

Remarks.—They have furnished a map of the mines; they have a second opening for each vein located about 1,000 feet from main opening; they have a house for men to wash and change their clothes in; they have an opening to the surface where men and mules can travel in and out at all times; there are no boys working in the mines under twelve years of age; the engineers seem to be experienced, competent and sober men; the mining boss seems to be an experienced and competent man; the parties having charge know their duty in case of death or serious accident; the shaft landings are protected by safety-gates.

CONTINENTAL COLLIERY.

This colliery is located in Lackawanna township, and lying one and one-fourth miles north-west of the Lackawanna river, in Keiser valley. The shaft is 112 feet to the Diamond or E, 242 feet to the K or Rock, and 292 feet deep to the Clark vein; the opening is 10 feet by 21 feet. It is operated by the Delaware, Lackawanna and Western railroad company. William Dorne is mining boss, and James F. Green is outside foreman.

Description.—There is a double breaker attached to the shaft tower; they mine and prepare 470 tons of coal per day; they employ 67 miners, 67 laborers, 23 drivers, 11 door-boys and 20 company men in the mine; 46 slate pickers, 8 head and plate men, 2 drivers, 20 company men, 10 mechanics and 2 bosses outside; in all 276 men and boys; they have opened from the Clark to the G vein by a rock tunnel 850 feet long; they are working the Clark vein of coal; average thickness 7 feet; they are just opening in the G vein; they work headings 12, air-ways 18 and chambers 30 feet wide; they leave pillars from 5 to 7 yards wide to sustain the roof; they leave cross entrances about 20 yards apart for the purpose of ventilation; the roof is good slate; the mine is in a good working condition.

Ventilation.—The ventilation is produced by means of a fan, which is located north of main shaft; the intake is located at the mouth of shaft; it contains an area of 100 feet; the upcast is at fan air-shaft, area 100 feet; the amount of pure fresh air is 34,740 cubic feet per minute; there is no noxious or poisonous gas evolved in these mines; the main doors are hung so as they will close of their own accord; they have attendants at main doors; they have double doors on the main traveled roads, and an extra door in case that any of the others should get broken; the air is circulated to the face of the workings in two splits; the amount of ventilation has been measured and reported according to law; ventilation is good.

Machinery.—They use one pair of hoisting engines of 120-horse power, one pumping engine of 95-horse power and one breaker engine of 40-horse power, all in shaft engine room; one steam pump foot of shaft of 80-horse power, and one fan engine in the fan engine house of 60-horse power; they have a metal speaking tube in the mine; they have two safety carriages with all the modern improvements; they have flanges of sufficient strength and dimensions for safety, and an adequate brake on their hoisting drum; they use stranded wire ropes with clevis and cone attachment; the boilers have been cleaned and examined and reported in good condition; they use a safety-valve to indicate the pressure of steam.

Remarks.—They have furnished a map of mine; they have an opening to daylight where men and mules travel in and out; they have no house for men to wash and change their clothes in; 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 engineers seem to be experienced, competent and sober men; the parties having charge know their duty in case of death or serious accident; the shaft landings are protected by safety-gates; the breaker machinery is fenced and boxed off so that operatives are safe.

HAMPTON COLLIERY.

This colliery is located in Lackawanna township, and lying one mile north-west of the Lackawanna river; it is 125 feet deep to the Diamond vein; it is 16 feet by 9 feet; it is operated by the Delaware, Lackawanna and Western railroad company. Thomas Carson is mining boss, and Jas. F. Green is outside foreman.

each lift. A building thirty feet wide by ninety feet long is to contain the blacksmith, carpenter, and machine shops, and a 9×12 engine will run the shops.

The above, of course, is only a rough outline of this new enterprise, which, before the close of another year, will be fully developed, and will be in full operation.

STORR'S SHAFT.—The Delaware, Lackawanna and Western Railroad Company having broken ground for a shaft at Dickson borough, which is to be ten by forty feet, and about three hundred feet deep to the Big or "G" vein. The company has a large territory to be developed here, which will require other shafts in the near future. The reason given by B. Hughes, Esq., for the large size of the shaft, is an excellent one, and it is recommended to the consideration of others who contemplates sinking. He says: "The reason of its being so long is, I want more area for our upcast. We find, generally, more friction in the upcast alone than in all the workings of the mine"

This company have also extended the **Continental** shaft and its air-shaft to the Clark vein, a distance of sixty-three feet below the Big or "G" vein. In sinking, another vein was penetrated, but it is not large enough to be workable at this point, but at other points it is workable. The Clark vein here is eleven feet thick, eight feet being clean coal of an excellent quality, better than any of the veins above it that have been developed at this shaft.

Prosecutions for Violation of Law.

There were but two cases prosecuted for violations of law in my district during the year, and both cases were pending at the close of 1870. As I have always stated, this is the most unpleasant duty that devolves upon an inspector, and one that I would be glad to shirk, if I were not bound by a solemn oath to perform it. These cases were very effecting ones, for one of the parties was an unfortunate old gentleman, who has been fearfully burned by an explosion of gas, though that misfortune overtook him through his own heedlessness, to use the mildest term possible. He held the important position of mining boss in the No. 6 shaft, Jenkins township, under the Pennsylvania Coal Company. The charges entered against him were for neglecting to "provide that all doors used in assisting, or in any way affecting the ventilation of the mine, were so hung and adjusted as that they would close of their own accord, and could not stand open," and for neglecting to provide an attendant at a door. Because of this neglect a certain door was left open, and remained open through the night of October 29, 1879, whereby a large quantity of gas accumulated in a heading that the door was put to turn the air into, which was found by the fire boss on making his rounds the next morning. Considerable excitement was caused at the time by finding of the gas there, and because of the door being left open, and search was made for the person who left the door open, and the guilt(?) was attached to a young man named Timothy Ford, who was laboring in one of the cross-headings. Ford was suspended from work as a pun-

twenty-inch cylinder, two hundred horse power, one fan engine, eighteen by thirty inch cylinder, eighty horse power to run a twenty-foot fan. There is also a brick engine-house here, with six boilers in place, for burning culm. They are building two breakers at this colliery, with a capacity of one thousand tons per day each. There are a number of men engaged here sinking the shafts and building the breakers. When this colliery is completed it will be one of the best equipped and most substantial in this mining district.

The Lackawanna Coal Company's New Shaft.

This is a new shaft which they are sinking. At present the shaft opening is ten by thirty-four feet, and is down fifty feet from the surface. It is located in Blakely borough on the north-west side of the Lackawanna river, on property leased by the company from Stevens, Hull, and others.

They are working a large force of men sinking the shaft and building all the necessary appendages for a first class colliery.

Jones, Simpson & Co.'s New Shaft.

This shaft is located in Archibald borough, on a tract of land leased by the company, of C. B. Hackley, Esquire. It is about one and one half miles west from the Lackawanna river. It will be connected with their present breaker by railroad track eleven thousand two hundred feet long, the coal to be hauled by locomotive power to the breaker from the shaft. The shaft opening is ten by thirty-four feet. It is sunk about seventy-five feet. The probable depth of the shaft to Archibald seam of coal is one hundred and twenty-five feet.

Belmont Colliery.

This is a new colliery, and consists of three drifts, in Carbondale. Bottom seam of coal, and a new breaker, with a capacity of preparing about four hundred tons of coal per day. It is located in the upper end of Carbondale city, and about fifteen hundred feet east of the Lackawanna river. It is owned and operated by the Butler Coal Company.

The Pennsylvania Coal Company.

This company have made considerable improvements during the year, but their officers have made no detailed statements of the same.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY.

Pyne Shaft.

The company have graded a new gravity plane in this colliery to let the coal down on the West mountain side of shaft.

Continental Shaft.

Re-sunk from G or big seam to the Clark, now operating both seams of coal.

Hampton Shaft.

Sinking a new slope from Diamond seam to F or Rock seam so as to

other points of shipment are Jermyn No. 4, at Price, and the Lackawanna, at Olyphant, both mines having now been in operation a little more than one year.

JOHN JERMYN, *General Manager.*

SCRANTON, PA., *March 19, 1884.*

P. BLEWITT, Esq.,

DEAR SIR: Our improvements for 1883 are as follows: Cayuga plane from G to Diamond is finished, and working about twenty places in the Diamond vein. Brisbin has the third plane, that I alluded to last year, completed on the west mountain side. We are also sinking a new shaft, (near Tripp slope, called Tripp shaft,) 10'×35' proposed to reach the Clark vein. Hyde Park shaft in F vein have driven a dip heading about one thousand feet; intend to put an engine there to hoist the coal up, then let it down the gravity plane to foot of shaft G vein. Continental shaft—we have a gravity plane in progress a thousand feet long, which we intend to get in operation early this year. We have partly sunk a shaft in Bellevue, under the tower of breaker, where the slope and shaft coal are hoisted to top of breaker, so as to hoist the coal direct from Clark vein to top of breaker at once, making the old shaft the pumping-way and place to put down all the supplies, &c.

• Respectfully yours,

B. HUGHES.

PATRICK BLEWITT, Esq.,

Mine Inspector, Scranton, Pa.

DEAR SIR: Referring to our conversation in regard to Pancoast shaft, we commenced sinking shaft 10×34 feet in May last. At a depth of thirty feet we cut two feet five inches in coal. Below this, at a depth of ninety-nine feet, we cut the rock vein, nine feet and four inches thick. Coal good. Below this thirty feet, we cut two feet seven inches in coal—very good—and forty-three feet five inches more, the rock vein seven feet, very nice clean coal, making the shaft from top of brace two hundred and twenty-four feet deep. We have erected a tower-engine and fan-house, with machinery complete, all first class, furnished by the Dickson Manufacturing Company; also a new machine, carpenter, and blacksmith-shop, which is furnished with machinery and tools of the latest pattern. The second opening shaft, located two hundred and ten feet from main shaft, 10½×14 feet, was commenced the 14th day of January and is now down one hundred and twenty-three feet, and we expect to reach the Diamond vein next week. We are now building another wing to the breaker, which we expect to have finished by the 15th of April, which will give us a capacity of twenty thousand tons per month or more.

Very truly yours,

C. M. SANDERSON,
President.

The following were recommended to receive mine foreman's certificates:

David Jenkins, Scranton.
William W. Baird, Dunmore.
John M. Dobbie, Pittston.
Evan H. Evans, Scranton.
Thomas McWilliam, Moosic.
Thomas F. Cook, Pittston.
M. I. Garvey, Pittston.
John T. Brown, Avoca.
William Watkins, Scranton.
I. A. Garvey, Pittston.
Dd. F. Davies, Scranton.

The following were recommended to receive assistant foreman's certificates:

Thomas Parry, Scranton.
William McDowell, Scranton.
James Tibbs, Rendham.
Ed. R. Hughes, Scranton.
John R. James, Scranton.
Samuel C. Evans, Taylor.
Benjamin J. Rees, Rendham.
John W. Jenkins, Scranton.

Mine Improvements During 1896.

The improvements made in this district during the past year, such as new openings, shafts, planes, tunnels, slopes, boilers, etc., are the following:

The Delaware, Lackawanna and Western Railroad Company.

Bellevue Shaft. A tunnel 7 x 12 feet was driven from the Clark vein to the New County vein, a distance of 911 feet, on a grade of two and one-half inches on ten feet.

Continental Shaft. A plane was driven on a grade of 11 degrees. Sectional area, 9 x 16 feet; length, 328 feet.

Dodge Shaft. A tunnel was driven and completed; sectional area, 72 square feet; length, 300 feet.

Diamond Mine. A tunnel was driven from the "seven foot" seam to "Church vein," 300 feet long and 84 feet sectional area. A new drift was also driven on a level having 60 feet sectional area; length, 900 feet.

ELLIOTT, McCLURE AND COMPANY

Sibley Colliery.—By enlarging the second opening the ventilation of this colliery has been improved, but it is not yet up to the requirements. The drainage could also be improved. The officials in charge are making every effort to improve the conditions.

WM. CONNELL AND COMPANY.

National Shaft.—General condition fair.

Meadow Brook Tunnel.—Ventilation and drainage fair.

AUSTIN COAL COMPANY

Austin tunnel.—General condition fair.

GIBBONS COAL COMPANY

Gibbons Mine.—General conditions fair. The principal work done at this mine is the taking out of pillars at out-crop.

IMPROVEMENTS

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Continental Colliery.—One Rock slope located about 600 feet north east of shaft, from Clark to Dunmore No. 3 vein, 7x12 feet length, 375 feet on a pitch of 15 degrees. They are now opening Dunmore No. 2 vein east and west of slope.

Archbald Colliery.—One Rock plane tunnel located about 1,800 feet west of shaft from New County to Big vein, 7x14 feet, length 275 feet; pitch 8 degrees. Connection is being made with east section of Big vein.

A new 8x6x24 ventilating fan of the Guibal type; size of engine 18x30 inches, steel casting, brick engine house with sheet-iron and concrete roof, concrete foundation, and fan-drift connected to the up-cast shaft, absolutely fire-proof. This fan was completed and connected to the mines September 1, 1904, and gives satisfactory results. A test was made in fan-drift a few days later to ascertain the amount of ventilation produced. Record, 236,500 cubic feet of air per minute. Speed of fan 65 revolutions, water gauge 1½ inch, this being on an average of 90,000 cubic feet more air than produced by the old ventilating fan.

A new 1,250 horse power B. & W. water tube boiler and brick-house are now nearly completed. Located about 250 feet west of breaker. This will do away with the old cylinder boilers.

Pyne Colliery.—A second opening rock tunnel was driven from the New County vein to the Big vein, size 7 feet x 12 feet, length 200 feet, pitch 18 degrees. Installed one 200 K. W. electric rotary converter for mine haulage purposes. Installed and working two 6½ ton motors without reels, and five 6½ ton motors with reels. Installed new water fire lines for protection outside to breaker and out-buildings. Installed 2½ batteries or 10 boilers of the Babcock and Wilcox water tube type, 1515 horse power. Brick building, boilers brick lined, iron trusses for roof, and equipped with Parson's steam blower. Cylinder boilers and old boiler house removed. Hoisting engines were remodeled and removed further away from breaker onto a new foundation and in a new brick building.

Archbald Colliery.—Installed two batteries or 8 boilers of the Babcock and Wilcox water tube type, 1212 horse power. Brick buildings, boilers brick lined, iron trusses for roof, and equipped with Parson's steam blower. Old cylinder boilers removed and old boiler house torn down and removed. Installed fire lines and plugs on the outside for fire protection. Rock tunnel driven from Rock to Diamond vein, size 7 feet x 12 feet, and 75 feet long. Rock plane tunnel from New County vein to Big vein, size 7 feet x 14 feet, length 220 feet.

Continental Colliery.—Second opening rock tunnel driven from Dunmore No. 2 vein to Clark vein, size 7 feet x 12 feet, length 125 feet.

Sloan and Central Collieries.—Second opening rock tunnel driven from Clark vein to New County vein, 7 feet x 12 feet, length 150 feet. Also to do away with hoisting coal at the Central main shaft to the surface, and hauling over with steam locomotive to Sloan breaker; the coal is now transported by electric motor from Central to Sloan under ground, in the Clark vein. Six additional reel motors were installed at this mine during the year.

Dodge Colliery.—A new brick hoisting engine house, size 36x36; and a new pair of direct acting engines, size 22 inches x 36 inches. A new washery annex, size 24 feet x 60 feet for small sizes, capacity 400 tons per day.

Taylor Colliery.—Installed 4 new tubular boilers, 150 horse power each, also brick boiler house for the same, size 53 feet x 41 feet. Installed pair of breaker engines 12x30 inches in a new brick building 36 feet away from breaker. Rock tunnel driven from New County vein to Clark vein, size 7x14x184 feet, also new air shaft for ventilation from New County vein to Clark vein to ventilate above tunnel, size 8x10x23 feet.

LEHIGH VALLEY COAL COMPANY

William A. Colliery.—A new boiler plant consisting of seven batteries, with 2100 horse power was completed. A steam line was extended from this plant to the Lawrence and Bablyon mines, and the steam for the three collieries is now furnished from this plant. New cribbing was placed in the main shaft. One pair of 12x22 inch hoisting engines was placed in the Clark vein to replace the old pair which was too small for the work. One 1000 and one 600 gallon pump was placed in the Red Ash vein for silting.

Lawrence Colliery.—A William's crusher was installed to dispose of refuse from breaker, which is run in the mine.

Hyde Park Colliery.—Ventilation and drainage good, except a portion of the New County slope where the ventilation can be improved.

Dodge Colliery.—Ventilation and drainage fair.

Holden Colliery.—General condition as to safety good.

Taylor Colliery.—Ventilation and drainage are good in the Clark and New County veins, but poor in the Big and Rock veins.

Bellevue Colliery.—General condition as to safety good.

National Colliery.—Ventilation fair, drainage good.

PEOPLE'S COAL COMPANY

Oxford Colliery.—Ventilation good, drainage fair.

DELAWARE AND HUDSON COMPANY

Greenwood No. 1.—General condition good.

Greenwood No. 2.—Ventilation good, drainage fair.

SCRANTON COAL COMPANY

Capouse Colliery.—General condition as to safety good.

IMPROVEMENTS

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pyne Colliery—Completed July 9 the installation of an 18 x 10 x 12 inch underwriters' fire pump, capacity 1,000 gallons per minute and equal to 4 1-8 nozzle streams. Fire proof brick building for pump and hose cart. Also fire alarm signals installed in breaker. Erected a new Mine Hospital in a more convenient place inside.

Archbald Colliery.—One rock plane tunnel from New County vein to Big vein, west of shaft about 3,000 feet, 7 feet x 14 feet, pitch 10 degrees, length 280 feet. One rock plane tunnel from New County vein to Big vein, 2,000 feet southwest of shaft, 7 feet x 14 feet, pitch 10 degrees, length 315 feet. One rock tunnel from Rock vein to Diamond vein, 1,800 feet south of shaft, 7 feet x 14 feet, pitch 10 degrees, length 510 feet. One rock plane tunnel about 3,000 feet west of shaft, from Rock vein to Diamond vein, for second opening, 7 feet x 12 feet, pitch 10 degrees, length 230 feet.

Continental Colliery.—One rock plane tunnel from Rock vein to Diamond vein, 7 feet x 14 feet, pitch 10 degrees, length 200 feet.

Hyde Park Colliery.—A new washery annex was completed and put in operation April 23; capacity 600 tons per day. Installed in breaker 3 tandem 5-foot slate pickers. Took out the wood floor in breaker engine room and replaced it with concrete. Removed the old boilers and boiler-house on account of being too close to the breaker. This has improved the condition of this colliery very materially. In September the wood cribbing in the main shaft and the central air shaft was taken out and replaced with concrete and expanded metal. One rock plane tunnel from Rock vein to Diamond vein, 7 feet x 14 feet, pitch 10 degrees, length 200 feet. One rock tunnel from No. 2 Dunmore vein to Clark vein for return air and second opening, 7 feet x 12 feet, pitch 20 degrees, length 250 feet.

Hampton Colliery.—Idle since October 20 for extensive repairs on breaker. When completed the breaker will be almost entirely equipped with new machinery which includes 12 of the latest improved 5 foot tandem slate pickers. The wood cribbing in the shaft was taken out and replaced with concrete and expanded metal. A new fire proof mine Hospital and Foreman's office were also completed inside.

Sloan Colliery.—One rock tunnel was driven from the New County vein to the Big vein for return air.

Central Mines.—A new 8x6x24 foot diameter fan with steel casing on concrete foundation has been installed at this mine to replace the old 14 foot diameter belt-driven ventilating fan. Also a fire proof brick building for engine room. Class and size of engine: Corless Tandem, high pressure cylinder 14x36 inches; low pressure cylinder 22x36 inches, 84 horse-power. The engine is connected direct to the fan. The fan was connected to the mine May 26.

Central Boiler Plant.—Installed a modern 6,000 horse-power open Cochrane water heater and a new fire proof brick building for water feed pumps, store room and Foreman's office.

Electrical Machinery Installed

Pyne Colliery.—One 10 ton electric motor on west gangway Clark vein. One 1,000 gallon electric centrifugal pump at foot of slope in Clark vein; induction motor, alternating current 400 volts. One 450 gallon electric centrifugal pump in west side dip; induction motor; alternating current 400 volts. Power is taken to these pumps from the surface through bore holes.

Archbald Colliery.—One 6½ ton electric motor in the Big vein.

Continental Colliery.—One 100 horse-power electric motor hoist on Dunmore slope; induction motor; alternating current 400 volts.

Hyde Park Colliery.—One 100 horse-power electric hoist on Dunmore slope; induction motor; alternating current 400 volts.

Sloan Colliery.—One 5½ ton electric motor in surface vein.

Central Water Shaft.—Installed during the year at the foot of the shaft in the Clark vein, an 800 horse-power six-stage electric centrifugal pump. Capacity 5,000 gallons per minute; alternating current; 3 phase; 2,100 volts. Column pipe 16 inch diameter. Lift 480 feet. This pump was put in operation the latter part of December, and to date is apparently working satisfactory. This pump is used in connection with the automatic bucket water hoist that was installed and commenced operation in August 1905.

Bellevue Colliery.—Grading and cutting rock at foot of Main shaft No. 2 Dunmore vein to improve the foot. Installed electric hoist in No. 2 Dunmore vein to operate No. 2 slope. Installed electric motor on V gangway Clark vein. Installed electric motor in New County vein. Rock cut in New County vein to take Big vein coal to New County vein. Tore down old boiler house. Installed new middle rolls in breaker. New water line reservoir to pump house. Erected new brick office for foremen, also new brick pump room. Erected a new brick oil house.

Dodge Colliery.—Installed 3 electric motors, one in Diamond vein, and two in New County vein. Tore down old boiler house.

CONDITION OF COLLIERIES AND IMPROVEMENTS

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Archbald.—A new washery annex was completed and put into service on September 13, capacity 600 tons per day.

Hyde Park.—One rock tunnel 6 x 12, length 125 feet, from Rock vein to Diamond vein, to be used as a second opening.

One 10 x 18 shaft, east of the breaker, sunk to the Surface vein a depth of 80 feet, to be used as a second opening and air shaft. This shaft has been completed, but the ventilating fan has not yet been installed.

One 12 x 12 air shaft, to be sunk to the Dunmore veins, has been sunk to a depth of 35 feet, and is now in progress of sinking. This shaft will be equipped with an 8 x 24 Guibal fan with a steel casing.

Hampton.—One rock tunnel 7 x 12, length 159 feet, from Rock to Diamond vein, to redeem bottom coal in Diamond.

Sloan.—One rock tunnel 7x12 feet and 90 feet in length, from surface to Surface vein, to be used as a second opening.

One rock slope from the Clark vein to the No. 3 Dunmore vein, 7x12, and 475 feet in length, pitch 15 degrees.

One shaft 12x32 and 185 feet in depth, from the Clark vein to the No. 4 Dunmore vein, located about 700 feet east of Central main shaft. This shaft was completed during the year, and operations commenced in the Dunmore vein.

Central Boiler Plant.—The work of installing six new Maxim boilers, with a total of 3,500 horse power, is now in progress and nearly completed.

Dodge.—Main shaft sunk from Big vein to Dunmore vein and also general improvements made in breaker.

Electrical Machinery Installed

Pyne.—One 300 K. W. rotary converter, and an addition to the sub-station building to house the same, one 6½ ton electric locomotive in Clark vein, one 6½ ton electric locomotive in Big vein.

Archbald.—Two 6½ ton electric locomotives to operate on Rist and Rossars gangways in Big vein.

Continental.—One 300 K. W. rotary converter located on top of the Dunmore vein slope, one 6½ ton electric locomotive to operate in the Dunmore vein.

Hyde Park.—One 300 K. W. rotary converter with addition to sub-station to house the same. One 300 K. W. rotary converter taken away from this colliery and installed at the Central Water shaft for Sloan New County vein.

Three 6½ ton electric locomotives to operate in the New County and Dunmore veins. One Jeffrey rock crusher and foundation, to crush all rock and bone coming from the breaker in order to flush the same into the mines.

Hampton.—Three 6½ ton electric locomotives in the Diamond and Rock veins.

One rock slope from the No. 2 to the No. 3 Dunmore vein, 7 x 12, to a depth of 193 feet.

One 4 x 4 x 14 ventilating fan on the surface vein, driven by a 10 H. P. electric motor, was installed; one 50 H. P. electric motor to drive the ventilating fan at the Central Air Shaft to replace the steam engine, and one 35 H. P. electric hoist to replace the steam hoist to operate the Central Air Shaft.

Hampton Colliery, Outside.—Installed one 750 gallon steam pump for fire protection.

Sloan Colliery.—Installed one 150 H. P. electric hoist on the rock slope sunk from the Clark vein to No. 2 Dunmore vein.

Continental Colliery.—One rock tunnel, 7 x 12, in length 218 feet, from the Clark to the New County vein on the pitch, for the purpose of shortening the haulage.

The main shaft and the air shaft were concreted, replacing the old wood cribbing.

Bellevue Colliery.—New concrete barn in slope. Rock tunnel from New County to Big vein, and a second opening to the same tunnel. Rock tunnel from No. 2 to No. 1 Dunmore vein, and a second opening to the same tunnel.

Built new concrete blacksmith and carpenter shop, outside.

Dodge Colliery.—Concrete partition in main shaft.

Holden Colliery.—Installed electric hoist on plane to Surface vein.

National Colliery.—Installed dust fan in breaker. New brick blacksmith and carpenter shop, concrete barn built, inside. New fire pump and fire line installed. Outside.

DELAWARE AND HUDSON COMPANY

Greenwood Colliery.—Drift opened from outside to Checker vein. Haulage road built from breaker to head of plane, outside, distance 1,000 feet. A plane 400 feet in length, equipped with 10 x 12 engines, was built to hoist coal from mouth of drift to the Surface railroad.

CONDITION OF COLLIERIES

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Archbald.—Ventilation, drainage and condition as to safety, good.
Continental.—Ventilation, drainage and condition as to safety, good.

Hyde Park.—Ventilation, drainage and condition as to safety, good.

Hampton.—Ventilation, drainage and condition as to safety, good.

Sloan.—Ventilation in Sloan Surface vein is only fair. A new air-shaft is being sunk to improve this condition. Otherwise, the ventilation, drainage and condition as to safety are good.

Bellevue.—Ventilation, drainage and condition as to safety, good.

Dodge.—Ventilation, drainage and condition as to safety, good.

Holden.—Ventilation, drainage and condition as to safety, good.

National.—Ventilation, drainage and condition as to safety, good.

HUDSON COAL COMPANY

Greenwood.—The ventilation where fans are in use is good. In the openings where natural causes are depended upon the quantity is a variable one, but sufficient to maintain a healthy condition. Drainage fair; condition as to safety, good.

SCRANTON COAL COMPANY

Capouse.—Ventilation, drainage and condition as to safety, good.

PEOPLES COAL COMPANY

Oxford.—Ventilation and drainage fair; condition as to safety, good.

MINOOKA COAL COMPANY

Minooka.—Ventilation, drainage and condition as to safety, good.

CARLETON COAL COMPANY

National.—Ventilation, drainage and condition as to safety, good.

IMPROVEMENTS

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Archbald Colliery.—All the inside buildings reconstructed of incombustible material.

Continental Colliery.—The 12'x4'x4' ventilating fan was replaced by a new 24'x8'x6' fan, which was put into operation March 20. All the inside buildings reconstructed of incombustible material.

Hyde Park Colliery.—A 7'x12' tunnel, 220 feet long, was driven from the Rock to the Diamond vein. All the inside buildings reconstructed of incombustible material.

Hampton Colliery.—All the buildings reconstructed of incombustible material.

Hyde Park Colliery.—A 7 by 12 foot tunnel, 220 feet long was driven from the Rock to the Diamond vein. All the inside buildings reconstructed of incombustible material. An automatic overwinding device was attached to the hoisting engines.

National Colliery.—An air shaft was sunk from the surface to the Clark vein, a depth of 75 feet. This shaft is 10 by 16 feet in the clear. A rock tunnel was driven on a 45 degree pitch from M. gangway, Clark vein to B. gangway, Clark vein, 7 feet by 12 feet, a distance of 60 feet for ventilating purposes. Installed railings around all dangerous parts of machinery and openings in the breaker and around all engines and machinery outside. Installed a Welch automatic overwind device or engine stop on hoisting engines. Completed new concrete wash-house, which is properly ventilated, and there is a person in charge to see that it is kept clean.

Dodge Colliery.—New locomotive house outside. Installed additional electric locomotive, 750-gallon fire-pump, and a Welch automatic overwind device or engine stop on hoisting engine. New concrete mule barn inside. New concrete wash-house completed; it is properly ventilated and there is a person in charge to see that it is kept clean. Started work on a new haulage system on the outside to safely convey the cars from the drift to the head of the breaker, which is now being done by an engine. This will be completed in a short time. Installed railings around all dangerous parts of machinery and openings in and around the breaker.

Holden Colliery.—Installed railings around all dangerous parts of machinery in and around the breaker. A Welch automatic overwind device or engine stop was installed on hoisting engines. Completed new concrete wash-house, which is properly ventilated, and there is a person in charge to see that it is kept clean.

Continental Colliery.—A second opening and return air course was driven from No. 1 Dunmore to Clark vein, a distance of 73 feet. An air shaft and second opening was also sunk near outcrop to Diamond vein, depth 30 feet. An automatic overwinding device was attached to hoisting engine.

Hampton Washery.—All the buildings were reconstructed of incombustible material.

This Company is educating its non-English speaking employes. Colonel R. A. Phillips, the General Manager, conceived the idea of having pictures taken in the mines showing how accidents occur and how they are prevented. Two hundred of these pictures appear in book form with simple statements. The book was prepared under the direction of Colonel Phillips and Mr. C. E. Tobey, Superintendent of the Coal Mining Department, and ten thousand copies have been printed and will be distributed to groups known as extension schools in the various mining communities.

This Company is promoting this educative work through the local branch of the Young Men's Christian Association, and it deserves much greater patronage than it is getting at present, as it instructs not only in theory, but also in practice.

SCRANTON COAL COMPANY

Capouse Colliery.—All inside buildings reconstructed of incombustible material.

Sloan Colliery.—Outside:—Installed an auxiliary line between Hampton and Sloan mines.

Archbald Colliery.—Completed a bore hole from surface to New County vein, and changing cable.

Installed one Goodman coal-cutting machine in the Diamond vein; also four 7-ton locomotives with reel devices, etc.

Outside:—Installed one rotary converter, transformer, switchboard; changing equipment in sub-station.

Continental Colliery.—Installed one 7-ton electric locomotive, with reel, etc., in Dunmore No. 3 vein, also one Goodman coal-cutting machine.

Outside:—Built a new washhouse.

National Colliery.—Installed one motor in Dunmore No. 1 vein and an endless rope at foot of shaft in No. 2 Dunmore vein.

Outside:—Built stairway, railings, etc., around boilers.

SCRANTON ANTHRACITE COAL COMPANY

Oak Hill Colliery.—Completed a new slope to the No. 2 Dunmore vein. Built an addition to the breaker.

SPRUKS COAL COMPANY

East Mountain Colliery.—Inside:—Installed an electric hoist.

Outside:—Installed one 12 HP. gasoline engine and built an engine house for same. Built a new office and scale house, mule barn, hospital with equipment, and track and trestle from breaker to Erie tracks, and a set of coal pockets for storing coal for delivery.

Sunk an air shaft.

CONDITION OF COLLIERIES

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Bellevue, Dodge, Archbald, **Continental**, Sloan and National Collieries.—Ventilation, drainage and condition as to safety, good, except in a few places where conditions should be improved.

HUDSON COAL COMPANY

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

SCRANTON ANTHRACITE COAL COMPANY

Oak Hill Colliery.—Ventilation and drainage, good. Condition as to safety, fair.

CARLETON COAL COMPANY

Carleton Colliery.—Ventilation and drainage, good. Safety conditions, fair.

SPRUKS COAL COMPANY

Spruks Colliery.—Ventilation and drainage, good. Safety conditions, fair.

JOHN GIBBONS COAL COMPANY

Gibbons Colliery.—Ventilation and safety conditions, fair. Drainage, good.

IMPROVEMENTS

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Bellevue Colliery.—Completed two rock tunnels from New County vein to Big vein, each 200 feet long, on a grade of 5 per cent. Erected a new engine and rotary house, of brick, with concrete roof.

Archbald Colliery.—Completed a rock plane from New County vein to Big vein.

Continental Colliery.—Completed a rock tunnel from Rock vein to Diamond vein.

Sloan Colliery.—Completed a rock tunnel from No. 2 Dunmore vein to No. 1 Dunmore vein, 500 feet in length.

Hampton Washery.—Installed two Simplex jigs.

HUDSON COAL COMPANY

Greenwood Colliery.—Installed a car pull at the coal tippie; a lump coal shaker in the breaker; also stationary hoist at No. 2 shaft to eliminate mule haul. A new addition was built to the office building. Completed a connection from No. 1 shaft to No. 2 shaft for water, which eliminates the danger of No. 2 shaft being flooded in case of high water.