Remarks.—They have furnished a map of mines; they have a second opening; they have no house for men to wash or change in; there are no boys working in the mines under 12 years of age; the parties having charge know their duty in case of death or serious accident.

Grassy Island Colliery.

This colliery is located in Blakeley township, and situated about one-half of a mile south-east of the Lackawanna river; the shaft is —— feet deep to the Fourteen Feet vein; it is operated by the Delaware and Hudson canal company. David M'Donald is mining boss, and J. G. Bell is outside foreman.

Description.—There is a breaker connected with this mine, about 3,700 feet away from main opening: they mine and prepare about 575 tons of coal per day; they employ 140 miners, 50 laborers, 34 drivers, 13 door-boys and 21 company men in the mines; 40 slate pickers, 9 head and plate men, 4 drivers, 9 company men, 12 mechanics and 2 bosses outside; in all 334 men and boys; they are working the Fourteen Feet vein of coal, average thickness 10 feet; they work headings 10, air-ways 14 and chambers 30 feet wide; they leave pillars 15 feet wide to sustain the roof; they leave cross-entrances about 50 feet apart for the purpose of ventilation; the roof is rock; the mine is in a good working condition.

Ventilation is produced by means of a furnace; the in-take is located at mouth of shaft, area 144 feet; the up cast is located in furnace air-shaft, area 49 feet; the amount of pure fresh air is 40,200 cubic feet per minute; the main doors are hung so that they will close of their own accord; they have attendants at main doors; they have double doors on main traveled roads, and an extra one in case of accident to any of the others; the air is circulated to the face of the workings in 2 splits; the amount of ventilation has been measured and reported; ventilation is good.

Machinery.—They use 1 breaker engine, 61 3-5-horse power; 1 hoisting engine, 72-horse power; 1 hoisting engine, 77-horse power, and 1 steam pump, 97½-horse power; they have a metal speaking tube in the shaft; they have a safety carriage, with all the modern improvements; they have an adequate brake, and flanges of sufficient strength and dimensions attached to their hoisting drums; the boilers have been cleaned and examined and reported in good condition; they have a steam gauge to indicate the pressure of steam; also a safety valve for safety.

Remarks.—They have furnished a map of mine; they have a second opening, located about 1,100 feet away from main opening; they have no house for men to wash or change in; they have standing water in the mine; the mining boss seems to be a practical and competent man; there are no boys working in the mine under 12 years of age; the engineers seem to be experienced, competent and sober men; they do not allow any persons to ride on loaded cars in the mine; they do not allow more than ten men to ride on the safety carriage at one time; the parties having charge know their duty in case of death or serious accident; the shaft landings are protected by safety gates; the breaker machinery is fenced and boxed off so that operatives are safe; they have 1 locomotive, 20-horse power, to transport coal from the mine to the breaker.

Eaton & Company's Colliery.

This colliery is located at Archbald, in Blakeley township, and situated on the east bank of the Lackawanna river. It is operated by Eaton & Co. Alva Eaton is general superintendent, James Eaton is mining boss and George W. Eaton is outside foreman.

Description.—The opening to the coal consists of four tunnels; there is a breaker connected with these mines; they mine and prepare about 500 tons of coal per day; they employ 104 miners, 100 laborers, 42 drivers, 8 door-boys and 4 company men in the mines; 60 slate pickers, 15 head and plate men, 2 drivers, 7 mechanics and 2 bosses outside; in all 344 men and boys; they are working the Lackawanna vein; average thickness 10 feet; they work headings 10, air-ways 16 and chambers 26 feet wide; they leave pillars about 14 feet wide to sustain the

roof; they leave cross-entrances about 50 feet apart, for the purpose of ventilation; the roof is sandstone rock; the mines are in a good working condition.

Ventilation is produced by the pressure of the atmosphere; the in-takes are located at mouth of tunnels, area 42 feet each; the out-casts are located in the air-shafts, area 35 feet each; the amount of pure air is 13,750 cubic feet per minute; the main doors are hung so that they will close of their own accord; they have attendants at main doors; the air is circulated to the face of the workings in one volume; ventilation is generally good.

Machinery.—They use 1 breaker engine and 1 hoisting engine at breaker, and 1 hoisting engine to hoist on the planes outside, 25-horse power each; the boilers have been cleaned and examined, and reported in good condition; they have a steam gauge to indicate the pressure of steam; the breaker machinery is boxed and fenced off, so that operatives are safe; they require no machinery at the tunnels.

Remarks.—They have furnished a map of mines; they have a second opening for each tunnel; they have no house for men to wash or change in; the mining boss seems to be a practical and competent man; he has no fire-boss to assist him; there are no boys working in the mines under 12 years of age; the engineers seem to be practical, competent and sober men; the parties having charge know their duty in case of death or serious accident.

Ventilation is produced by the action of the atmosphere, therefore the in-takes in winter will be the out-cast in summer; when the temperature is the same in the mines as it is outside, there cannot be any ventilation; there has been no complaints from the miners on account of bad air in the mines.

White Oak Colliery.

This colliery is located at Archbald, in Blakeley township, and situated on the east bank of the Lackawanna river; the opening to the coal consists of 2 tunnels and a slope: it is operated by the Delaware and Hudson canal company. Nicholas George is mining boss, and Thomas Law is outside foreman.

Description.—There is a breaker connected with these mines, located about 600 feet from mouth of tunnels; they mine and prepare about 450 tons of coal per day; they employ 110 miners, 85 laborers, 33 drivers, 8 door-boys and 14 company men in the mines; 54 slate pickers, 4 head and plate men, 5 drivers, 4 company men, 7 mechanics and 2 bosses outside; in all 326 men and boys; they are working the Bottom vein of coal, average thickness 10 feet; they work headings 10, air-ways 14 and chambers 36 feet wide; they leave pillars from 12 to 14 feet wide to sustain the roof; they leave cross-entrances about 50 feet apart for the purpose of ventilation; the roof is good rock; the mines are in a good working condition.

Ventilation is produced by means of a furnace; the in-take is located at mouth of tunnels, area 36 feet; the up-casts are located in furnace air-shaft, area 48 feet; the amount of pure air is 11,860 cubic feet per minute; the main doors are hung so that they will close of their own accord; they have attendants at main doors; the air is circulated to the face of the workings in one split; the amount of ventilation has been measured and reported; ventilation is good.

Machinery.—They use 1 breaker engine, 61½-horse power; there is no machinery required at the tunnels.

Remarks.—They have furnished a map of mine; they have a second opening; they have no house for men to wash or change in; the mining boss seems to be a practical and competent man; there are no boys working in the mines under 12 years of age; the engineer seems to be a practical and sober man; the parties having charge know their duty in case of death or serious accident; the breaker machinery is boxed and fenced off so that operatives are safe; they have not opened any chambers in the slope yet; they are driving heading and air-way to find the basin of the coal.

Of the smaller companies and operators, I have two to report who have replaced furnaces with fans during the year. Messrs. Jones, Simpson & Co., have put in a twelve feet diameter fan at the Pierce colliery, in Archbald borough, and Messrs. William Connell & Co. have replaced their furnace with a fourteen feet diameter fan, which commenced running October 28, 1879. The Butler Coal Company have replaced a six feet diameter Patterson fan with a sixteen feet Guibal fan, and the little one has been removed to the Twin shaft, Pittston Coal Company, and the Hillside Coal and Iron Company have removed their fan from the Powder Mill shaft, in which the coal is exhausted, to a new air shaft sunk for the Spring Brook tunnel.

All the miscellaneous collieries are in a satisfactory condition at present, excepting the following: Jermyn's shaft and slope, Jermyn borough; Eaton colliery, Archbald borough; Filer colliery, Winton borough; Greenwood colliery, Lackawanna township; Hillside colliery, Pleasant Valley borough; Columbia mines, Pittston township, and the Beaver mines, Pittston borough. The first three named, the Greenwood, and the two last named, are the only very bad ones, and each of these must receive particular attention during the current year. The larger number of the collieries of the small operators, are in very good condition as to ventilation.

Taking the whole of my district, I think that it can be safely said, that the progress made during the year in bringing the condition of the collieries up to what it should be, is highly encouraging and satisfactory, and the work accomplished can be taken, no doubt, as an assurance that what is still wanting, will be done in due time.

Prosecutions for Violations of Law.

It is one of the most unpleasant duties of the position of an inspector, that he feels compelled, in certain instances, to enter criminal proceedings against mine bosses or workingmen, for violations of law. I have often felt that I would prefer to suffer the penalty myself than do this, if I could escape my oath-bound duty by doing so. Whenever I have been forced to prosecute, I have done it "with malice towards none and charity towards all," and have never asked the courts to inflict any but a nominal punishment. But I have been sorely grieved at the course pursued by the operators, superintendents, and workingmen, in defense of the unfortunate parties prosecuted. I do not complain at their availing themselves of all legal and honorable means in defense of the accused, but when they assail the motive of the inspector, and attribute his action to a feeling of spite and a desire for revenge, in retaliation for some real or imaginary wrong they may be conscious of having perpetrated against him, they make the cross a very heavy one to bear. I cannot account for this, only as a verification of the old maxim, that "The guilty fleeth when no one pursueth him." But it grieves me that any one, who claims an intimate acquaintance with me, can imagine it possible for me to be capable of indulging in a low and mean desire for retaliation and revenge; for I thank God that

charged to the account of years in the past, long before Mr. Vandling assumed the control of the mines, and this fact should be credited to him. He has always been found ready to admit the necessity of improving the mines, and has shown a desire to do everything possible for the health and safety of the workmen.

The Pennsylvania Coal Company's collieries stand about as they did one year ago. No material improvement has been effected in any of their old collieries. The new No. 1 Barnum shaft, however, is provided with a fan which will produce ample ventilation for this new colliery, and another fan will be provided for the No. 2 shaft. I am very sorry that I cannot report all the collieries of this company in as good condition as could be wished. John B. Smith, Esquire, the general agent of the company, has always treated me with uniform kindness, and has always professed a desire to improve the condition of the mines under his charge; but the mine superintendents have not seemed so ready to do what is needed. My remarks on the condition of these collieries in my report for 1879, will apply to them still.

The collieries of the smaller companies and operators in the district are in excellent condition as to ventilation, excepting the following: Everhart colliery, Jenkins' township; Beaver colliery, Pittston borough; Columbia mines, Pittston township; Hillside colliery, Pleasant Valley borough; Greenwood colliery, Lackawanna township; Elk Hill colliery, Dickson City borough; Filer colliery, Winton borough; Jermyn's shaft and slope, Jermyn borough; Brennan colliery, Fell township; and Forest City colliery, Forest City. Some of these have been improved during the year, but none of them will ever have good ventilation until they are provided with a fan in place of the miserable furnaces now in use in them. The workings are so shallow in these collieries that furnaces cannot ventilate them. None of these can be classed as very bad, excepting the Jermyn shaft and slope and the Brennan colliery.

An air shaft has been sunk for the Hillside colliery, Pleasant Valley, and as soon as connection is made with the workings a fan will be placed on this shaft, which will remove all cause for complaint in this case.

A new fan has been erected by Messrs. Jones, Simpson & Co., at the Eaton colliery, Archbald borough, which was sorely needed. This improvement will place the Eaton colliery in the first class as soon as the air courses are put in proper shape inside.

The main roads and traveling ways have been improved in many of the collieries, but there is a great deal yet to be done before they are all satisfactory in this respect. The importance of having clean and unobstructed roads is not realized by many of the mine bosses, but I am more convinced of it every day, and I am positively certain that many accidents to drivers and runners would be averted if the roads were kept reasonably clear of obstructions. All places where drivers are obliged to hitch and unhitch their mules from cars in motion, such as passing branches, the approaches to the foot of shafts or slopes, and inside at the chambers, should be cleared

Buffalo Mines.—Built a three-foot gauge track railroad from mines to Jefferson branch of N. Y., L. E. & W. R. R., a distance of two and one-third miles. Coal is hauled by a small locomotive. A new hoisting engine, new main and pony rolls and screens were also put in, and the breaker and machinery given a thorough overhauling.

Belmont Mines.—A new water-level tunnel; was opened to coal headways, and airways were driven to cut off the distance in haulage.

Edgerton No. 2 was opened by a water-level tunnel. It is located about two miles northeast of breaker. Coal is hauled by a small locomotive on a three-foot gauge track.

Eaton Tunnel.—Drove a heading to surface for manway and ventilation; size of opening, 6′x9′=54 feet.

Eaton Shaft.—Sunk a shaft from surface to the present working or "Archbald" vein 162 feet deep; size of opening, 10′x20′=120 feet area.

Jermyn No. 3.—Sinking slope; it is down 700 feet; opening 14′x7′=98 feet area; driven on a grade of one in three feet; in place, six new boilers, one pair of hoisting engines, 10′x10′, one fan engine, 12″x12″, and one pump, and are also building new breaker.

Mount Pleasant Mines.—Sinking a second opening from G, or Big vein, to Clark.

Filer's Slope, now Mount Jessup.—Have driven slope in coal about 1,000 feet in length.

Lackawanna Shaft.—Have placed an endless wire rope about 2,000 feet long in main gangway for haulage; it works satisfactorily; it is cheaper and better than horses or mules.

Pancoast Shaft.—Have put in a new set of boilers; have put in Zeigler's patent slate-pickers; have graded slope to a uniform grade for about 1,000 feet; they are using the electric arc light at this colliery and it gives general satisfaction.

Rushbrook Shaft.—Have erected a new blacksmith shop, 20′x20′, a new powder house, 10′x10′, a new barn, 14′x20′; have placed in mine a No. 10 Knowles pump, sunk a second opening to top vein, and have driven headings in top vein going east 350 feet, and in the same vein going west 300 feet; the east heading in bottom vein has been driven 400 feet, and in the same vein going west 125 feet.

Spencer Shaft.—Are driving slope in coal northwest of shaft; in middle vein they are down about 800 feet.

Hon. Thomas Waddell is at present opening up a new mine in Winton borough.

Note.—The Peakville Coal Company's colliery was idle during the year and did not ship any coal.

The Rushbrook colliery did not ship any coal during 1888.

Bridge colliery was sold and abandoned August 16, 1888.

Shaft No. 2, Penn. Coal Company, located in Dunmore, was abandoned September 1, 1888.

face at shaft and roadbed of tunnel, at which point it is dumped and the coarse coal separated from the fine, the coarse coal to be shipped direct to market and the fine to Bunker Hill breaker. A 90 horse-power engine will be used for hoisting the coal. Three boilers are in place, each 36′ long and 30″ diameter for the present furnish sufficient steam for hoistingand for one No. 4 Knowls pump at bottom of shaft.

Yours, very respectfully,

JAMES YOUNG,
Mine Superintendent.

Capouse shaft, Lackawanna Iron and Coal Company.—Have constructed a new plane between G and Rock veins 369′ long; sectional area equal 96 square feet and on an angle of 15°.

Pine Brook shaft.—Finished plane 1,500′ long; sectional area, 6′x14′, equal 84 square feet on a pitch of 15°.

Clifford shaft.—Finished one new plane 887′ long; sectional area equal 72 square feet on an angle of 6°.

Forest City mines.—Finished a new slope 400′ long; sectional area, 84 square feet on an angle of 9°.

Glenwood mines.—Constructed a slope 400′ long; sectional area, 48 square feet on an angle of 14°.

Keystone tunnel.—Finished a new plane 1,100′ long; sectional area equal 98 square feet on a pitch of 7°.

Elk Creek drifts.—Constructed a plane 80′ long; sectional area, 5′x16′, equal 80 square feet on an angle of 38°.

Eaton tunnel.—Extended slope 500 feet; sectional area, 6′x14′, equal 84 square feet on a dip of 1 in 9.

Edgerton Coal Company is opening a new drift into bottom coal $1\frac{7}{8}$ miles north of Edgerton No. 2, close to where the old Hendricks breaker stood and on the same tract of land.

Dolph tunnel.—Finished plane No. 5, 525′ long and on a pitch of 3°; also plane No. 6, 300′ long on an angle of $3\frac{1}{2}$°.

Grassy Island colliery.—Sunk second opening shaft from Grassy island to Clark vein, a depth of 157′ feet; sectional area, 308 square feet; also new air shaft for drift workings and built a new furnace.

Jermyn No. 3 slope.—This colliery is located in Dickson City borough about 2,000′ northwest of Jermyn shaft No. 4; it consists of a slope and breaker; the slope is sunk. From surface to first vein of coal is 600′ and to second vein of coal 800′. It is connected with mine workings of Jermyn No. 4 and is ventilated at present by the fan at Jermyn No. 4. They are sinking a fan shaft northeast from mouth of slope; it is now down about 175′; they are also erecting a fan. The breaker is new and located 200′ southeast of slope mouth; it has a capacity of 1,000 ton of coal per day and is furnished with all the modern improvements.

Lackawanna shaft.—Finished a plane 300′ long; sectional area, 8′x18′