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

engines, one placed on each side of the shaft, and connected to the fans by direct motion.

White Oak Colliery.

They have completed an air shaft at this colliery. The shaft opening is twelve by twelve feet, and it is thirty feet deep from the surface. They are going to erect a fan, seventeen feet diameter by four feet face, over the air shaft opening, which is to be run by a single engine, connected by belt. They have also put in place one nest of three boilers; also put in place a steam-pump, and necessary connections, to pump water out of the slope. The slope is also graded, ready to hoist coal as soon as the water is pumped out.

Jermyn, No. 1, Shaft.

They are now sinking an air shaft. The opening is fourteen by fourteen feet. It is timbered down to the rock, a distance of seventeen feet from the surface. They have a bore-hole in the bottom of air shaft, so the water is going down into the old workings forty-seven feet through rock. They expect to erect a fan over air shaft, seventeen feet diameter by four feet face, to be run by a single engine, and connected to fan by a belt. They are also sinking a slope in coal inside for a third lift.

RULES ADOPTED BY THE COAL OPERATORS AND MINE SUPERINTENDENTS OF THE EASTERN DISTRICT OF THE WYOMING AND LACKAWANNA COAL FIELDS, AT THE MINE INSPECTOR'S OFFICE, SCRANTON, PENNSYLVANIA, DECEMBER 24, 1881.

Preamble.

All persons employed in or about this colliery are hereby notified that the following rules and regulations have been adopted for the purpose of preventing injury to persons or property from negligence or carelessness of the employés.

The attention of each class of workmen is hereby called to the duties assigned them; they are also requested to do all in their power to avoid all unnecessary risk in following their daily avocations.

Mine Boss.

It shall be the duty of the mine boss to direct and generally supervise the whole working of the mine. He shall instruct the workmen in their several duties and vocations.

It shall be his special duty to keep the work in proper shape as it advances. He shall keep a careful watch over the ventilating apparatus, airways, traveling-ways, pumps and sumps, and shall see that the miners timber their places properly as they advance, and see that they keep their places safe from danger of loose coal, slate, or rock falling upon them. If he shall find a place in a dangerous condition, it shall be his duty to give orders to have it secured by taking down or propping up the loose material, with the least possible delay; or, if necessary, he shall stop the mining of coal at once, until it is secured. He shall also see that the signaling ar-

Belmont Mines.

There has been a new fan erected here during the year, which gives general satisfaction.

Delaware, Lackawanna and Western Railroad Company's Oxford Shaft.

Sunk main shaft from Rock vein to Clark, a distance of about 165 feet, and sunk a new air-shaft from surface to Clark vein, 354 feet; 10×26 feet for ventilation, and to hoist men and let down material. We will set a fan over this one, and a fan at the old, or main shaft, to ventilate part of it and all of Bellevue slope, so as to leave Bellevue fan for Bellevue shaft alone. The slope at Diamond shaft E vein is completed, and working all right. At the Brisbin shaft we have two of the gravity planes we alluded to last year, all ready and working. The third one is very near ready. At Cayuga shaft we are driving a tunnel, or plane, from G to Diamond vein, to let down the coal to G vein. Expect to be ready in 1883. At Sloan shaft we are resinking from G vein to Clark; are also sinking a second opening from G to Clark—size, 8×10 feet in the clear. We intend to make this to that men can go up or down. Storrs shaft being sunk 416 feet, we are now opening gangways in G or big vein 285 feet down. Not developed yet.

Yours, respectfully,

B. HUGHES.

SCRANTON, *March 6, 1883.*

PROVIDENCE, *February 23, 1883.*

PATRICK BLEWITT, Esq.,

Inspector of Coal Mines:

DEAR SIR:—The following are the improvements made in and around the D. & H. C. Co.'s mines for the year ending December 31st, 1882:

Coal Brook Mines.

Have graded a new gravity plane to let coal down on north-east side. Have driven seventy feet of rock tunnel, 7×9 feet, to open No. 3, or four-foot vein from Lackawanna tunnel, in bottom coal on a level with breaker. Have about 600 feet of heading cut in coal.

No 1 Shaft.

Have graded a new gravity plane to let coal down on north-west side.

Powderly Slope.

Commenced pumping out water October 20th; are also building schutes and outside plane.

Jermyn No. 1.

Have finished sinking inside slope to basin. Put up a new 17-foot fan, by four-foot face, on air-shaft that was being sunk last year.

Grassy Island Shaft.

Have sunk fan-shaft, 11×14 feet, 252 feet deep to the Grassy Island vein.

SCRANTON, PA., *March 24, 1884.*

The following improvements have been made in coal department of the Lackawanna Iron and Coal Company during the year 1883:

At the Pine Brook colliery there has been driven a rock tunnel seven by sixteen feet, for a distance of five hundred feet at an angle of ten degrees; same has been driven from No. 4, or second, below Clark to Clark vein, cutting one vein of coal about midway. The object of this tunnel being to run all Clark vein coal to one common foot located in second vein below Clark. The tunnel or plane will be provided with double track for letting or lowering down coal in the ordinary way. Our connections have been made with old workings of Clark vein, hence with mule-way or man-way. The man-way upon the surface has been extended towards the breaker some distance by building side walls, and covering with large and substantial flag-stones, making a very complete and easy man-way from lower vein to surface. Above constitutes about all the important improvements made in coal department during year 1883.

R. G. BROOKS, *Superintendent.*

PATRICK BLEWITT, Esq.,
Inspector of Mines:

DEAR SIR: The New York, Susquehanna and Western Railroad Company have in the Lackawanna valley about seven and one half miles of railroad completed and in active operation, and about three and one half miles now under construction. When finished shipments will be made over this road from nine different collieries. Of these, the Greenwood and Sibley collieries have been for a long time in operation. The Dunn is a new operation completed during the last year at a cost of $100,000, and is now rapidly increasing its out-put. Jermyn No. 6, also completed during the last year, is a shaft colliery, having a shaft two hundred and twenty feet deep, cutting two veins of coal, and a very fine, large breaker and commodious outbuildings have also been erected. The cost of this plant is about $120,000. The Winton colliery is now being rapidly developed by a drift of about two thousand feet in length, one thousand four hundred feet of which have already been driven. The breaker foundations have been erected, and the timber for the breaker has been framed, and is ready to be raised. The Dolph colliery is now nearly ready for shipping coal. The plant consists of a very fine breaker and machinery, with suitable out-buildings, and the mine will be operated by a drift and inside gravity plain. The cost of development will be about $80,000.

The Spencer colliery is partly a new operation, and being rapidly completed. The breaker has been framed and raised, and the machinery is now being put in. The mine opening consists of a shaft which has been sunk through four seams of coal—three of which are so far developed as to insure an out-put of eight hundred tons per day from the very start. Coal will doubtless be shipped from this colliery about the 1st of May. The

Delaware + Hudson Canal Co Coal

by a system of rope-haulage, sectional area of slope is 6′x12′ equal 72 square feet.

Jermyn No. 1 shaft.—Finished new plane 400′ long on a grade of 1′ in 5′.

No. 1 shaft, Carbondale.—New tunnel driven from daylight to top coal 550′ long, sectional area 63 square feet.

White Oak mines.—Opened up old No. 5 mines by means of two tunnels one 300′ long, sectional area equal 60 square feet; also, another 100′ feet long, area of opening 56 square feet; these openings are made to the Archbald vein of coal.

OFFICE OF THE PENNSYLVANIA COAL COMPANY,
DUNMORE, PA., *February 8, 1890.*

MR. PATRICK BLEWITT:

DEAR SIR: The following are some of the improvements made during the year ending December 31, 1889:

No. 5 shaft.—A slope was started from northeast heading in second vein (First Dunmore) angle of slope located about 250′ from shaft landing in this seam, we drove slope in vein on north 50 west course for a distance of 900′ at which point we encountered a fault. The width of fault was ascertained by boring from top or Clark vein, and the slope again resumed in rock same course as above mentioned, and on a grade of 1′ in 20′, for a distance of 160′, at which point we again opened up vein. The slope will terminate at the lower one, west end of Wilkins' tract. One pair small engines 40 horse-power, Pennsylvania Coal Company's make, located between heading and angle of slope will be used to hoist the coal. The plane on northeast side of shaft in third seam was finished and put in successful operation in February, 1889. The one in second seam was finished in June.

No. 1 shaft.—We resumed operations at this shaft in November, since which time we have been trying to increase the length of our headings and the capacity of lodgment.

Bunker Hill No. 1.—This new working is situated on line of Taylor tract near end of the E. & W. V. truss and about 600′ east of Roaring Brook. At or near the point at which the shaft is sunk, a tunnel had been driven (about thirty-five years ago) into what is known as the Dunmore middle vein, and from this tunnel two narrow passages were driven in coal, one to the rise, south 39° east, and abandoned in coal, the other driven to daylight on a course of south 7° west. At this point, a furnace has been built for the purpose of ventilating this seam, our second opening will also be at this point. The shaft is 44′ 8″ deep and sunk to the Dunmore bottom vein. A second opening to shaft workings has been made close to the bank of Roaring Brook and almost directly under the track of the E. & W. V. railroad, driven in the coal of the Dunmore bottom vein about 500′ feet east of shaft. The coal from both shaft and tunnel will be hoisted to an elevation of 30′ above sur-

There are also 75 fans and 14 furnaces for the purpose of ventilation. There are four mines where they are drawing back pillars, that are not ventilated mechanically.

Respectfully submitted.

PATRICK BLEWITT,
Inspector of Mines.

COLLIERY IMPROVEMENTS FOR YEAR 1892.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY.

Hyde Park Shaft.—Sunk an air shaft from Big vein to New County vein 6′×10′=60′ and 28′ deep; also sunk an air shaft from New County to Clark vein 6′×10′=60′ and 78′ deep, and drove a tunnel from Big to New County vein 7′×11′ and 146′ in length.

Tripp Shaft.—Extended slope towards the river 700′ in length.

Dodge.—Opened from New County from Big vein.

Brisbin Shaft.—Drove new plane up the west mountain in Clark vein 700′ long.

Storrs No. 1 Shaft.—Driving a slope south; also opened a drift in the Richmond vein and put up a new fan, but they will not get much coal as it is too near the outcrop; also sunk No. 3 Storr's, formerly called Cayuga No. 2, from G or Big 155′ deep to the Clark vein, and they are opening in the Clark and Diamond veins.

Pyne Shaft.—Opened a new plane in the New County vein 530′ long.

DELAWARE AND HUDSON CANAL COMPANY.

Leggett's Creek Shaft.—Are now working coal in Clark vein.

Olyphant No. 2 Shaft.—Finished a new lowering plane in 14′ vein.

Jermyn No. 1 Shaft.—Drove a new second opening from daylight and connected inside with both veins.

PENNSYLVANIA COAL COMPANY,
DUNMORE, PA., *1891.*

Mr. PATRICK BLEWITT,
Mine Inspector of Second Anthracite District:

We have during the year started a slope on a grade of 7°, to open up what is known as the Sawyer vein. Mouth of slope situated N. 74 E. and 235′ from east corner of No. 1 breaker boiler house and 450′ north of Old Smith tunnel. Course of slope N. 79° W. We have driven on above grade and course 175′. Uncovered the coal at a distance of 137′ from mouth of slope. When finished it will be from 900′ to 1,200′ long.

Nos. 1 and 2 Shafts, Old Forge and Breaker. At Old Forge breaker four Babcock & Wilcox water tube boilers of 600 horse power in two nests or batteries were erected in 1896. Pressure carried, 110 pounds. They were put in operation November 27, 1896, and supply steam to Old Forge breaker, Old Forge shaft No. 2, and to shaft No. 13 of Central Colliery, and have supplanted three cylindrical boilers 60 feet by 30 inches, formerly at the breaker; five 36 feet by 30 inches at Old Forge shaft No. 2, and ten 36 feet by 30 inches at No. 13 shaft; the latter fifteen have not as yet been removed but are not in use at this date.

At Old Forge Shaft No. 1, one Babcock & Wilcox boiler of 130 horse power was also erected in 1896 and put in operation November 18, 1896, and is an addition to the boiler power at that place. The pressure carried is 110 pounds.

William Connell & Co.

A plane has been driven from the abandoned workings in the old tunnel in No. 5 vein to the present workings in No. 4 vein; length, 150 feet; sectional area, 84 feet; gradient, 33 1-3 degrees.

The Connell Coal Company.

"William A" Colliery. A plane has been driven having the following dimensions: Length, 230 feet; sectional area, 7 x 16 feet; gradient, 12 per cent.

An opening has also been made from the Marcy vein to the surface.

Lawrence Mine. A shaft for ventilation has been sunk from the upper to the lower drift workings; depth, 26 feet; sectional area, 8 x 8 feet.

Two planes have been driven, one 485 feet long; 7x21 feet sectional area; gradient, 10 per cent.; the other 1,600 feet long; 8x14 feet sectional area; gradient, 2 per cent to 5 per cent.

An additional plane is in course of construction in lower drift.

Jermyn & Co.

Jermyn No. 1 Shaft. A shaft has been sunk for hoisting coal; depth, 220 feet; sectional area, 11 x 26 feet.

West Ridge Coal Company.

The main hoisting shaft was completed to a depth of 556 feet; sectional area, 12 x 30 feet.

A second opening is being sunk from the Clark vein to the China vein; present depth, 80 feet; sectional area, 8 x 10 feet.

A new slope has also been completed in the No. 4 vein: length, 500 feet; sectional area, 6x15 feet; gradient, 4 per cent.

4--11--96

A new plane fourteen hundred feet long has been made in the Grassy Island vein, taking the place of two shorter ones.

Another large tubular boiler was placed in position, as was also a ten-foot fan for making draft for boilers.

At Grassy Island slope, new first motion engines for hoisting from Diamond vein to surface were installed, and new engines are replacing old ones at Grassy Island shaft.

A new breaker has been built at White Oak, on site of the old one that was burned in July, and a new tunnel has been driven to bottom vein.

Jermyn No. 1, a new rock plane 650 feet long has been driven from Archbald to Grassy Island vein. A new slope has been made, and a branch to hold from 70 to 100 cars is being made at foot of shaft.

The breaker has been rebuilt and now has a capacity of 1,500 tons per day.

Also, a new plane 1,500 feet long has been driven on a light grade from foot of shaft to old workings, where it is proposed to rob pillars.

A tail rope system of haulage has been adopted in No. 1 shaft, which hauls a trip of fourteen cars 3,850 feet, replacing five mules and drivers. Also, a new slope has been sunk a distance of 400 feet to "third vein," and two gravity planes, 750 and 650 feet, respectively, have been made.

A new drift has been opened at Powderly, in Grassy Island vein, and a surface railroad 3,000 feet long has been built to convey the coal from the drift to the chutes, and another pump has been added, making three pumps delivering water to surface through a 16-inch bore hole. A new lowering plane 1,800 feet long is about completed.

At Racket Brook a new washery with a capacity of 600 tons per day has been erected.

A new breaker of 2,500 to 2,800 tons daily capacity has been built at Coal Brook. It is modern in every particular and has replaced the old Coal Brook and Racket Brook breakers. The coal from No. 1 shaft and tunnel, Powderly slope and tunnel and Coal Brook mines will be prepared by it.

A new drift, known as the Mills drift, has been opened up, and is ventilated by a new Guibal fan, ten feet diameter, driven by a gasoline engine, with very good results.

At Wilson Creek a new rock plane from bottom to top coal has been made. It is 250 feet long. Also, two gravity planes, 750 and 1,025 feet long, respectively, have been made, and a small air motor three feet high has been added in top coal drift, making three in all doing all the work for forty-five places, besides rendering rock blasting unnecessary, except that the vein becomes less than three and a half feet.

bottom vein. Length of slope, 1,700 feet, grade, 4 degrees. A four-ton electric locomotive to haul coal 3,800 feet to the foot of main slope has been added during the year.

The Mt. Pleasant Coal Company.

The big shaft has been sunk from the Clark vein to the Second Dunmore, a distance of 135 feet, the shaft being 11x30. The Rider shaft has been sunk from the Clark to the Second Dunmore, distance 134 feet, size of shaft 11x24. A tunnel has been driven from the surface vein near the foot of the little outside shaft to the main hoisting shaft with the idea of footing all the surface coal directly in the big shaft; the tunnel is 7x9, and 100 feet long.

An electric motor, weighing eight tons, has been installed in the surface vein, and an electric pump of the Knowles design, with a capacity of fifty-two gallons per minute has been placed in the third counter of the surface vein.

In the breaker two new screens have been hung up and two screen rooms built. The old drum on the hoisting engine shaft has been taken off, and in its place there is a clutch drum of the latest design.

Pennsylvania Coal Company.

This company has introduced a number of automatic mine doors into their mines during the year. These doors are known as the "Champion" automatic mine doors, manufactured in Terre Haute, Ind.

John & J. J. Jermyn.

Jermyn No. 1 Mine.—A rock plane from the Dunmore No. 2 to the Clark vein has been made during the year 1899. This plane is 16 feet by 7 feet, and 185 feet long, on a grade of 12 degrees. Another similar plane connecting the veins named in another part of the mine was also made; its dimensions are 7 feet by 12 feet; pitch, 9 degrees; length, 360 feet.

An extensive rope haulage has been installed during the year. Its features are its heavy grades and curves of small radius. The cars are hauled a distance of 3,500 feet. The round trip is made in twelve minutes.

West Ridge Coal Company.

West Ridge Mine.—By order of the court the engines, boilers and tower were removed from the head of the main shaft. A pair of 16x10 inch second motion engines were erected in the Diamond vein to hoist through the main shaft from the China vein. The Diamond

TABLE F—Nationalities of Persons Killed or Injured.

Nationalities.	Killed.	Injured.	Totals.
Pole,	6	24	30
American,	6	22	28
Irish,	5	17	22
English,	6	14	20
Welsh,	2	13	15
Slavs,	2	9	11
Italian,	3	6	9
Austrian,	2	4	6
Hungarian,	2	4	6
Russian,	4	1	5
German,	2	2	4
Scotch,	.....	2	2
Totals,	40	118	158

Improvements at Collieries.

Delaware and Hudson Company's Improvements.

At Clinton a new air shaft 10x12 feet and 240 feet deep was sunk for ventilating purposes, and a new fan was installed to ventilate the East Side tunnel.

At Coal Brook a rock plane 300 feet long was driven from bottom to top vein, and an air shaft sunk. A new air compressor was installed and three new air motors added for haulage. A new drift was opened on East Mountain; and an air shaft sunk.

At Jermyn No. 1 a new 22-foot fan was installed, to replace the old one. A rock plane 600 feet long, driven to shorten transportation, and improve ventilation, was made.

Grassy Island.—The rock vein was opened and air connections made.

At Eddy Creek a slope was sunk from surface to rock vein to improve ventilation on Mills tract workings.

Hillside Coal and Iron Company.

A new breaker was built at Forest City to replace the old one, which was destroyed by fire in early part of the year.

The Price Pancoast Coal Company has sunk the main shaft to Dunmore veins; also, installed a new fan 35 feet in diameter.

The Johnson Coal Company has driven a 1,000-foot tunnel from prove ventilation on mills tract workings.

Carney and Brown Coal Company, fair.

Edgerton Coal Company, fair.

Finn Coal Company, good.

Black Diamond Coal Company.—This mine was in a very bad condition generally, but on my last visit I found the ventilation greatly improved.

COLLIERY IMPROVEMENTS

By the Delaware and Hudson Company

Clinton.—Sinking new slope from surface to Grassy vein, section 7x14 feet, present depth 125 feet.

Extension of present haulage in old slope Top vein 2,400 feet begun.

Erection of supply store 16x28 feet and office for mine foreman 14x18 feet. Installation of 3 cylinder boilers, 90 horse power total.

New local sales pockets in Carbondale City of 4,500 to 5,000 tons capacity, with elevator and conveyor driven by 26 horse power gas engine.

Carbondale No. 1.—Air shaft from surface to top vein, 151 feet, completed.

One ten foot ventilating fan driven by 26 horse power gasoline engine.

Powderly No. 2.—Erection of new breaker and washery combined. Machinery driven by one pair of 16x36 inch engines, 150 horse power. Conveyors driven by one pair of 18x36 inch engines, 90 horse power. Washery supplied with one 18x12x18 inch Jeansville Duplex pump of 1,000 gallons capacity. Installed six new return tubular boilers of 150 horse power each.

Jermyn No. 1.—One direct current generator of 180 kilowatts driven by direct connected engine. Mines wired for electric haulage, and one electric locomotive of 12 tons weight put in use. One 24x14 x36 inch Jeansville Duplex pump of 1,800 gallons capacity installed, but now under water and not being operated.

One new gravity plane 1,200 feet long. Foot of shaft, head and foot of inside slope wired and light furnished by arc lamps.

White Oak.—One 17 foot fan erected, driven by 14x36 inch engine to ventilate the Dunmore vein.

New slope sunk 500 feet in Dunmore vein.

Proposed 3,000 feet haulage road begun.

Grassy Island.—One three stage air compressor with 16x11½x5 5-8 inch diameter air cylinders, 22 inch diameter steam cylinder by 24 inch stroke, 140 horse power. One locomotive type boiler installed, 250 horse power. Three small air motors sent to this mine, but not all in use.

MT. JESSUP COAL COMPANY

Mt. Jessup.—Ventilation bad. Roads and drainage bad. Condition as to safety, fair.

EDGERTON COAL COMPANY

Edgerton.—Ventilation fair. Roads and drainage fair. Condition as to safety, fair.

CARNEY AND BROWN COAL COMPANY

Murray.—Ventilation, roads and drainage fair. Condition as to safety, fair.

BLACK DIAMOND COAL COMPANY

Black Diamond.—Ventilation good. Roads and drainage fair. Condition as to safety, fair.

FINN COAL COMPANY

Finn.—Ventilation fair. Roads and drainage fair. Condition as to safety, fair.

IMPROVEMENTS

DELAWARE AND HUDSON COMPANY

Clinton.—New slope in Grassy vein sunk to a depth of 1,000 feet. Also a second opening completed. Three thousand six hundred feet of track laid from Grassy slope to breaker with 40-lb rail. One 6-wheel, 12-ton locomotive added to haul the coal from Grassy slope to breaker. Three new cylinder boilers 30 inches by 50 feet added to boiler plant. Two thousand feet of tail rope for haulage in the main slope completed.

No. 1 Carbondale.—One 10 foot Guibal fan installed driven by direct engine 8x10 inch to ventilate third vein in No. 3 shaft. One 16 inch bore hole from foot of slope to surface for delivering water from slope pumps.

White Oak.—Three thousand six hundred feet of tail rope for haulage from the Clark vein to the surface completed. One pair of double engines 14x20 inch cylinders to operate the same. Slope in Dunmore vein sectional area 7x10 feet driven through "anticlinal" 250 feet completed.

Jermyn.—Rock plane section 7x14 feet driven from Grassy vein to the Clark vein, a distance of 400 feet. Also a second opening 600 feet in length driven to the surface.

Grassy Island.—The old shaft is being sunk from the 14 foot vein to the bottom split, a distance of 45 feet. The purpose is to make a second opening for the same vein in the new shaft. A large sump is being made to be used in emergency. A new brick engine room has been erected at new shaft for shaft engines, which are on the ground.

The old frame tower on coal shaft has been replaced with a substantial structure of yellow pine.

The steam plant consisting of 18 cylinder, 1 return tubular and 1 return porcupine boiler is being replaced with sterling boilers. This work is now under way, four batteries of sterling boilers being in place.

Babylon Colliery.—A tunnel has been driven from the middle to bottom split of Red Ash vein, near foot of shaft.

JERMYN AND COMPANY

Jermyn No. 2.—Slope driven from outside to the Top vein.

Jermyn No. 1.—Installed Jeanesville pump at Jermyn No. 3, 3,500 gallon capacity.

Removed four tubular boilers from Jermyn No. 3 to No. 1 boiler plant, thereby making one plant of tubular boilers instead of heretofore three tubulars and three cylinders at No. 1 and four tubulars at Jermyn No. 3.

A slope 300 feet long was driven from Clark vein to 1st Dunmore vein for ventilation and transportation.

Tunnel driven from No. 1 to Jermyn No. 3 in the Baltimore vein.

PENNSYLVANIA COAL COMPANY

The new breaker that was being built in 1903 started up work on February 1, 1904. There is being built at present a new steam plant at the breaker, Sterling boilers, capacity 1,704 horse power, to replace the 900 horse power Babcock and Wilcox boilers, these to be removed elsewhere.

ELLIOTT, McCLURE AND COMPANY

Installed rope haulage in the Clark vein. Enlarging the second opening which has resulted in a great improvement in the ventilation. The operation of small pumps and engine in No. 1 Dunmore vein by compressed air.

A new Jeanesville compound duplex pump 17x28x16x36 inch, located in the Clark vein now pumps all the water to the surface.

The cribbing in the up-cast has been replaced by 22 feet of concrete.

They have also erected four stacks 48 inches by 80 feet, furnishing them with good draft for their boilers.

DELAWARE AND HUDSON COMPANY

Greenwood No. 2.—Rope haulage road No. 1 driven 1,200 feet to

IMPROVEMENTS

DELAWARE AND HUDSON COMPANY

Clinton.—New tail rope installed 1,000 feet in length, with a pair of double engines 14x20 inch in River Side Slope to pull coal north and south. A new hospital "First Aid," and wash house has been erected outside for employes of the Dunmore vein. Two new ventilating fans erected, each 20 feet in diameter.

No. 1. Carbondale.—Tail rope has been extended 1,000 feet, delivering cars to main line.

Powderly.—New car shop, supply house and blacksmith shop erected.

Jermyn.—Rock tunnel completed from the Archbald vein to the Dunmore vein, distance 125 feet. New electric motor 4½ tons with 12x18 inch reel on top for lowering loaded and hoisting empty cars in chambers.

White Oak.—New car shop has been erected. New plane in Dunmore vein finished.

PRICE-PANCOAST COAL COMPANY

A rock slope has been sunk in the Diamond vein over the "Anticlinal." A pair of double engines has been put in same vein to hoist the coal from this slope; size of engines 24x36 inch. In No. 3 vein a slope has been sunk 600 feet in length to the river line, and a pair of engines put in to hoist the coal, 12x12 inch in size. No. 2 Gravity Plane that was abandoned six years ago has been opened. In the Clark vein a new plane has been built, 600 feet in length. Dunmore No. 2 vein, the west slope, 900 feet in length, has been graded, and a pair of engines 12x12 inch in size erected outside to hoist the coal. One 250 horse power boiler was installed.

PENNSYLVANIA COAL COMPANY

No. 1 Colliery, Outside—In 1904, work was commenced on the installation of 300 additional horse power "Babcock and Wilcox" boilers, and new 10 foot forced draft fan; also new "Cochrane" feed water heater and 12x8x12 inch "Duplex Scranton Pump" and new 50,000 gallon water tank. This work has all been completed during the year. The following buildings have been erected during the year. A new stone powder house 12x14 feet; a new stone oil house 12x12 feet 7 inch; also new brick wash house for miners 16x24 feet. Work is progressing on new brick building 16x36 feet to contain three rooms; office for outside foreman, shifting shanty for firemen, and shifting place for breaker men.

No. 2 Shaft, Outside.—The fan and head house, which was burned during the year, has been replaced by concrete buildings. A 12 inch concrete wall has been built between the down-cast and up-cast from foot of shaft to fan.

No. 1 Shaft, Inside.—Water tunnel from Lackawanna river to No. 1 Shaft. No. 1 Colliery has been driven in 1,600 feet during the year, and on the No. 1 end, 1,900 feet. Total distance driven since the tunnel was commenced, 5,200 feet. Distance yet to be driven, 1,600 feet. Another tunnel has been driven 675 feet from the third Dunmore vein to the second Dunmore vein, to carry the water to main tunnel, sectional area 6x9 inch.

CONDITION OF COLLIERIES AND IMPROVEMENTS

DELAWARE AND HUDSON COMPANY

Clinton Colliery.—A new slope was sunk from the surface to the Grassy vein, distance on pitch 1,800 feet. Coal hoisted to the surface by a pair of 14x20 Flory engines using tail rope system. Breaker has been overhauled and a new trestle 300 feet in length to head of breaker has been completed. Condition of mine roads good; drainage good; ventilation fair.

Coal Brook Colliery.—One six-ton electric motor has been added, making 8 air motors and 7 electric in use pulling coal, and one Turbine pump driven by an electric motor and delivering 2,500 gallons of water per minute to surface, has been added to equipment. A new opening to Grassy vein on the company farm connected by railroad 3,000 feet in length has been made. Also one new 16 ton mine locomotive for pulling coal from opening has been added. Ventilation fair; other conditions good.

No. 1 Carbondale Colliery.—New engine plane on east side No. 1 slope, 1,200 feet in length, delivering cars to foot of slope haulage road north of No. 3 shaft, has been rebuilt pulling cars to foot of No. 1 slope distance about 4,000 feet. Condition of colliery, ventilation, roads and drainage, good.

Powderly Colliery.—Locomotives has been placed on east side, pulling coal from Grassy opening to head of plane, a distance of 3,000 feet. Electric lights have been placed in breaker office and buildings. Ventilation fair; other conditions good.

Jermyn Colliery.—New 6-ton electric motor added for pulling coal, and one pair of 10x12 engines delivering supplies from surface to foot of shaft, a distance of 1,800 feet. A new washery, capacity 800 tons per day, equipped with the latest improved machinery, is near completion. Ventilation in many places is bad; other conditions good.

White Oak Colliery.—Slope driven through anticlinal 900 feet in length. Condition of colliery, fair.

HILLSIDE COAL AND IRON COMPANY

Clifford Colliery.—A tail rope and engine plane combination haulage system has been installed. A transmission line has been run from the power house at No. 2 shaft over a mile away and through bore hole from the surface to the south section of Dunmore vein, for the purpose of haulage and pumping. One motor and one electric pump have been installed there. Condition of colliery, fair.

No. 2 Shaft Colliery.—A new fire-proof boiler house has been erected. One turbine pump of one thousand gallons capacity driven by electricity, and two triplex plunger pumps of 600 gallons capacity each driven by electricity, have been installed in the Clark vein, the water being delivered to surface through boreholes. A saw mill has been erected, driven by steam power, for the purpose of cutting all prop timber, which is extensively used on account of so much robbing being done. A tunnel has been driven from the bottom Dunmore vein to the second one overlying the bottom, the distance between being 16 feet vertical, the length of tunnel 450 feet the area 6 feet by 10 feet. Condition of colliery, fair.

Jermyn Colliery.—Plane in Grassy vein driven 800 feet. Plane in Archbald vein extended 600 feet. Rope haulage in Archbald vein extended 2,200 feet. A 17 foot Guibal fan has been built to ventilate the Grassy vein. A Dickson engine, 16 by 30 inch cylinder, operates the fan. An 8-inch bore hole driven 147 feet from the surface to the Archbald vein to convey steam to operate fan on the surface.

White Oak Colliery.—Tail rope haulage in Dunmore vein straightened and graded for a distance of 1,600 feet. No. 2 slope Dunmore vein extended 400 feet. Tunnel in Dunmore vein driven through fault 150 feet. No. 6 Tunnel re-opened, and 2,200 feet of tracks laid to operate it. No. 8 Tunnel to Dunmore vein re-opened and tracks laid preparatory to robbing.

HILLSIDE COAL AND IRON COMPANY

Erie Colliery.—A two-story building of reinforced concrete 29 x 74 feet was erected for storehouse purposes. Three tubular boilers were installed equal to 300 horse power, or 1,200 in the aggregate. One 7½ ton electric motor. West side steam plane extended 400 feet. East side plane extended 1,400 feet. One 6-inch bore hole from surface to the Grassy vein for slushing purposes to recover pillars.

SCRANTON COAL COMPANY

Raymond Colliery.—The Raymond shaft has been sunk from the Clark to the Dunmore vein, a distance of 86 feet, cutting a four foot vein of excellent coal. The second opening has also been sunk from and to the same vein.

TEMPLE IRON COMPANY

Northwest Colliery.—An air shaft was sunk to Mills vein, a distance of 32 feet. A Guibal fan was erected on this shaft 20 feet in diameter for ventilation. It is driven by an electric motor. A 75 K. W. generator driven direct by a Taylor-Chandler engine was installed to generate current to supply the motor.

HUMBERT COAL COMPANY

Sunnyside Colliery.—A new vein of coal has been opened near top of mountain about 2,000 feet from the breaker. A new mule barn and a fireproof stone powder house were erected. Additional railroad tracks have been laid in order to meet the increased capacity of the colliery.

MORSS HILL COAL COMPANY

Morss Hill Colliery.—A slope was sunk from the surface to top vein, a distance of 125 feet, the average pitch twenty degrees and a steam hoist was installed. Water way was driven to Third vein. The breaker and trestle thoroughly repaired and new breaker engine, jigs, screen, etc., installed. A 65 K. W. generator, electric hoist, two motors for shop purposes and a complete system of electric lighting for breaker and offices were installed.

under the Lackawanna River to avoid dangers from flooding; a 30 inch pump hole, 130 feet deep drilled; a centrifugal slush pump, 36 inches in diameter, driven by single engine, 8 x 10 inches, installed.

Jermyn Colliery.—Brick boiler house addition, 54 x 70 feet, containing 4 Wickes boilers, 300 H. P. each, in course of construction; two 24 inch bore holes, 235 feet deep, drilled for pumping water to surface; two Scranton Compound Duplex pumps, 19 x 36 x 21 x 36 inches, capacity 5,000 gallons a minute, installed; new plane from Archbald vein to Grassy vein driven 350 feet; one six and one-half-ton motor with reels installed; an 8 inch bore hole, 120 feet deep, drilled for slushing purposes.

White Oak Colliery.—Two 10 inch bore holes drilled for exhaust steam and discharge from slope pump; one 19 inch bore hole drilled for pumping water to surface; one Scranton Plunger pump, 20 x 10 x 36 inches, capacity 800 gallons a minute, installed; one Allison Plunger pump, 20 x 10 x 24 inches, capacity 600 gallons a minute, installed.

HILLSIDE COAL AND IRON COMPANY

Forest City Colliery.—The old Forest City breaker washery was torn down and a new one, 68 feet wide, 100 feet 6 inches long and 130 feet 7 inches high, erected. The lower portion of this washery up to the machinery line, including the pockets, is of reinforced concrete. All mud coal, including chestnut, and all small sizes from buckwheat down, are prepared there, and ten double-compartment jigs are used in separating the impurities from the coal. Two additional boilers, 125 H. P., locomotive type, have been added to the Forest City breaker boiler room, and the water tunnel connecting the Clark vein workings at No. 2 shaft was completed by the Delaware and Hudson Company and connection made, which will drain the entire workings above that level. Clifford breaker was abandoned the latter part of the year and all the coal, including that from Clifford shaft, is now being prepared through the Forest City breaker and washery. A new Compound Duplex Plunger pump, 18 x 28 x 10 x 36 inches, has been installed in the dip workings in Clifford shaft to deliver water to the surface or to the new washery, as needed.

ARCHBALD COAL COMPANY

Tappans Colliery.—The coal from this colliery heretofore was delivered into the Delaware and Hudson railroad cars on a siding at Archbald, after being hauled in wagons a distance of one and a quarter miles. To eliminate this expense a new track has been laid, 6,600 feet in length, with 40 pound T iron rails, from the breaker to the top of an incline plane. A new incline has been built, 1,750 feet in length, with 40 pound iron; new coal pockets have ben built at bottom of new plane where coal is dumped from special cars, built for the use of the colliery, and taken to and from the breaker by a new twenty-ton locomotive. A branch of the Delaware and Hudson Railroad is built from the main line nearly midway between Archbald and Winton to the new coal pockets. This is a decided improvement and reduces the cost of transportation from the colliery to the railroad, and will also be the means of increasing the output of the colliery. The old Pierce Coal Company's shaft has been reopened

locomotive to dispense with the dumping of coal at the chutes and transportation by means of large cars. A pump shaft was sunk 80 feet to the Top split of the Clark vein, where a single Goyne pump 22x16x36 inches was installed at the foot.

Jermyn Colliery.—A rock plane 700 feet in length was completed from the Archbald to the Grassy vein. To improve transportation on the inside, a 6-ton electric motor was installed. New hoisting engines with double drums of the Flory type, size 14x20 inches, were placed in the Archbald vein haulage extension and Grassy vein plane. *Outside.* A plane for rock dump was built, operated by a 25 horse power electric motor. To drain the upper veins of the West side workings, a concrete culvert 300 feet long, and an open ditch 350 feet in length were built. A new electric power house, 36x50 feet, was built of brick.

White Oak Colliery.—From the Archbald vein No. 6 tunnel a second opening or tunnel 250 feet long, 7 feet high and 12 feet wide, was driven to the surface, and a new return was driven for the installation of a fan. The rope haulage at the head of No. 8 plane, Dunmore vein, was extended 2,500 feet.

HILLSIDE COAL AND IRON COMPANY

Forest City Colliery.—A rock tunnel was driven 7 by 10 feet in section and 275 feet in length, to serve for a second opening for the "Ring" vein. A new 16-inch bore-hole was put down a depth of 225 feet, located 540 feet east of the shaft, and a 12-inch casing pipe inserted, to get rid of the excess water from the 2nd and 3rd Dunmore veins in rainy seasons. The same kind and size of bore-hole was put down near the Forest City Washery to supply the washery with water from the mine. One new 7½ ton cable reel electric motor was installed for the purpose of increasing the output.

The fan and air shaft at No. 2 Shaft are undergoing extensive repairs which have not yet been completed. A new concrete locomotive house was built, size 45 feet 2 inches x 57 feet 3 inches.

Erie Colliery.—The colliery has been shut down since August on account of extensive repairs to the breaker. The result will be better preparation and a larger output. New shaking screens and patent pickers are being added.

The shaft was overhauled, new buntings and guides placed, also new carriages installed. The East side fan was remodeled and rebuilt entirely on the old foundation.

Glenwood Colliery.—The breaker was abandoned May 3, 1909, and has been torn down, with the exception of the North wing, which will be used for a washery. The coal from the Glenwood mine will be transported underground to the Erie shaft and hoisted to the Erie breaker, where it will be prepared.

HUMBERT COAL COMPANY

Sunnyside Colliery.—Two new drifts were opened to the Dunmore vein. A new breaker is in course of erection, with a capacity of 800 tons per day, to replace the one destroyed by fire July 3, 1909. A new boiler plant has been erected of concrete 120 feet from new breaker.

OUTLOOK COAL COMPANY

Outlook.—Ventilation, safety conditions and drainage fair.

FALL BROOK COAL COMPANY

Murrins.—Ventilation, safety conditions and drainage good.

CLINTON FALLS COAL COMPANY

Clinton Falls.—Ventilation bad; safety conditions and drainage fair.

AINSLEY COAL COMPANY

Sunset.—Ventilation, safety conditions and drainage fair.

IMPROVEMENTS

DELAWARE AND HUDSON COMPANY AND HUDSON COAL COMPANY

Coal Brook Colliery.—Six 6-ton electric motors added to present power for transporting coal inside, which dispenses with compressed air plant; 150 horse power electric hoist operating slope and plane 1,000 feet in length delivering coal to main locomotive road to breaker, 200 horse power electric motor for driving 20-foot fan, replacing steam engine power; 50 horse power electric hoist to replace a 10 by 12 inch double engine driven by compressed air. Concrete base for supply house 28 by 60 feet for storing supplies.

Powderly Colliery.—A 12-ton locomotive added to present power for hauling coal from No. 1 Carbondale mine to Powderly breaker. 2,000 feet of 6-inch pipe laid for slushing of culm under the Lackawanna river to secure the roof in this locality. Three 6-ton electric motors, with drum attachments, to draw up and lower cars from face of chambers, in Carbondale No. 1 mine, which dispenses with eighteen mules. Two rock tunnels, 7 by 12 feet in section and 600 feet long, driven through fault opening large track of coal on south side, No. 1 Carbondale mine; and one blacksmith shop, concrete base, 24 by 50 feet, erected at same mine.

Jermyn Colliery.—Rock plane, 7 by 15 feet in section and 200 feet long, driven through fault for developing coal on west side. Generator 250 horse power, 750 amperes, installed for furnishing additional power. Driving a rock plane from the bottom to top split of the Grassy vein 7 by 15 feet in section, 300 feet long at present time. 35 horse power electric hoist installed for lowering and hoisting supplies at east side opening, dispensing with double steam engine 10 by 12 inch cylinders.

Clinton Colliery.—Rock slope 7 by 12 feet in section and 300 feet long for extension of rope haulage from top to bottom vein. Slope in Clifford vein driven 800 feet to present time, to open new level of coal. One Duplex Jeanesville pump installed in River slope delivering water through a 12-inch bore hole to surface.

White Oak Colliery.—10-foot Buffalo steel fan installed, driven by a steam engine 14 x 16 inch cylinders at No. 6 tunnel. Slope 8 by 11 feet in section in progress of sinking. Fan shaft 12 by 12 in section and 65 feet deep for ventilation of this slope. Engine plane 1,000 feet long is being constructed to deliver coal to surface.

7 feet x 12 feet in area, was driven from Bottom to Third vein and equipped with a 65 H. P. electric hoist. A rock plane, 150 feet in length and 7x12 feet in area, was driven from Top to Grassy vein to improve ventilation. A drift, 7 feet x 12 feet in area and 200 feet in length, was driven from the surface to Third vein, and a 10-foot diameter fan installed driven by electricity.

Powderly Colliery.—At No. 1 tunnel a fan 10 feet in diameter, driven by a 35 H. P. electric engine, was installed for ventilating Third vein. A tunnel, 7 feet x 12 feet in area and 150 feet in length, was driven through a fault in the Top vein. The haulage 1,200 feet in length was converted into an electric motor road. A fan 10 feet in diameter, driven by electricity, was installed to ventilate No. 1 Slope. A 21-ton electric motor transports the coal from No. 1 Carbondale to Powderly breaker. 3,500 feet of rope haulage operated by a 12x15 double drum engine installed for Eastside coal.

Jermyn Colliery.—Norwalk air compressor transferred from Coal Brook. Rock plane, 500 feet in length and 7 feet x 12 feet in area, driven from Bottom to Top Split Grassy vein. Rock slope from surface to Clark vein 7x12 feet in area and 180 feet in length.

White Oak Colliery.—Foundations for new breaker completed. Brick boiler house 88 feet x 50 feet, containing 4 Sterling 300 H. P. boilers, was finished. Built blacksmith shop 36 feet by 24 feet; car shop 48 feet x 30 feet; and supply house 20 feet x 40 feet. No. 6 engine plane extended 500 feet, operated by 14-inch x 20-inch engine. Drove manway for No. 3 Slope 200 feet and concreted top, bottom and sides.

HILLSIDE COAL AND IRON COMPANY

Erie Colliery.—A new culm scraper line has been installed between Erie washery and the old Keystone culm bank, for the purpose of conveying the same to the washery for preparation.

A new concrete building has been erected for storing lime, cement, feed and hay.

Two air compressors have been installed within a corrugated iron building, adjoining the fire room, the compressed air to be used for drilling the rock in New County vein.

A new concrete mule barn of twenty stalls, feed room, etc., has been constructed near the foot of Erie shaft, replacing the outside barn on West Side.

A Sullivan undercutting coal machine has been installed in the New County vein, East Side. Several new counter headings have been completed in this section, doing away with less satisfactory haulage roads.

Considerable culm has been slushed into the Clark vein workings underneath the Lackawanna River.

SCRANTON COAL COMPANY

Riverside Colliery.—Two large locomotive type boilers were installed, displacing nine old cylinder boilers.

Raymond Colliery.—Breaker burned down January 22, 1911, and replaced by a modern breaker of 1,000 tons capacity. The new breaker, which resumed operations December 4, is equipped with the latest improved machinery for the preparation of coal, and has an annex where all the smaller sizes down to No. 3 buck is prepared.

CONDITION OF COLLIERIES

DELAWARE AND HUDSON COMPANY

Coal Brook, Powderly, Jermyn and White Oak Collieries.—Ventilation, drainage and condition as to safety, good.

SCRANTON COAL COMPANY

Raymond Colliery.—Ventilation, drainage and condition as to safety, good.

Riverside Colliery.—Ventilation good. Drainage and condition as to safety, fair.

HILLSIDE COAL AND IRON COMPANY

Erie Colliery.—Ventilation, drainage and condition as to safety, good.

ARCHBALD COAL COMPANY

Tappans Colliery.—Ventilation bad in New County vein. Drainage bad. Condition as to safety, fair.

Ventilation good in Dunmore vein. Drainage fair. Condition as to safety, good.

HUMBERT COAL COMPANY

Sunnyside Colliery.—Ventilation, drainage and condition as to safety, fair.

WEST MOUNTAIN COAL COMPANY

West Mountain Colliery.—Ventilation, drainage and condition as to safety, good.

FALLBROOK COAL COMPANY

Murrins Colliery.—Ventilation, drainage and condition as to safety, fair.

IMPROVEMENTS

DELAWARE AND HUDSON COMPANY

Coal Brook Colliery.—Water course to Clinton colliery constructed a distance of 2,000 feet. Installed three 6½-ton electric motors and one 12-ton electric motor for handling coal. Engine plane in No. 21 tunnel, 2,000 feet long, under construction. Installed 16-ton steam locomotive for handling coal from Wilson Creek to the breaker.

Powderly Colliery.—Installed two 6½-ton electric motors with drums. Completed rope haulage in No. 1 tunnel, 3,500 feet long, and rope haulage in No. 1 slope, 1,800 feet long, also completed railroad from Powderly to Jermyn mines, outside. Installed one 21-ton steam locomotive for handling coal from mines to breaker.

Jermyn Colliery.—Finished new slope to bring coal from mines to surface, 350 feet long concreted on four sides, 9 feet by 11 feet, completed 150 H. P. electric hoist on engine plane No. 14. Conveyor line,

300 feet long, delivering coal from surface to breaker is under construction. A 10-foot Buffalo steel fan is under construction in No. 8 plane.

White Oak Colliery.—Grassy slope finished from surface to coal and concreted on four sides. Installed 26 by 48 engines for Gravity No. 3 slope. A 20 foot Guibal fan was erected and equipped with a double 14 by 24 engine, and a brick house, 33 feet by 32 feet, was built for same. A new breaker of 1,500 tons capacity is almost completed. A brick wash-house, 18 by 48 feet, was built. Completed new boiler plant, comprising four 300 H. P. Sterling boilers and brick building. A supply house, 20 by 40 feet, was completed.

ARCHBALD COAL COMPANY

Tappans Colliery.—Two wings were added to the breaker to give additional pocket room, and an addition was made to the boiler house and a shaker placed therein to distribute the fuel.

The loading pockets were housed in and a 100 horse power return tubular boiler was installed to furnish steam heat.

A new Vulcan hoisting engine, 10 by 14 inch cylinders with loose drum 4 feet in diameter, and 8,000 feet of rope haulage, were installed at the New County slope. A new 16 by 12 by 12 Scranton duplex piston pump, 8 inch discharge, 10 inch suction, was installed in the Dunmore shaft.