 shaft	6	36	30	75	"	....do.....26..	do	1	40	1	40	.....	.....	.....	.....	.....	.....
19..	Dawson shaft	3	36	30	75	"	....do.....26..	do	1	20	1	.....	.....	.....	1	40	.....	.....
									2	20								
20..	Stark shaft	5	36	30	75	"	....do.....26..	do	3	80	5	70	.....	.....	1	25	.....	.....
21..	No. 1 tunnel	3	36	30	75	"	New	do	1	20	1	20	.....	.....	.....	.....	.....	.....
22..	No. 13 shaft	1	portable boiler; shaft just sinking.					do	2	20	.....	.....	.....	.....	.....	.....	.....	.....
23..	No. 2 shaft	3	36	30	80	Yes.	October 24..	do	1	40	.....	.....	1	15	.....	.....	.....	.....
24..	No. 6 breaker	3	36	30	80	"	September 27..	do	.....	.....	.....	.....	.....	.....	1	50	.....	.....
25..	Screens at Dunmore	3	36	30	80	"	October 16..	do	.....	.....	.....	.....	.....	.....	1	25	.....	.....
27..	Gipsy Grove	4	36	32	80	"	....do.....15..	do	2	70	.....	.....	.....	.....	1	30	.....	.....
28..	Alva Tompkin's	3	30	30	75	"	December 28..	do	1	45	1	30	.....	.....	.....	.....	.....	.....
.....	do	3	30	30	75	"	....do.....28..	do	.....	.....	2	35	.....	.....	1	30	.....	.....
29..	Seneca colliery	2	32	30	75	"	October 28..	do	1	60	.....	.....	.....	.....	.....	.....	.....	.....
.....	do	2	32	30	60 to 75	"	....do.....28..	do	.....	.....	.....	.....	.....	.....	1	30	.....	.....
30..	Ravine colliery	4	30	30	60 to 75	"	....do.....28..	do	1	60	.....	.....	.....	.....	1	40	.....	.....
31..	Twin colliery	2	30	30	60 to 75	"	....do.....28..	do	1	60	.....	.....	1	30	.....	.....	.....	.....
.....	do	2	30	30	60 to 75	"	....do.....28..	do	.....	.....	.....	.....	.....	.....	1	40	.....	.....
.....	do	2	30	30	60 to 75	"	....do.....28..	do	.....	.....	1	10	.....	.....	.....	.....	.....	.....
32..	Butler colliery	4	29	32	65	"	July 18..	do	1	40	.....	.....	1	10	.....	.....	.....	.....

	Butler colliery	3	28	32	65	Yes.	July 18..	Good and safe	1	20			1	20	1	40		
33..	Beaver colliery	3	33	36	75	"	December 11..	do							1	20		
34..	Rock Hill colliery	3	30	30	60	"	November 13..	do							1	30		
35..	Columbia colliery	1	32	30	60	"	September 6..	do							1	20		
36..	Phœnix colliery	3	26	34	60	"	....do.....27..	do	1	60								
	.....do	3	27	36	60	"	....do.....27..	do							1	30		
37..	Ontario colliery	8	30 5-6	36	65	"	December 21..	do	1	60					1	40		
38..	Hillside colliery	3	30	30	80	"	September 5..	do	2	160								
	.....do	2	30	30	80	"	....do.....5..	do					1	10				
	.....do	2	39	30	80	"	....do.....12..	do					1	25				
	..... do	2	30	30	80	"	....do.....12..	do							1	60		
	.....do	2	30	30	80	"	November 14..	do									1	40
39..	Spring Brook colliery	3	30	30	50	"	July 14..	do	2	90					1	40		
	.....do	3	30	30	50	"	....do.....14..	do	1	14								
40..	Carbon Hill colliery	6	28	26	70	"	December 6..	do	2	90	1	60						
	Carbon Hill breaker	2	36	30	50	"	....do..... 6..	do							1	25		
	Carbon Hill slope	2	36 / 48	12 / 16	75	"	....do..... 1..	New; good and safe	1	15								
	.....do	2	locomotive boiler.			"	....do..... 1..	Good and safe	1	60								
	Carbon Hill, No. 1, shaft	4	36	28	70	"	....do..... 1..	do	1	35			1	35				
41..	Elliot, Koerner & Co.'s Sibley colliery	3	30	30	55	"	July 6..	do	2	80					1	40		
	.....do	3	30	30	55	"	....do..... 6..	do									1	20
42..	Corey breaker	3	30	30	65	"	December 12..	do	2	70								
	Greenwood slope	6	30	30	65	"	....do..... 9..	do	1	60					1	60		
	West Side slope	1	8	30	80	"	November 28..	do					1	23				
	.... do	2	locomotives.		120	"	December 5..	do	2	120								
43..	National anthracite colliery	4	32	34	75	"	October 8..	do	2	60					1	25		
44..	Meadow Brook	3	30	34	75	"	....do..... 8..	do	1	100								
	.....do	4	39	31	75	"	....do..... 8..	do							1	45		
45..	Stafford Brook, No. 2	This colliery was burned down Sept. 29, '75.						do							1	15		
46..	Rolling Mill	4	40	34	80	Yes.	October	do	2	60								
	.....do	3	30	36	80	"	....do	do					1	40				
47..	Pine Brook	6	30	36	80	"	....do	do	2	60			1	40				
	.....do	3	24	36	80	"	....do	do			1	75			1	60		
48..	Capouse	3	30	36	80	"	....do	do	2	80					1	70		
	.....do	3	30	36	80	"	....do	do					1	40			1	10
	.....do	3	30	36	80	"	....do	do	2	80								
	.....do	3	30	36	80	"	....do	do									1	60
49..	Mt. Pleasant colliery	4	25	30	80	"	December 27..	do	1	50								
	..... do	1	20	30	80	"	....do.....27..	do							1	35		
	.....do	1	16	42	80	"	....do.....27..	do	1	50								
50..	Park colliery	3 / 3	34	30	70 / 70	"	...do.....15 / ...do.....15	do	2	120					1	35		
51..	Fair Lawn colliery	4	30	30	75	"	November 5..	do	2	30					1	30		
52..	Green Ridge	6	40	34	65	"	October 6..	do	1	80	1	30			1	25		
	.....do	3	40	34	65	"	December 19 / October 13	do	1	50			1	25				
53..	Roaring Brook	3	25	30	75	"	October	do	2	70								
	.....do	4	36	36	75	"	....do	do					1	60	1	25		
	.....do	1	14	40	75	"	....do	do	2	80					1	20		
	.....do	1	12	40	75	"	....do	do	1	25								
54..	Jermyn's new shaft	3	34	30	75	"	New	do										
	Green Ridge	3	34	30	75	"	....do	do										
	.....do	3	34	30	75	"	....do	do										
	.....do	3	34	30	75	"	....do	do										
55..	Elk Hill colliery	2	50	34	59	"	October 8..	do							1	40		
56..	Filer	3	30	30	75	"	December	do			1	20	2	60				
	.....do	3	30	30	75	"	....do	do	2	90					1	45		
57..	Winton	3	30	30	75	"	....do	do			1	20			1	47		
	.....do	3	30	30	75	"	....do	do	2	90								

TABLE No. 5.—CONTINUED.

No. of colliery	NAME OF COMPANY.	DIMENSIONS. Number of boilers	Length in ft.	Diameter in inches	Pressure	Steam gauge or steam valve	Date of boiler examination	PRESENT CONDITION.	Number of hoisting engines	How many horse power	How many pumping engines	How many horse power	Number of engines in mines	How many horse power	Number of breaker engines	Horse power of each	Number of fan engines	How many horse power
58..	Eaton colliery	3	40	34	80	Yes.	December 12	Good and safe	3	75								
	....do	3	40	34	80	"	....do....12	....do	1	25					1	25		
59..	No. 1 shaft	3	36	31	70	"	October 11	....do	1	60			1	30				
	....do	3	36	31	70	"	....do....11	....do			1	25						
	....do	2	36	31	70	"	....do....11	....do							1	25		
60..	Jermyn's slope	4	30	34	70	"	....do....11	....do	2	85					1	25		
61..	Erie colliery	3	36	31	70	"	July 26	....do			1	35						
	....do	3	36	31	70	"	....do....26	....do	2	70								
	....do	3	36	31	70	"	....do....26	....do							1	25		
62..	E. E. Hendrick's colliery, Chestnut Hill	1	12	30	60	"	November 26	....do							1	30		
63..	Horan's colliery	2	34	30	50	"	December 19	....do							1	25		
64..	Clarkson & Brennan	Worked very little in 1875						....do										
65..	Pyne colliery	3	30	34	75	"	August 13	....do	2	100								
	....do	3	30	34	75	"	....do....15	....do			1	10					1	80
	....do	3	30	34	75	"	September 16	....do			1	20			1	60		
	....do	3	30	34	75	"	....do....24	....do			1	120						
66..	Taylor colliery	3	30	34	75	"	July 3	....do	2	120								
	....do	3	30	34	75	"	....do....3	....do					1	6			1	80
	....do	3	30	34	75	"	August 18	....do			1	110	2	36				
	....do	3	30	34	75	"	....do....18	....do	1	100					1	60		
67..	Scranton Coal Company	4	32	34	75	"	September 13	....do	1	80			1	10				
	....do	4	32	34	75	"	....do....13	....do	1	100			1	60	1	100		
68..	Dodge colliery	3	36	34	75	"	December 13	....do	2	90	1	95						
	....do	3	36	34	75	"	....do....13	....do					1	6				
	Dodge breaker	3	36	34	75	"	....do....13	....do							1	60		
69..	Bellevue shaft	5	36	34	75	"	August 6	....do	4	240	4	86	1	95	1	120	1	60
70..	Bellevue slope	4	34	34	75	"	....do....10	....do	2	120	1	60	2	60				
71..	Oxford shaft	3	40	34	75	"	September 29	....do	2	90								
	....do	3	40	34	75	"	October 11	....do			1	21	2	65	1	60		
	....do	3	40	34	75	"	....do....2	....do			3	21						
72..	Central shaft	3	30	34	75	"	August 9	....do	2	120								
	....do	3	30	34	75	"	July 31	....do			1	20					1	40
	....do	3	30	34	75	"	August 3	....do			2	300						
	Central breaker	3	30	34	75	"	July 24	....do							1	80		
73..	Sloan colliery	3	30	34	75	"	October 11	....do	2	120								
	....do	3	30	34	75	"	....do....1	....do							1	80		
	....do	3	30	34	75	"	....do....4	....do			1	20					1	60
	....do	3	30	34	75	"	....do....18	....do			1	30						
74..	Archbald colliery	3	30	34	75	"	September 11	....do	2	90								
	....do	3	30	34	75	"	....do....18	....do			1	20			1	60		
	Archbald slope	3	30	34	75	"	November 13	....do			2	12					1	40
	....do	3	30	34	75	"	....do....13	....do			1	150						
75..	Continental colliery	3	40½	34	75	"	August 3	....do	2	120								
	.... do	3	40½	34	75	"	....do....14	....do			1	95					1	60
	....do	3	40½	34	75	"	....do....2	....do			2	80			1	40		
76..	Hampton colliery	3	36½	34	75	"	November 15	....do	2	100								

	Hampton colliery	3	36½	34	75	Yes.	November 13	Good and safe				1	95										
	....do	3	36½	34	75	"	....do 6	do								2	80							
	....do	3	36½	34	75	"	....do 2	do				1	20					1	80					
77.	Hyde Park colliery	2	38	34	75	"	Sept. 7 and 10	do		2	120													
	....do	2	38	34	75	"	....do	do				1	20					1	60					
78.	Diamond colliery	3	40	34	75	"	October 8	do		2	90													
	....do	3	40	34	75	"	....do 4	do				1	100											
	....do	4	40	34	75	"	September 27	do								1	40							
	....do	4	26	30	75	"	October 12	do				3	206					1	100					
	....do	4	36	34	75	"	November 8	do		1	80											1	75	
	....do	4	36	34	75	"	....do 1	do				2	100											
	Diamond slope	3	30	34	75	"	September 7	do										1	26					
	....do	3	30	34	75	"	....do 7	do		2	90													
	....do	3	30	34	75	"	December 2	do				1	30											
	....do	3	30	34	75	"	July 6 & Dec. 4	do								1	25							
80.	Tripp slope	3	30	30	75	"	Sept. 7 & Dec. 3	do		2	60	3	76											
81.	Brisbin colliery	3	30	30	75	"	October 21	do		2	120	1	20					1	80					
	....do	3	30	30	75	"	....do 23	do				2	15									1	60	
82.	Cayuga colliery	3	30	34	75	"	August 15	do		2	120													
	....do	3	30	34	75	"	Not in use	do										1	60					
	....do	3	30	34	75	"	July 16	do				1	20									1	60	
	....do	3	30	34	75	"	October 26	do				2	300											
83.	Von Storch colliery	3	36	34	75	"	December 25	do		2	72													
	....do	3	36	34	75	"	....do 25	do				1	35											
	....do	3	36	34	75	"	....do 25	do		1	80													
	.... do	3	36	34	75	"	.. do 25	do										1	65					
	Von Storch shaft	4	36	34	75	"	...do 25	do		2	125													
	....do	4	36	34	75	"	....do 25	do				1	40											
83.	Leggett's Creek shaft	3	36	34	80	"	....do 26	do		4	60													
	....do	3	36	34	80	"	....do 26	do																
	....do	3	36	34	80	"	....do 26	do		1	130	3	60	2	16									
	....do	3	36	34	80	"	....do 26	do										1	80	1	80			
	....do	3	36	34	80	"	....do 26	do		2	80	2	12											
84.	Marvin colliery	3	36	34	80	"	....do 25	do		2	60													
	....do	3	36	34	80	"	....do 25	do										1	80	1	80			
	....do	3	36	34	80	"	....do 25	do		1	80													
85.	Dip mines	3	36	34	80	"	....do 26	do		1	36							1	36					
86.	Eddy Creek	3	36	34	80	"	....do 26	do		1	60													
	....do	3	36	34	80	"	....do 26	do				1	77											
	....do	3	36	34	80	"	....do 26	do																
	....do	3	36	34	80	"	....do 26	do		1	60													
87.	No. 1 colliery	4	36	34	80	"	Not used since	June. do		1	43							1	36					
88.	Grassy Island	3	36	34	80	"	December 21	do		2	72													
	....do	3	36	34	80	"	....do 21	do				1	77											
	....do	3	36	34	80	"	....do 21	do								1	98							
	Grassy Island breaker	3	36	34	80	"	....do 26	do										1	97					
89.	White Oak colliery	3	36	34	60	"	October 9	do		1	54													
	....do	3	36	34	60	"	....do 13	do				2	38					1	62					
90.	Powderly slope	3	36	34	70	"	....do 12	do		2	118													
	....do	3	36	34	70	"	....do 18	do				2	96											
	Powderly air shaft	3	36	34	70	"	....do 21	do						2	35					1	25			
91.	No. 1 pumping shaft	2	36	34	60	"	....do 21	do				1	62											
92.	No. 3 shaft	3	36	34	70	"	....do 2	do		1	77													
	....do	3	36	34	70	"	....do 13	do																
93.	Coal Brook breaker	4	30	34	70	"	....do 2	do		1	56							1	73					
94.	Rackett's Brook breaker	5	50	34	70	"	....do 2	do										1	77					
95.	Belmont colliery	1	34	30	45	"		do										1	15					
96.	Williams' breaker	3	34	30	70	"	New	do										1	30					
	Total									166	7,627	90	3,815	42	1,355	74	3,429	20	990					

TABLE No. 6.—*List of coal mines and collieries in the Eastern district of Luzerne and Carbon counties which have maps and tracings filed in the Inspector's office for 1875.*

No. of mine or colliery.	Name of Mine or Colliery.	Name of the Vein worked.	Shaft	Slope	Tunnel ...
1....	No. 2 or Port Griffith	Pittston or 14-foot		1	
2....	Everhart	Lower			1
3....	No. 6 shaft	Pittston	1		
4....	No. 5 shaft	....do	1		
5....	No. 11 shaft	....do	1		
6....	No. 7 shaft	....do	1		
7....	No. 4 shaft	....do	1		
8....	No. 4 slope	....do		1	
9....					
10....	Tompkins	Checkered or 7-foot	1		
	....do	....do	1		
11....					
12....	No. 9 shaft	Pittston	1		
13....	No. 10 shaft	....do	1		
	....do	Checkered	1		
14....	No. 8 shaft	Pittston	1		
15....					
16....	Seneca	Checkered		1	
	....do	Lower		1	
17....	Ravine	Pittston	1		
	....do	Checkered	1		
18....	Beaver	....do			1
19....	Rock Hill	....do			1
20....	Twin shaft	....do	1		
	....do	Pittston	1		
21....	Phœnix	Checkered	1		
	....do	Lower	1		
22....	Columbia	Pittston			1
23....	Butler	....do	1		
	....do	Lower	1		
24....	Ontario	Pittston		1	2
25....	Hillside	Lower	1	1	
	....do	Stark	1	1	
26....	....do	Brown			1
	Heidelburg	Lower			1
27....	Brown's	Brown's			1
28....	Dawson	Stark	1		
29....	Stark	....do	1		
30....	Spring Brook	....do		1	2
31....	Oak Hill	Old vein			3
32....	Carbon Hill	Carbon Hill	2		
	....do	....do		1	2
33....	Sibley	....do	1	1	
34....	Pyne		1	1	
35....	Taylor shaft	Clark	1		
36....	Taylor drift	Rock			1
37....	Corey	No. 2			1
	....do	No. 5			2
38....	Greenwood	Old			1
39....	National Anthracite	Nos. 2 and 3			3
40....	Meadow Brook	Nos. 5 and 3	1	1	
	....do	....do			1
	....do	No. 5			1
41....	Stafford Brook	Rolling Mill		1	1
42....	Scranton Coal Company's	G or Big		1	1
43....	Dodge	....do	1		
	....do	F or Rock	1		
44....	Bellevue shaft	G or Big	1		
45....	Bellevue slope	E or Diamond		1	
	....do	F or Rock		1	
46....	Oxford	E or Diamond	1		
	....do	F or Rock	1		
47....	Central	G or Big	1		
48...	Sloan	....do	1	1	

TABLE No. 6—CONTINUED.

No. of mine or colliery.	NAME OF MINE OR COLLIERY.	NAME OF THE VEIN WORKED.	Shaft	Slope	Tunnel ...
49....	Archbald	F or Rock	1	1	.....
	....do	G or Big	1	1	.....
50....	Continental	....do	1	.....	.....
	....do	I or Clark	1	.....	.....
51....	Hampton	E or Diamond	1	.....	.....
52....	Hyde Park	F or Rock	1	.....	.....
	....do	G or Big	1	.....	.....
53....	Capouse	E or Diamond	2	.....	.....
	....do	F or Rock	2	.....	.....
54....	Mt. Pleasant	E or Diamond	.....	1	.....
	....do	F or Rock	.....	1	.....
55....	Park	E or Diamond	.....	1	1
56....	No. 2 Diamond	E	1	.....	.....
	....do	F	1	.....	.....
	....do	G	1	.....	.....
57....	No. 2 Diamond slope	G	.....	1	.....
58....	Tripp slope	E	.....	1	.....
59....	Brisbin	G	1	.....	.....
60....	Cayuga	G	1	.....	.....
61....	Von Storch	E	.....	1	.....
	....do	G	.....	1	.....
	....do	I	1	.....	.....
62....	Leggitt's Creek	E	2	.....	.....
	....do	G	2	.....	.....
63....	Marvin colliery	G	1	.....	.....
64....	Rolling Mill	Rolling Mill	.....	1	.....
65....	Pine Brook	I or Clark	1	.....	.....
66....	Fair Lawn	I	.....	1	.....
67....	Green Ridge	I	.....	1	.....
68....	No. 2 shaft	Lower	1	.....	.....
	No. 2 slope	....do	.....	1	.....
69....	Roaring Brook	Upper	2	.....	.....
	....do	Middle	2	.....	.....
	....do	Lower	2	.....	.....
70....	Gipsy Grove	....do	1	.....	.....
	....do	....do	.....	.....	1
	....do	....do	.....	.....	1
	....do	....do	.....	.....	1
71....	Elk Hill	Upper	.....	.....	1
72....	Dip Mines	No. 2	.....	.....	1
73....	Eddy Creek	No. 2	1	.....	.....
	....do	Grassy Island	1	.....	.....
74....	No. 1 slope	No. 2	.....	1	1
75....	Grassy Island	Grassy Island	1	.....	.....
76....	Filer	....do	.....	1	1
77....	Winton	....do	.....	1	1
78....	Eaton	Archbald	1	1	3
79....	White Oak	....do	1	1	2
80....	No. 1 shaft, Jermyn	....do	1	.....	1
81....	Jermyn slope	....do	.....	1	.....
82....	Erie	Powderly	1	.....	1
83....	Powderly slope	....do	.....	1	.....
84....	Powderly Rock tunnels	....do	.....	.....	2
85....	No. 1 slope	Bottom	.....	1	.....
86....	White Bridge	Bottom and top	.....	.....	1
87....	No. 3 shaft	Bottom	1	.....	.....
88....	Coal Brook	....do	.....	.....	1
89....	Breaker	....do	.....	.....	1
90....	Lackawanna	....do	.....	.....	1
91....	Valley	....do	.....	.....	1
92....	Mill Ridge	Top	.....	.....	1
93....	Jefferson	Top	.....	.....	1
94....	Midland	Bottom	.....	.....	1
95....	Chestnut Hill	....do	.....	.....	1
96....	Forest	Top	.....	.....	1

TABLE No. 7.—*A List of Local Coal Sale Mines.*

No. of mines	Where Located.	By whom Operated.	Average thickness of coal	Name of the Vein of Coal worked.	No. of tons of coal mined	Shafts	Slopes	Tunnels	Breakers	Shutes	No. of men inside,	No. of men outside,
1	Pittston township	Maryland Nat. Anth. Coal Co	10	Pittston	695	....	1	1	....	1	2	1
2	Ransom township				460	....	....	1	....	1	1	1
3	City of Scranton	Hoy & Co	4½	Rolling Mill	900	....	....	1	....	1	2	1
4	.....do	Joseph Church	5⅝	Church	600	....	....	2	....	1	1	1
5	.....do	Michael Rock	7	Clark	900	....	1	....	....	1	1	1
6	.....do	Griffin & Leach	7	Clark	3,608	....	....	1	....	1	6	5
7	.....do	Hancock & Dean	5	Lower	3,300	....	....	1	....	1	6	3
8	.....do	Carter & Moore	5	Dunmore	2,400	....	....	1	....	1	3	3
9	Borough of Dunmore	James Young	4	....do	900	....	....	1	....	1	2	2
10	.....do	Anthony Maloney	4½	....do	300	....	....	1	....	1	2	2
11	Blakely township	Martin Cuppin	5½	No. 2	3,000	....	....	2	....	1	5	4
12	.....do	Luther Lyons	5½	No. 2	1,260	....	....	1	....	1	4	1
13	.....do	Henry Bowen	5½	No. 2	615	....	....	1	....	1	2	1
14	Gibsonburg borough	Thomas M'Gloughlin	7 & 5	Top and Bottom	1,000	....	....	1	....	1	4	2
15	City of Carbondale	Peter Dockerty	7 & 5	....do	900	1	....	....	....	1	3	1
16	.....do	M'Garrah & M'Myne	5	Bottom	1,200	....	....	1	....	1	4	2
17	Fell township	Coughlin & Co	5	....do	1,223	....	....	1	....	1	4	3
18	.....do	Gorden & M'Donough	5	....do	300	....	....	1	....	1	2	1
19	City of Carbondale	Jones & Co	5	....do	1,100	....	....	1	....	1	2	4
20	Fell township	C. H. Whitman	5	....do	425	....	....	1	....	1	3	2
				Total	25,086	1	2	20	....	20	59	41