

No. 4 SLOPE.

This slope is located in Jenkins township, lying south-east of No. 4 shaft. It is 184 feet long, 9 feet wide and 6 feet high. It is operated by the Pennsylvania coal company. Andrew Bryden is general superintendent, and James Bryden is mining boss.

Description.—There is no breaker connected with this mine. They mine and ship about 275 tons of coal per day. They employ 40 miners, 40 laborers, 13 drivers, 6 door boys and 8 company men inside; 5 drivers, 13 company men, 2 mechanics and 1 boss outside: in all 128 men and boys. They are working two gravity planes in the mine; one is 203 and the other is 250 feet long. The vein of coal which they are working is called the Pittston or 14 feet vein. Its average thickness is 11 feet. They drive headways 10, air-ways 15, and chambers from 20 to 26 feet wide. They leave the pillars from 14 to 21 feet wide to sustain the roof. They leave cross entrances from 18 to 50 feet apart for the purpose of ventilation. The roof is slate. The mine is in a good safe working condition.

Ventilation.—The mine is ventilated by the action of the atmosphere; the intakes are located at the mouths of Nos. 3 and 4 slopes: the areas are 54 and 60 feet: the out or upcast is in No. 4 shaft in summer and at the mouth of tunnel in No. 3 slope workings in winter; area about 75 feet; the average amount of fresh air to supply the mine is 35,800 cubic feet per minute; there is no noxious poisonous or inflammable gas evolved in this mine; the main doors on headings and airways are hung so that they will close of their own accord, and they have attendants at all main doors to keep them closed so as to keep a steady current of air and conduct it to the face of the working places; the air is conducted to the face of the workings in one volume; the ventilation has been measured and reported according to law; the ventilation is tolerably good.

Machinery.—They use one hoisting engine of 20-horse power; they have a metal speaking tube in the mine; they have flanges of sufficient dimensions attached to hoisting drum for safety; they have an adequate brake on hoisting drum; the boilers, feed pipes, water gauge cocks, &c., have been cleaned and examined and reported in good condition according to law; they have a steam gauge and safety valve for the purpose of indicating the pressure of steam and for safety.

Remarks.—They have furnished a map of the mine; No. 3 slope and Nos. 4 and 11 shaft workings are connected and can be used as a second opening; they have no house for men to wash or change their clothes in; the mining boss is a practical and competent man; there are no boys working in the mines under twelve years of age; the engineer is an experienced, competent and sober man; there are no persons allowed to ride on loaded cars on the planes or in the slope. The parties having charge know their duty in case of death or serious accident.

No. 5 SLOPE OR GRAND TUNNEL.

This mine is located in Pittston township, about one-fourth of a mile south-east of the Susquehanna river. This mine is opened by a slope and tunnel; the slope is about 500 feet long; it is 10 feet wide by 7 feet high; the tunnel is 500 feet long to where it connects with the slope; the opening is 7 feet wide by 6 feet high; it is operated by the Pennsylvania coal company. Wm. Law is general mine superintendent and James Watson is mining boss.

Description.—There is no breaker connected with this mine. The coal is prepared at No. 2 breaker and the screens in Dunmore; they mine about 300 tons of coal per day; they employ 38 miners, 38 laborers, 21 drivers and 12 company men in the mine, 4 drivers, 18 company men, 2 mechanics and 1 boss outside; in all 134 men and boys; they have two gravity planes in the mine, one is 180 and the other 238 feet long; they are working the Pittston vein of coal; average thickness 12 feet; the character of the workings is drawing back top coal; the headings are 10, airways 15 and chambers 24 feet wide; the pillars are from 16 to 20 feet thick to sustain the roof; the cross-entrances are about 30 feet apart for the purpose of ventilation; the roof is very good slate, and the mine is in a good working condition.

Ventilation.—Ventilation is produced by the action of the atmosphere; they have cut loose in to the old workings of the Butler coal company's mine in several places; there are a great many cave-holes to the surface in these old work-

ing, which causes the air to play backwards and forwards in the mine according to the temperature and pressure of the atmosphere outside; the ventilation is generally good.

Machinery.—They use one hoisting engine of 20-horse power; they have a metal speaking tube in the mine; the boilers have been cleaned and examined and reported in good condition; they have a steam gauge to indicate the pressure of steam.

Remarks.—They have furnished a map of their mine; they have no house for men to wash or change their clothes in; there is no noxious or poisonous gas evolved in the mine; the mining boss seems to be a practical and competent man; there are no boys working in the mine under twelve years of age; the engineer seems to be a practical, competent and sober man; they do not allow any person to ride on loaded cars on the planes in the mine; the parties having charge know their duty in case of death or serious accident.

NOTE.—Alexander Craig, Esq., has charge of the boilers and machinery of the Pennsylvania coal company. He is a gentleman of practical experience and he has the boilers cleaned and examined and the machinery kept in good condition, so as to comply with the requirements of the mine ventilation laws of 1870.

TOMKIN'S COLLIERY.

This colliery is located in Pittston borough, and is situated directly on the east bank of the Susquehanna river. The Checkered vein is worked by a tunnel from the crop; the shaft is 130 feet deep to the 14 feet vein, (abandoned,) and it is 150 feet deep to the Third or Lower vein. It is operated by Alva Tompkins, Esq. John Hughes is mining boss and D. Davis is outside foreman.

Description.—There is a breaker connected with shaft buildings; they mine and prepare about 75 tons of coal per day; they employ in the Checkered vein 15 miners, 16 laborers, 6 drivers, 3 door-boys and 6 company men, and in the Third vein 5 miners, 7 laborers, 1 driver, 1 door-boy and 3 company men; 20 slate pickers, 3 head and plate men, 7 company men, 2 mechanics and 1 boss outside; in all, 99 men and boys. They are working a slope 75 feet long, and driven on an angle of 35 degrees; they are working the Checkered and Third vein of coal: average thickness of the Checkered is 4½, and the Third vein is 6 feet; they work headings 10, and chambers 24 feet wide; they leave pillars from 12 to 18 feet wide to sustain the roof; they leave cross entrances about 20 feet apart for the purpose of ventilation; the roof is slate and rock; the mines are in a good working condition.

Ventilation.—Ventilation in the Checkered vein is produced by means of a furnace, and in the Third vein it is produced by means of a steam jet; the intake is located in main opening, area 37 feet; the up-cast is located in furnace air-shaft, area 36 feet; the amount of pure fresh air is 9,750 cubic feet per minute; there is inflammable gas evolved in the lower vein; the mines are examined every morning before men go to work, and every evening to see that the main doors are closed: 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 an accident to any of the others; the air is circulated to the face of the workings in 2 splits in the Checkered vein; the amount of ventilation has been measured and reported; ventilation is good.

Machinery.—They use 1 hoisting engine of 40-horse power, 1 pumping engine of 30-horse power, and 1 breaker engine of 15-horse power; they have a metal speaking tube in the shaft; they have 1 self-dumping carriage with an improved safety-catch, bridle chains, etc., attached to it; they have an adequate brake and flanges of sufficient strength and dimensions attached to the hoisting drums: the ropes, links, chains and connections are in good condition; the boilers have been cleaned and examined and reported in good condition; they have a steam gauge to indicate the pressure of steam.

Remarks.—They have furnished a map of mine; they have a second opening for the Checkered vein about 400 feet from main opening; they have no house for men to wash or change in; the mining boss seems to be a practical, competent man; he has a fire boss to assist him; there are no boys working in the mines 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 carriages in the shaft

DUNMORE, PA., *March 8, 1884.*

DEAR SIR: Our breaker stands on the tract in the warrantee name of Elizabeth Rought, Winton borough, and the drift for coal starts on same tract, near the corner of said tract, Sarah Dana and William Rawle tracts, object being to mine coal from the two latter tracts, principally from the Rawle. Breaker presumed to be ready for business in April and of six hundred tons' capacity. Coal intended to be shipped over a branch railroad now being constructed in the interest of the New York, Susquehanna and Western Railroad Company, and may be ready for coal freights at our place some time in May next, judging from present rate of progression. Estimated coal area about three hundred acres, of the Archbald vein.

Respectfully submitted,

EDWARD DOLPH.

P. BLEWITT, Esq.,

Inspector of Mines.

Shaft No. 5.

Sunk on Wilkins property, seventy-five feet from north-west line of the Burschell and about one hundred and forty feet from lower north-west corner of same. Shaft about three hundred and three feet in depth and cutting four veins of coal. Carpenters are now lining shaft. The putting in of machinery in breaker is about completed. I gave you a report of the sinking of this shaft in table No. 7, for 1882.

Yours respectfully,

JAMES YOUNG,
Mine Superintendent.

PENNSYLVANIA COAL COMPANY'S OFFICE,

DUNMORE, *January 26, 1884.*

vein. Headings and air-ways have also been driven, but the greatest progress has been made in the top or first Dunmore seam. A new breaker has been built 1,160 feet east of Shaft No. 1, but there has been no coal run through it yet, owing to the dullness of the coal trade.

Shaft No. 4, "Gypsey Grove."—We are grading a new plane to cut off Hale's upper gangway. It is located about seven hundred feet from the D. & H. C. Co. line on the Horsefield tract, in bottom seam of coal.

Shaft No 5.—We have about completed a plane on the northeast side of shaft in No. 3 seam. It will be about 800 feet long and driven on a course of S. 50° E. We have also commenced grading another plane in No. 2 seam driven on the same course as the plane in No. 3 seam. It is located on the southwest side of shaft. An incline was driven through the anticlinal that exists between shafts Nos. 2 and 5 for the purpose of a second opening and drainage. This passage connects the bottom seam of No. 2 Shaft with the first Dunmore seam in Shaft No. 5. This does away with all pumps and other machinery at Shaft No. 2, which was abandoned September 1, 1888.

Hillside Coal and Iron Company.

Clifford Colliery, with a capacity of 1,000 tons of coal per day, was completed. This plant is made up of a breaker with the latest improvements, simplified as much as possible, keeping in view three essentials, sufficient height to pick out slate and rock before the product reaches the rolls, and to avoid putting through the rolls anything that had been broken in the process of mining; a shaft 12'x30' opening and 300 feet deep has been finished. It is operated by a pair of 22"x36" direct acting engines equipped with two Dickson safety carriages; a slope for second opening 360 feet long to hoist rock, of which, owing to the thinness of the seam, there is a great quantity, and for a manway. The breaker is located 700 feet from the shaft. The coal is hauled from the shaft to the breaker, and the empty cars hauled back by a wire rope haulage.

Erie Shaft.—A slope 250 feet long for a second opening and for a manway has been finished on the west side of the Lackawanna river.

Glenwood Shaft No. 2, to the Archbold vein was completed; the total depth from the head to the foot is 350 feet. A pair of direct acting engines, 22x48, with two Dickson safety carriages, is the motive power. A fan 18 feet in diameter by six feet face has been erected to ventilate Glenwood No. 1 Shaft, and it is run by an engine 16x36. Rope haulage is used at this colliery. At all the collieries of this company electric lights are in use in and around the breakers. They were first put in as an experiment at the Erie breaker and they were so complete a success that their general introduction soon followed. The arc light is used, and coal can be cleaned by its light even better than by daylight.

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-

Diamond No. 2 Shaft has been enlarged from 10 x 40 feet to 12 x 40 feet from the surface to the New County vein, and extended from New County vein to the Clark vein at 12 feet by 33 feet 5 inches, and is now being sunk at these dimensions to the lower "Dunmore" veins.

A new fan has been erected, dimensions 6 x 16 feet.

Hyde Park Shaft. A new plane was driven on a grade of one and one-half inches on ten feet. Sectional area, 7 x 14 feet; length, 395 feet. Another plane was driven on a grade of one inch in ten feet; sectional area, 7 x 12 feet; length 310 feet.

Manville Shaft. A new slope of the following dimensions was driven: Length, 1,100 feet; sectional area, 84 square feet; gradient, two and one-half degrees.

Holden Shaft. A plane of the following dimensions was driven: Length, 112 feet; sectional area, 60 square feet; grade, 27 degrees.

Delaware and Hudson Canal Company.

This company is opening up No. 3 Dunmore vein, and preparing for the installation of an extensive system of tail top haulage at their "Dickson" mine.

Von Storch Mine. A plane of the following dimensions has been completed during the year: Length, 238 feet; sectional area, 14 x 7; gradient, 2 in 10.

Lackawanna Iron and Steel Company.

A tunnel has been driven from this company's "Pine Brook" mine from No. 2 Dunmore vein through a fault a distance of 820 feet, and it was intended to reach the same vein, but the vein they found resembles Dunmore No. 3.

William T. Smith.

Mount Pleasant Mine. A tunnel was driven from the four-foot to the five-foot vein; length, 200 feet; sectional area, 7 x 8 feet.

Pennsylvania Coal Company.

At **No. 5 Dunmore** shaft two planes have been driven, one in the Clark vein, 400 feet long, 90 square feet sectional area, 9 degrees gradient.

One in the Bottom vein 760 feet long; 90 square feet sectional area, 5 degrees gradient.

A slope is being driven in the Second Dunmore vein, and another in the Third Dunmore vein.

Three Babcock & Wilcox water tube boilers of 450 H. P. are in course of erection.

Cayuga.—A new Duplex pump, 28x12x36, has been installed in the "Fourteen Foot" vein, and is now in operation.

Bellevue Shaft, etc.—The main shaft (12x18 feet) has been sunk from the Clark vein, a distance of one hundred and thirty-seven feet into the Dunmore No. 2 vein.

The Oxford inside slope has been driven a distance of eighty-eight feet, from the New County vein into the Clark vein. A tunnel has been driven from the Clark into the Big Vein, height sixty-five feet.

Electric Haulage.—An electric haulage system one thousand feet long has been installed in Dunmore No. 2 vein.

The following extensions were made to haulage systems in use before 1904, namely: G. gangway No. 3 tunnel, 900 feet; No. 2 slope, Dunmore No. 2, 1,100 feet; M. gangway and Sloan road, 4,350 feet; No. 1 County vein, 1,000 feet.

Shaft Concreted.—The cribbing in the supply shaft has been replaced by concrete.

New Electric Motors and Pumps.—Four new electric motors have been added during the year, making a total of eight in the mine. A new electric pump has also been installed at the foot of the supply shaft, and two other and similar pumps at other points in the same mine.

PENNSYLVANIA COAL COMPANY

No. 5 Shaft.—A rock plane was driven from No. 3 Dunmore to No. 1 Dunmore vein. Length 330 feet; section 7x14 feet. Also a new car and blacksmith shop was built outside; dimensions 30x60 feet.

A number of the other operators have made similar improvements during the year, but have not thought it proper to report the particulars to appear in this report.

Mine Foremen's Examinations

The annual examinations for candidates for certificates as mine foremen and assistant mine foremen were held June 10 and 11, in the City Hall, Scranton. The following persons were recommended for certificates:

Mine Foremen.—W. W. Inglis, Thomas Barber, Lucien F. Hiorns, Frank E. Shedd, William Campbell, Henry Davies, H. D. Powell, William P. Kelly, Henry J. Williams, William P. Jennings, Martin F. Sheridan, John Moore, George W. Oswald, Isaac Dawe, John H. Watkins, Henry H. Hitchings, Thos. J. Williams, Jos. Morris, James J. Cusick, Thos. W. Watkins, James Tibbs, Peter Comtesse, Jr., Thomas Malloy, Jos. R. Burns.

Assistant Mine Foremen.—Edward Dempsey, David James, James Cooney, Martin Quinn, James D. Robinson, John J. James, Martin Corcoran, John J. McDermott, Wm. Morgan, Anthony Gallagher, Jno. E. Phillips, Fred. E. Carpenter, Benjamin Evans.

DELAWARE AND HUDSON COMPANY

The workings of the Marvine have been connected with Marvine No. 2 shaft by driving 1,300 feet of narrow work. No. 2 shaft has been concreted to a depth of 70 feet from the surface, and concrete buntons put in place.

Leggitts Creek.—A rock plane was driven from the Rock vein to the Fourteen Foot vein, a distance of 350 feet.

A Jeffries pulverizer has been installed to crush refuse from breaker and flush into the mine workings.

A new engine 14x16 and scraper line has been installed to feed culm from the dump into washery.

Dickson.—A rock plane 450 feet long has been driven from Dunmore No. 4 to Dunmore No. 3 vein.

During the year an addition measuring 24x50 feet was made to the breaker. New towers were erected over the main hoisting and man shafts.

Von Storch.—A 6-inch bore hole 260 feet in depth was drilled into the workings of the Clark vein. This will be used for flushing purposes.

Von Storch Washery.—Two 78-inch locomotive type boilers, and a 14 inch x 16 inch engine and conveyor line were installed during the year.

The ventilation and drainage of the mines are good.

SCRANTON COAL COMPANY

Mines are well ventilated, roads are good and properly drained.

PRICE-PANCOAST COAL COMPANY

A new air shaft, 10x14 and 300 feet deep, is being sunk. On this shaft a 20 foot diameter Guibal fan will be erected. This arrangement will not only provide and increase quantity of air all around, but it will also allow the ventilation of the Dunmore veins being duplicated.

A tail rope system of haulage has been installed in the Diamond vein workings. A similar system of haulage is being installed in the Dunmore vein workings.

A new gravity plane 600 feet long has been made in No. 3 vein, and another 350 feet in the Clark vein.

In the Diamond vein a slope has been sunk 800 feet, and a 40 horse-power engine installed to hoist the coal.

The condition of the workings as to ventilation and drainage is good.

PENNSYLVANIA COAL COMPANY

No. 5 Shaft.—Ventilation and drainage good.

GREEN RIDGE COAL COMPANY

Ventilation and drainage good.

The remaining mines in the district are ventilated by natural means. The employes work for the most part in scattered groups. Good ventilation is provided under the circumstances.

A. D. AND F. M. SPENCER

No. 1 Shaft.—Abandoned April 1.

A new shaft 10 feet x 14 feet for ventilating purposes and a new Guibal fan installed.

The mine ambulance has been fitted with heating apparatus for the comfort of the injured.

PENNSYLVANIA COAL COMPANY

No. 5 Shaft.—Concrete cribbing has been put in the shaft from the rock to the surface, also a new brick fan drift with concrete roof. Work has been started on a new brick building 36 feet x 46 feet, for an electric power plant, also new brick building 21 feet x 38 feet for shaft engine house started. New concrete foundation and new bed plates have been put under the shaft engines.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as Mine Foremen and Assistant Mine Foremen was held in the City Hall, Scranton, May 13 and 14. The Board of Examiners was composed of the following members: H. O. Prytherch, Inspector, Scranton; John Corcoran, Superintendent, Rendham; T. F. McNally, miner, Old Forge; and John D. Griffiths, miner, Scranton.

The following persons passed a successful examination and were granted certificates:

Mine Foremen

Reese Lloyd, Scranton; David J. Davies, Scranton; Walter G. Hughes, Scranton; Arthur C. Dale, Scranton; Michael Ford, Rendham; James D. Robinson, Coyne; John R. James, Scranton; Edward J. Garvin, Rendham; John McGinley, Rendham.

Assistant Mine Foremen

Eli Morgans, Scranton; Walter Jones, Scranton; John J. McHugh, Scranton; Edward W. Morgan, Scranton; N. J. Cunningham, Scranton; Andrew Meixner, Scranton.

NORTH END COAL COMPANY

North End.—Ventilation, roads and drainage good. Condition as to safety good.

The remaining companies whose workings are in surface veins have good ventilation. The drainage, however, depends largely on the season, as surface water finds its way into the workings in the wet season. Condition as to safety good.

IMPROVEMENTS

DELAWARE AND HUDSON COMPANY

The rope haulage system of the Von Storch mine was extended 2,400 feet in the Rock vein.

PENNSYLVANIA COAL COMPANY

No. 5 Shaft, Outside.—A 36 x 46 foot brick building that was started in 1907, has been completed. This building contains one 20 x 21 inch engine with a continuous current generator 240 K. W., to be used for electric haulage inside. A brick building, 21 x 36 feet, to be used as shaft engine house, has been completed.

No. 5 Shaft, Inside.—A 7 x 10 foot rock plane has been driven from Clark vein through fault to 2nd Dunmore vein, a distance of 985 feet.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in City Hall, Scranton, May 12 and 13. The Board of Examiners was composed of the following members: H. O. Prytherch, Inspector, Scranton; John Corcoran, Superintendent, Rendham; James W. Reese, Miner, Scranton and William Jenkins, Miner, Scranton.

The following persons passed a successful examination and were granted certificates.

Mine Foremen

John J. James, Harry Baston, Benjamin M. Jennings, Martin Corcoran, David J. Matthews, William J. Townsend, Henry Conway, Frank H. Doud, William Davey, Thomas Abraham.

Assistant Mine Foremen

David R. Gibbs, Olaf Anderson, Henry Edwards, James Leyshon, Charles Bartosch, Thomas J. Edwards, Thomas D. Maschal, Edward Widden, David Lodwick, James E. Griffiths, John Hopkins, Christopher F. Robertson.

NORTH END COAL COMPANY

North End.—Ventilation, roads and drainage fair. Condition as to safety good.

A. D. AND F. M. SPENCER COAL COMPANY

Spencer.—Ventilation, roads and drainage fair. Condition as to safety good. The principal work done is robbing pillars.

CARNEY AND BROWN COAL COMPANY

Carney and Brown.—Ventilation, roads and drainage good. Condition as to safety good. The principal work done is robbing pillars.

NAY AUG COAL COMPANY

Nay Aug.—Ventilation, roads and drainage fair. Condition as to safety good. The principal work done is robbing pillars.

BULLS HEAD COAL COMPANY

Bulls Head.—Ventilation, roads and drainage fair. Condition as to safety good. The principal work done is robbing pillars.

CLEARVIEW COAL COMPANY

Clearview.—Ventilation, roads and drainage good. Condition as to safety good.

 IMPROVEMENTS

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond.—A rock tunnel, 7 x 12 x 325 feet long, driven through fault from Surface vein to Surface vein.

Diamond Tripp shaft. A rock tunnel, 7 x 12 x 250 feet, driven from Rock vein to Diamond vein. A concrete and fire-proof blacksmith and carpenter shop combined. A new wash house to accommodate the employes in and around the colliery. One Duplex pump installed in No. 2 shaft, capacity 3,500 gallons.

PENNSYLVANIA COAL COMPANY

Pennsylvania No. 1.—Opened up the Clark and Marcy veins near the breaker by a slope.

Pennsylvania No. 5.—Erected a fire-proof steam boiler plant, 100 x 58 feet, and placed therein three batteries of B. and W. boilers, a total of 1,200 horse power, together with feed water heater, fan, etc. Repaired and remodeled the breaker. It is now practically a new breaker. Installed electric hoist inside for the purpose of dropping the coal from the 1st and 2d Dunmore veins above the fault, down through the Clark vein to the shaft below the fault. Drove a 7 x 10 rock tunnel, 370 feet long, from second Dunmore vein to first Dunmore vein, to be used for haulage. Placed a concrete cribbing from the surface to the rock, a distance of about forty feet in old No. 2 shaft, and erected a ventilating fan.

Pennsylvania **No. 5 Colliery.**—Erected new hay barn on the outside constructed of corrugated iron. One Duplex slushing pump 24x8x36 installed in a building constructed of corrugated iron on the outside; one 21x20 automatic engine with connections to a 240 K. W. and D. C. generator; one 8x10 McEwen generator with 100 ampere for lighting purposes. Installed on the surface in a building constructed of corrugated iron, one electric hoist, 30 H. P., to handle coal in the No. 1 Dunmore vein in the old No. 2 shaft section. At old No. 2 shaft one 18-foot fan was installed in a building constructed of corrugated iron, to ventilate the Clark No. 1 and No. 3 Dunmore veins. One electric hoist, 25 H. P., installed in No. 1 Dunmore vein to handle coal on slope. One electric hoist, 25 H. P., installed in No. 3 Dunmore vein to handle coal on slope.

Gipsy Grove Colliery.—Old Gipsy Grove breaker destroyed by fire on April 27, 1911. Erected a new head frame and constructed coal pockets of concrete and corrugated iron, from which the coal from the Gipsy Grove mine will be dumped and conveyed to the Pennsylvania No. 1 breaker. Erected a new engine house, carpenter shop and wash-house of wood on the surface.

SCRANTON COAL COMPANY

Pine Brook Colliery.—A rock tunnel 6x12x92 feet long on a pitch of 45 degrees was driven through fault from Dunmore No. 2 vein connecting Dunmore No. 2 vein. A rock tunnel 7x12x240 feet long on a pitch of 2 degrees was driven from Dunmore No. 2 vein connecting Dunmore No. 1 vein. Sunk a shaft for second opening 10x10x30 feet deep from Dunmore No. 1 to Dunmore No. 2 vein. Erected concrete fireproof barn. All pump-rooms, engine houses, emergency hospitals and foremen offices inside of mines are of incombustible material.

Mount Pleasant Colliery.—Erected new fireproof barn of iron and concrete. All pumphouses, engine houses, emergency hospitals and foremen offices inside of mines are of incombustible material.

West Ridge Colliery.—Erected a new second opening provided with 360 feet of steps to be used in an emergency in case the steam plant is put out of commission. Cleaned up and provided a new return airway along side of slope, 2,000 feet long, as a traveling way for men and mules.

Also added during the year fire escapes to the breaker, beginning in the tower and continuing down on the outside of the breaker to the ground; also installed other escapeways from the screen rooms making two escapes from this point.

PRICE-PANCOAST COAL COMPANY

Pancoast Colliery.—All barns, engine houses, pump-rooms and air-bridges have been made absolutely fireproof. Fire escapes have been built on both sides of the breaker. A tunnel has been driven from Dunmore No. 4 vein connecting with Dunmore No. 2 vein as an additional outlet from both veins and traveling way. Two 6-inch bore holes have been sunk from the Surface to the Clark vein 430 feet deep for slushing culm into the old workings. One new No. 10 Knowles pump has been installed at the No. 2 Dunmore vein to help take care of the extra water caused by slushing.

Nay Aug Drift.—Ventilation good. Drainage and safety conditions fair.

Nay Aug No. 3 Drift.—Ventilation good. Drainage and safety conditions fair.

CARNEY AND BROWN COAL COMPANY

Carney and Brown Colliery:

Carney and Brown Slope.—Ventilation, drainage and safety conditions fair.

NO. 6 COAL COMPANY

No. 6 Colliery:

No. 6 Slope.—Ventilation and drainage good. Safety conditions fair.

IMPROVEMENTS

PENNSYLVANIA COAL COMPANY

Pennsylvania No. 1 Colliery.—Extensive repairs are being made to the breaker to make it more efficient.

A hospital on the surface has been provided.

In the Clark vein slope electric haulage has been substituted for mules.

Hospitals have been built in both the Marcy and Clark slopes. Electricity has been introduced into the workings at No. 2 shaft, the motor being placed in the 3rd Dunmore vein. Also installed a hoist and substation. In the 2nd Dunmore vein an electric hoist has been installed to haul the coal to the dip. An electric motor barn of fire-proof construction has been built in the 3rd Dunmore vein.

Pennsylvania **No. 5 Colliery**.—1,000 feet of pipe line have been laid and a pump installed outside to pump the slush from the breaker into the old abandoned workings.

A hospital on the surface has been provided.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond Colliery.—Installed a new 18 by 16 foot ventilating fan. A new steel tower has been built over Tripp shaft and a rock plane driven from Rock to Diamond vein.

Installed one 7-ton electric locomotive, a rock crusher, boiler feed pumps, and four flat slate-pickers.

A second opening has been driven between No. 3 and No. 2 Dunmore veins.

A new steam line has been laid between boiler plant and shaft.

A surface hospital and a new wash house are being provided.

SCRANTON COAL COMPANY

Pine Brook Colliery.—A rock plane 7 by 14 feet was driven from No. 2 Dunmore vein to No. 1 Dunmore vein, a distance of 375 feet. This was done to shorten the haulage and to develop No. 1 Dunmore vein.

A second opening, 80 feet long, was driven through the strata between No. 2 and No. 1 Dunmore veins at an angle of 45 degrees. This

CARNEY AND BROWN COAL COMPANY

Carney and Brown Colliery:

Carney and Brown Slope.—Ventilation, drainage and safety conditions, fair.

NO. 6 COAL COMPANY

No. 6 Colliery:

No. 6 Slope.—Ventilation and drainage good. Safety conditions, fair.

IMPROVEMENTS

PENNSYLVANIA COAL COMPANY

Pennsylvania No. 1 Colliery.—A rock tunnel 5 by 7 feet and 250 feet long, was driven from the First Dunmore vein, No. 1 shaft, to the First Dunmore vein, through faulty ground, for the purpose of ventilation.

No. 5 Colliery.—Brick building erected, 41 by 150 feet, to take care of outside stock. A new and more modern pump room was finished in Third Dunmore vein near foot of shaft.

A rock tunnel about 500 feet long and 7 by 10 feet in cross-section was driven from the Third Dunmore vein through an upthrow in the Bunker Hill section.

Underwood Colliery.—This colliery was placed in operation April 28. The work of construction has been going on during the year. The boiler plant, power plant, engine house and other necessary buildings are about completed.

SCRANTON COAL COMPANY

Pine Brook Colliery.—Installed 300 Maxim water tube boiler.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond Colliery.—Built new washhouse and sub-station. Installed one 7-ton electric locomotive with reel, etc.

PRICE-PANCOAST COAL COMPANY

Pancoast Colliery.—A tunnel 600 feet long was driven from No. 3 to No. 2 vein.

NAY AUG COAL COMPANY

Nay Aug Colliery.—Built new washhouse. Also built addition to mule barn outside. Installed Hayes derailer above breaker as a safety precaution. A First Aid team was trained in the Y. M. C. A. and Bureau of Mines car.

SPENCER COAL COMPANY

Spencer Colliery.—Installed electric hoist in No. 1 shaft, 100 H. P. motor to replace steam hoist. Installed four 30 H. P. motors in mines, and new rotary pump for washery. Concreted 40 feet of No. 1 shaft from No. 1 to No. 2 Dunmore vein. Built 100 feet of new trestle and new scraper line at breaker.

CARNEY AND BROWN COAL COMPANY

Carney and Brown Colliery.—A second opening driven from Marcy vein to surface, a distance of 150 feet. A new hoisting tower was erected.

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NO. 6 COAL COMPANY

No. 6 Colliery: No. 6 Slope.—Ventilation and drainage, good. Safety conditions, fair.

No. 6 Drift.—Ventilation and safety conditions, fair. Drainage good.

IMPROVEMENTS

PENNSYLVANIA COAL COMPANY

Underwood Colliery.—A rock slope 7 feet by 12 feet and 500 feet long, was driven from the Clark vein to the New County vein for development purposes. A wash-house for employes was built on the outside 30 feet in width and 110 feet long. A storehouse, 30 feet by 80 feet of steel and galvanized iron, was constructed. Approach to the slope from the outside to the first Dunmore vein was concreted. Much grading and finishing was done on the outside.

Pennsylvania No. 5 Colliery.—A brick building, 40 feet by 170 feet, was erected on the outside to replace the old mule barn. This building accommodates mules, outside teams and wagons. On the inside a rock tunnel was driven from the second to the third Dunmore vein in the Bunker Hill section.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond Colliery.—Installed engine and fan for boiler plant. Painted three sides of breaker. The dust system in breaker is being improved. Installed conveyor line, pit, etc., for handling Cayuga coal. Also installed one 7-ton locomotive with reel, etc., two shortwall coal-cutting machines, and one longwall coal-cutting machine.

PRICE-PANCOAST COAL COMPANY

Pancoast Colliery.—Built new fire room and installed 6 new water tube Maxim boilers.

SPENCER COAL COMPANY

Spencer Colliery.—Installed 2 sets of double-deck shakers in the breaker. No. 2 shaft was retimbered, and new ropes were placed in Nos. 1 and 2 shafts.

PENNSYLVANIA COAL COMPANY

Pennsylvania **No. 5 Colliery.**—Completed a rock tunnel 7 feet by 14 feet by 150 feet from the Third to the Second Dunmore vein, on a grade of one-half of one per cent. The roads were regraded to meet the growing demands for more men and coal. Installed a sub-station in Bunker Hill section with 120 K. W. motor generator set.

Outside: The grounds are fitted up and made very presentable. The hospital has been newly refitted.

The officials of this colliery are to be highly commended for the very presentable and safe condition both inside and outside of the mines.