

veins; the shaft opening is 10 by 36 feet; the Delaware, Lackawanna and Western railroad company are sinking it, under the supervision of Benjamin Hughes, general mine superintendent; they employ about 18 sinkers, 6 head and plate men, 2 company men and 6 mechanics; in all 32 men.

#### CAYUGA COLLIERY.

This shaft is located in the city of Scranton, and lying one-half of a mile north-west of the Lackawanna river; it is 368 feet to the G or 14-foot vein; shaft opening is 32½ feet long and 10 feet wide; it is operated by the Delaware, Lackawanna and Western railroad company. William R. Storrs is general coal agent, E. R. Walter is general outside superintendent, B. Hughes is general inside foreman, Thomas Watkins is mining boss and J. C. Bowman is outside foreman.

*Description.*—They have a breaker connected with this mine, attached to shaft tower; they mine, ship and prepare about 450 tons of coal per day; they employ 52 miners, 52 laborers, 19 drivers, 3 door-boys and 14 company men in the mine; 49 slate pickers, 9 head and plate men, 2 drivers, 18 company men, 8 mechanics and 2 bosses outside; in all 228 men and boys; they are working the G or Big vein, average thickness 9 feet; they work headings 12, air-ways 15 and chambers 27 feet wide; they leave pillars from 6 to 7 yards wide to sustain the roof; they leave cross-entrances 20 yards apart for the purpose of ventilation; the roof is slate; the mine is in a good working condition.

*Ventilation.*—The ventilation is produced by means of a fan adjoining the main opening; the intake is located at the main opening, area 230 feet; the upcast is located in one side of main shaft, area 90 feet; the average supply of fresh air per minute is 18,900 cubic feet; they have a little noxious, inflammable and poisonous gases evolved in the mine; the main doors on headings and air-ways are hung so that they will close of their own accord, so as to assist ventilation, and they have attendants to keep them closed, so as to keep up a steady current of air; they have double doors on main travelled roads, and an extra door in case of accident; the air is circulated to the face of the working places in 2 splits; they work 50 men in one split, and 54 in the other; the amount of ventilation has been measured and reported according to law; ventilation is good.

*Machinery.*—They use 1 pair of hoisting engines, 120-horse power; 1 breaker engine, 60-horse power, in shaft engine house; 1 fan engine, 60-horse power, in fan engine house; 1 donkey engine at bottom of shaft, 25-horse power, and 1 fire pump, 20-horse power, in a brick building about 100 feet from boiler rooms; they have a metal speaking tube in shaft; they have 2 hoisting carriages in shaft, with all the modern improvements; they have flanges of sufficient dimensions on the hoisting drums; they have an adequate brake on hoisting drum; they use clevis, cones and standard ropes, in good condition; the boilers, feed pipes and water gauge cocks are in good condition; they have a steam gauge and safety valves for safety and to indicate the pressure of steam per square inch.

*Remarks.*—They have furnished a map of mine; they have a second opening about 1,200 feet from main opening; they have a 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 12 years of age; they do not allow more than 10 men to ride on a loaded carriage or cage at one time in the shaft; the persons having charge know their duty in case of death or serious accident; the breaker machinery is boxed and fenced off so that operatives are safe; the shaft landings are protected by safety gates.

#### VON STORCH COLLIERY.

This colliery is located in Scranton city, and situated on the west bank of the Lackawanna river; it is operated by the Delaware and Hudson canal company—E. W. Neston, general superintendent; J. M. Chittenden, general outside breaker superintendent; Andrew Nicol, general mine superintendent; J. C. Simpson and A. B. Nicol, assistant mine superintendents. The above named gentlemen have charge of all the collieries operated by the Delaware and Hudson canal company

in this mining district. Richard D Roberts and John Aubry, are mining bosses, and Charles Ziegler, is outside foreman.

*Description.*—The opening to the coal consists of a shaft and slope; the shaft is 350 feet deep to the Fourteen Feet vein, and 550 feet deep to the Clark vein; the slope is 1,300 feet long to the G or Big vein, and driven at an angle of — degrees; there is a breaker connected with these mines, situated about 500 feet from mouth of slope; they mine and prepare about 650 tons of coal per day; they employ 92 miners, 78 laborers, 42 drivers, 16 door-boys and 55 company men in the mine; 82 slate pickers, 11 head and plate men, 3 drivers, 26 company men, 8 mechanics and 3 bosses outside—in all 416 men and boys; they are working the Fourteen Feet, Diamond and Clark veins of coal; average thickness of the Fourteen Feet 8 feet; Diamond 5½ feet, and of the Clark vein 9 feet; they work headings in Fourteen Feet vein 10, air-ways 14 and chambers 30; in the Diamond vein they work headings and air-ways 14, and chambers 30; and in the Clark vein they work headings 10, air-ways 14, and chambers 30 feet wide; they leave pillars in the Fourteen Feet and Clark veins about 18 feet, and in the Diamond about 15 feet wide, to sustain the roof; they leave cross entrances in each vein 50 feet apart, for the purpose of ventilation; the roof in the Fourteen Feet and Clark veins is slate, and in the Diamond vein it is fire-clay; the mines are in a good working condition.

*Ventilation* is produced by means of a large fan—this is a suction fan, and is 21 feet in diameter by 5 feet face; the in-take is located at mouth of slope, area 190 feet; the up-cast is located in main shaft, area 100 feet; the amount of pure air in the Fourteen Feet is 21,500, and in the Diamond 19,100 cubic feet per minute; there is standing water in the dip workings of each vein; the main doors are hung so as to close of their own accord; they have attendants at main doors; the air is circulated to the face of the workings systematically by the aid of check-doors; the amount of ventilation has been measured and reported good.

*Machinery.*—They use one breaker engine of 62-horse power, two hoisting engines of 123-horse power, one hoisting engine used to hoist on the plane outside, 25-horse power, and one steam pump 105-horse power; they have a metal speaking tube in the mines; have two safety carriages, with all the modern improvements; have an adequate brake, and flanges of sufficient strength and dimensions for safety, attached to their hoisting drums; the ropes, links, chains and connections are in good condition; the boilers had been cleaned and examined, and reported in good condition; have a steam gauge to indicate the pressure of steam; the breaker machinery is boxed and fenced off, so that operatives are safe.

*Remarks.*—They have furnished maps of mines; they have second openings; they have no house for men to wash or change in. Mr. Roberts is a competent and practical man, and Mr. Aubry seems to be a practical and competent man. There are no boys working in the mines under 12 years of age; the engineers seem to be experienced, competent and sober men, and do not allow any persons to ride on loaded carriages in the mines, or more than ten persons to ride on the safety carriage at one time: the parties having charge know their duty in case of death or serious accident; the fan is run at the rate of 48 revolutions per minute; it does not give as good results as Legett's Creek fan, on account of the friction, &c: the roof in both veins requires to be well timbered, as it is very bad where faults and rolls come in, and they have to drive the chambers narrow at these places; the shaft landings are protected by safety gates; the mines operated by the Delaware and Hudson canal company will compare favorably with any other mines in Pennsylvania for uniformity and system; they have established a code of mine regulations which they carry out successfully, which prevent a great many deaths and accidents.

*Ventilation* of a majority of mines in this mining district, and their mode of conducting the air currents to the face of the workings, is systematical; there are some of the mines, operated by this company, connected with old mines that have been worked for years, and it is almost impossible to ventilate them systematically. Alexander Simpson, Esq., is master mechanic of the mining department of this company, and has charge of machinery, &c.; he is a gentleman of ability, and he lives up to the requirements of the law.

**Green Ridge Slope Colliery.**

The old breaker has been torn down and a new addition has been built to the breaker, which was erected six years ago, thereby doubling its capacity. Also a new plane was built from mouth of slope to breaker. Also put in a new pair of hoisting engines, rated at one hundred and twenty-five horse-power. Also improved the fan so as to increase its capacity twenty-five per cent.

**Lucas New Shaft.**

This shaft is located on property owned by William Von Storch, Esquire, at Green Ridge, city of Scranton, and on the line of the Delaware and Hudson Canal Company's railroad. The shaft opening is ten by thirty feet. It is down about sixty feet; twenty-five feet in gravel and thirty-five feet in rock. The breaker walls are all completed, also the boiler-house for two nests of boilers, three in each nest. The boilers are forty feet long by thirty-four inches in diameter. They are using one pair of hoisting engines, ten by ten inch cylinders, sixty horse-power. There are thirty sinkers employed, and twenty carpenters framing timbers for breaker. The capacity of the breaker will be about one hundred and eighty thousand tons of coal per annum.

**Pancost Coal Company's Colliery.**

This is a new colliery, located on three hundred and fifty acres of land on the east side of the Lackawanna river, in the borough of Dickson City. Work was commenced on the 20th day of last June. Since that time, a slope has been driven seven hundred and fifty feet in the big vein or seam of coal which is fifteen feet thick. The slope opening is seven by fourteen feet. Seven hundred feet east of the slope a shaft has been sunk seventy feet deep to the Clark seam of coal. The shaft opening is ten by twenty-two feet. In connection with these openings, and connected with them by three thousand feet of railroad track, a new breaker has been erected with a capacity of from seven hundred to eight hundred tons of coal per day. The coal is taken from the slope and shaft by a locomotive, twelve tons weight, on a three-foot gauge track.

**MACHINERY.**—At the head of the slope a hoisting engine, seventeen by forty-two inch cylinder, has been put up; also five boilers thirty-four feet long by forty inches in diameter. There is also an engine at the shaft and one at the breaker. All the necessary buildings are erected. They are now shipping about two hundred and fifty tons of coal per day.

**Throop Shaft Colliery.**

This is a new colliery, which will be operated by two shafts, one for hoisting coal, and the other for the use of the men and supplies; they are sinking both at present. These shafts are located in Priceville, on the north-west side of the Lackawanna river, on lands leased by John Jermyn, Esquire. The lease was made on November 20, 1881. The tract contains

gressing slowly. It is not developed enough at present to give it an extended notice here. It will be fully reported next year.

**DELAWARE AND HUDSON CANAL COMPANY.**

**No. 3 Jermyn's Shaft, Green Ridge.**

This colliery is operated by the Delaware and Hudson Canal Company and the Delaware, Lackawanna and Western Railroad Company, in partnership. They are now grading a slope in coal inside, which will be eight hundred feet long, when completed, on the northwest side of the shaft, also a new gravitation plane, four hundred feet long, on the east side of the shaft.

**Von Storch Slope.**

They are erecting another ventilating fan at this colliery in addition to the fan which they have there at present. The new fan is seventeen feet diameter by four feet face. This is to ventilate the fourteen feet and Diamond seams of coal. The old fan, which is twenty feet diameter by five feet face, will be used exclusively for the Clark seam of coal. They have just finished a slope, six hundred feet long, in coal in the Clark seam, on the southeast side of shaft.

**Legitt's Creek Shaft.**

They have re-opened the Diamond seam of coal, which has been idle for four years. They are now ready for operation.

**Marvine Shaft.**

They are now building a gravitation plane, six hundred feet long, in the fourteen feet seam of coal, on southeast side of shaft. Also sinking a slope in coal on northwest side of shaft, which will be about twelve hundred feet long when finished. They are also driving for second opening in Diamond seam, by connecting with Diamond seam in Legitt's Creek shaft. The connection is now made.

**Olyphant, No. 2.**

They have built a new breaker over second opening shaft of this colliery, and call it Eddy Creek breaker. They have cut and graded a new gravitation plane to bring coal to foot of shaft from the northwest side of the property.

**Grassy Island Shaft.**

They are sinking a new air shaft at this colliery. It is timbered down to the rock, a distance of twenty feet from the surface. The size of shaft opening is eleven by fourteen feet. They are now drilling a bore-hole in the air shaft to let the water down through to the mine workings. They expect to finish bore-hole in a few days. The contract for sinking shaft is already let. The intention is to put up two fans on the same shaft, seventeen feet diameter by four feet face, each. They are to be run by two

Have put up a 20-foot fan, by 5-foot face, run direct by two engines, one on each end of fan-shaft.

**Eddy Creek Shaft.**

New breaker all ready. Expect to start on February 15th. Have sunk a new slope in south dip 600 feet long to first basin.

**Marvine Shaft.**

Finished sinking slope on north dip. Finished second opening to Leggett's Creek in Diamond vein. Put three drill-holes down from Diamond vein to 14-foot to take water from small basin—saves one steam-pump.

**Leggett's Creek Shaft.**

Put new buntings and guides in hoisting shaft. Are now taking 100 cars per day of coal from the Diamond vein. Put three drill-holes down from Diamond to 14-foot vein, to take water from basin—saves two steam-pumps.

**Von Storch Mines.**

Have driven under the river from foot of slope in 14-foot vein, to open coal on south-east side of river. Are cutting up the north-west rise in Diamond vein to outcrop to get air-shaft for intake air; also put in new 17-foot fan.

Yours, etc.,

ANDREW NICOL,

*General Superintendent of Mines.*

*Per A. B. NICOL.*

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.

The monthly air reports are also received from the mine foremen before the 12th of the month for the preceding month. Reports of all accidents are promptly forwarded and the same may be said of the reports of boiler inspections.

Article XIV, section 1, reads in part: "Notices of deaths or serious injuries resulting from accidents in or about mines or collieries shall be made in writing to the Inspector of mines," etc.

Many of the non-fatal accidents described in table V are such as cannot be considered serious and therefore should not have been reported.

Table A shows that there are 16,578 persons employed in and about the mines of the district in various capacities, including mine foremen and outside foremen. It is not surprising that some of these employes should be found in the act of risking their lives by practices which cannot be justified by law or circumstances. Some miners have been found in the act of preparing powder with their lighted lamps on their caps. Some of the mine foremen could add to their own usefulness by cultivating a better system and exercising greater discipline in the discharge of their duties. By calling attention to a few who are lacking in judgment it is not intended that the remarks concerning the careless miner and indifferent foreman should apply but to a limited number.

Copies of the mine Inspector's reports, if liberally distributed, would tend to show the underground worker the conditions under which accidents have occurred in the past, thus directing his attention and observation.

#### Mining Operations Discontinued.

During the year mining operations have been discontinued at one shaft only in this district, namely the Delaware and Hudson Canal Company's **Von Storch shaft**. At this shaft the "Clark" vein was being worked, but owing to danger threatening from a squeeze it was mutually agreed between the mine Inspector and the company's officials that it was unsafe to continue the operations.

On June 12, 1897, I visited the mine to examine a squeeze on part of McDonough's road. Its effects were visible for a distance extending some 300 feet, but no imminent danger was anticipated from the indications surrounding it at the time. So it was decided that a careful and experienced man be delegated to watch it while it was being secured by timbering and to give the alarm in case of serious indications appearing.

On August 20, 1897, I revisited the squeeze in response to a report, and found that it had made considerable progress since June 12. It was plain to be seen at this time, that the trouble originated in old workings to the right, and also that timbering was not successful in arresting it. Owing, therefore, to the more serious indications

Von Storch

now visible, coupled with the fact that McDonough's road was used for hauling purposes and therefore a number of men and boys were constantly passing, it was decided to suggest to the company's officials that work along the road be discontinued, owing to the dangers already described. The officials took immediate steps to act on the suggestion. Their prompt action under the circumstances is worthy of commendation.

The remaining coal will be worked from the same company's adjoining colliery, the Leggitts Creek, in the First inspection district, and prepared for market at the breaker.

The Von Storch shaft will in the future as in the past, be used as the second opening to the Von Storch slope workings, and as a pumping station.

#### Lawrence Breaker.

During the latter part of 1897 the Connell Coal Company discontinued operating its Lawrence breaker. The mining operations will be continued as in the past, with some material changes in the transportation, and preparation of the coal. Instead of hoisting the coal mined in the Lawrence colliery to the breaker of the same name, it will in future be run through to the same company's "William A." colliery and then hoisted to and prepared at that breaker. The coal mined in the Lawrence drifts will be lowered through the Lawrence shaft and handled and prepared in the manner already described.

#### Bull's Head Colliery.

During the year 1897 one operation only has been re-started, namely the Bull's Head colliery, in the Second ward, Scranton city. The Rock vein is being worked in this mine. The company is also engaged in opening a small surface vein from a higher level on the slope. Some years ago this mine was owned and operated by the Providence Coal Company. The colliery does not promise to become very extensive.

#### Improvements During 1897.

The improvements for the year 1897 are such as the description given in some of the reports already printed would apply. They consist principally of various connections made either by sinking shafts of small depths from one vein to another, or tunnel or plane connections for the purpose of ventilation, or the development of parts of properties. In short, the improvements may be described as such as become necessary from year to year in order to keep up the out-



each, rated horse power of which is 120 each. Two heading roads have already been wired for a distance of 7,700 feet with contemplated extensions of about 1,600 feet more in the near future. A plane is also being driven from the Big vein to the Diamond vein on a grade of thirteen degrees, the length of which will be 475 feet. There is also in process of construction a boiler plant, consisting of four 250 horse power Sterling boilers to take the place of a number of old cylinder boilers.

**Brisbin.**—A second opening tunnel has been driven from the Big vein to the Rock vein on a pitch of 40 degrees, length 70 inches, size 7x10 inches.

**Diamond.**—There is in course of erection a washery, capacity 1,000 tons per day to wash coal from the Diamond dump, the culm to be deposited in the mine by means of a 6-inch bore hole. It will be completed for operation by March 1, 1900.

#### The Delaware and Hudson Company.

**Dickson Mine.**—The Delaware and Hudson Company has sunk a shaft at the Dickson to a depth of 305 feet, and 50 feet more will reach their Clark vein workings. On this shaft a ventilating fan 20 feet diameter by 5 feet face, will be erected to ventilate the Clark vein workings. The two fans now in use will ventilate the Dunmore veins. Two thousand feet of road has been graded for an engine plane. The bore hole for the rope is down, and the engine to be used is already in position. The South East plane in the No. 4 Dunmore vein has been extended 700 feet during the year.

**Von Storch Mine.**—At the Von Storch mine a plane has been driven from the four "foot" vein to the five "foot" vein; its dimensions are as follows: 14 feet by 7 by 445 feet on a grade of 1 in 5, for the purpose of developing the latter named vein.

In the Fourteen "Foot," or Big vein, preparations are being made to install a rope haulage. The Clark and Big veins are connected by a rock tunnel. The new haulage system will take all the coal from the Clark vein pitch workings to the "foot" of the main slope. This system will be about 7,500 feet long. The engines are now in position.

#### Green Ridge Coal Company.

**Green Ridge Slope.**—A rock plane 10 feet by 6 feet, on a grade of 12 degrees, has been driven, connecting Nos. 1 and 2 Dunmore veins. An air shaft, 9 feet diameter, has been sunk from Middle Dunmore to the Bottom vein. The shaft will be used for ventilation and as an additional escape way for the men.

An electric hoist has been installed on the dip workings of the

## 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. D. AND F. M. SPENCER

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

## CARNEY AND BROWN

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

## J. J. GIBBONS

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

## BULL'S HEAD COAL COMPANY

Bull's Head.—Ventilation, roads and drainage good. Condition as to safety good.

## NAY AUG COAL COMPANY

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

## MOUNTAIN LAKE COAL COMPANY

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

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 IMPROVEMENTS

## DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

New breaker at the Diamond was built and was in operation for a few days the latter part of year. Abandoned Tripp Slope and concentrated all of the work at Tripp Shaft. Built an addition to the boiler plant at the Manville mine.

## DELAWARE AND HUDSON COMPANY

Legitts Creek.—Rock Plane driven from 5 foot vein to surface for second opening. Installation of 16 inch x 48 inch compound Duplex Jeansville pump in Clark vein. Lining of 20 inch water hole necessitated by settling of the strata through which hole was bored. Securing the roadways and sump in Clark vein, by substituting I beams in place of timber which had broken down.

Dickson.—Engine plane in Clark vein extended.

Von Storch.—6 inch hole driven from 14 foot vein to Clark vein for drainage.

## PRICE-PANCOAST COAL COMPANY

Pancoast.—The tail rope system has been extended 1,000 feet into the workings of the Dunmore vein.

A new slope 400 feet long has been driven in the Dunmore vein, and at the present time a tunnel is in course of construction.

Another slope has been driven over the anticlinal in the Diamond vein and a pair of 12 inch x 12 inch hoisting engines installed.

## CONDITION OF COLLIERIES

## DELAWARE AND HUDSON COMPANY

Eddy Creek and Marvine Collieries.—Ventilation, roads, drainage and condition as to safety, good.

Von Storch and Legitts Collieries.—Ventilation, roads and drainage, fair. Condition as to safety, good.

## DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Storrs and Brisbin Collieries.—Ventilation, roads, drainage and condition as to safety, good.

Cayuga Colliery.—Ventilation and condition as to safety, good. Roads and drainage, fair.

## SCRANTON COAL COMPANY

Johnson and Richmond No. 3 Collieries.—Ventilation, roads, drainage and condition as to safety, good.

West Ridge Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

## BULLS HEAD COAL COMPANY

Church Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

## CLEARVIEW COAL COMPANY

Conklin Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

## IMPROVEMENTS

## DELAWARE AND HUDSON COMPANY

Eddy Creek Colliery.—Completed the rock slope through the fault and started tunnel through Smoketown, Diamond vein. Installed a Goodman mining machine in the Dunmore vein. Drove rock slope to Rock and 14 foot veins in Birdseye drift.

Marvine Colliery.—The mouth of No. 1 rock slope was concreted. Rock vein was opened from No. 1 slope and also from No. 9 rock plane.

Von Storch Colliery.—A rock plane 400 feet long was driven from the Clark to the New County vein.

## DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Storrs Colliery.—Built a fireproof machine shop. A bore hole was made for suspending a cable at No. 3 shaft. Built a new washery. A tunnel was driven from top to bottom split of 14 foot vein, at No. 2 shaft. New transmission line from Hampton power plant. One shortwall coal-cutting machine was installed.

## CONDITION OF COLLIERIES

## DELAWARE AND HUDSON COMPANY

Eddy Creek and Marvine Collieries.—Ventilation, roads, drainage and condition as to safety, good.

Dickson, Von Storch and Legitts Creek Collieries.—Ventilation, roads and drainage, fair. Condition as to safety, good.

## DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond and Cayuga Collieries.—Ventilation, roads, drainage and condition as to safety, good.

## BULLS HEAD COAL COMPANY

Bulls Head Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

## CLEARVIEW COAL COMPANY

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

## SCRANTON COAL COMPANY

West Ridge Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

## IMPROVEMENTS

## DELAWARE AND HUDSON COMPANY

Eddy Creek Colliery.—Completed tunnel, 300 feet long, through fault in Diamond bed; tunnel, 285 feet long, from Clark to New County vein; tunnel, 110 feet long, from Fourteen Foot bed to Rider; tunnel, 230 feet long, from Four Foot to Twenty Inch bed; and rock plane, 185 feet long, through fault in Fourteen Foot bed, Birdseye, and rock plane, 65 feet from Four Foot to Twenty Inch bed.

Legitts Creek Colliery.—The New County vein was opened in No. 3 shaft. Completed a tunnel, 450 feet long, driven through the fault in the Rock bed, and a rock plane, 160 feet long, from Rock to Diamond vein.

Dickson and Von Storch Collieries.—At Dickson mine a rock plane was driven 150 feet, from No. 2 Dunmore to connect with the Clark vein.

In the Von Storch section, a rock plane, 140 feet long, was driven from Top Rock to Diamond vein, and an air shaft 40 feet deep was sunk from Top Rock to Rock vein.

## DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond Colliery.—Installed a new ventilating fan.

Cayuga Colliery.—Installed a new simplex jig; one new Hazleton jig; one new conveyor line and one 50 HP motor.

## CONDITION OF COLLIERIES

### DELAWARE AND HUDSON COMPANY

Eddy Creek, Dickson, Von Storch, Legitts Creek and Marvine Collieries.—Ventilation, drainage and condition as to safety, good.

### DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond and Cayuga Collieries.—Ventilation, drainage and condition as to safety, good.

### MID CITY COAL COMPANY

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

### SCRANTON COAL COMPANY

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

## IMPROVEMENTS

### DELAWARE AND HUDSON COMPANY

Eddy Creek Colliery.—Completed a rock tunnel 96 feet long, from Rock to Rock vein, as a second opening. Renewed timber in Olyphant shaft between hoisting and air shaft, also placed new timber at foot of branch at Rock landing.

Dickson Colliery.—Completed rock plane 410 feet long, from Dunmore No. 2 to Clark vein; also Rock plane 175 feet long, from Dunmore No. 2 to Clark bed, to be used as an air return. Installed rope haulage in Dunmore No. 3 bed for a distance of 5000 feet.

**Von Storch Colliery.**—Completed rock plane 90 feet long, Top Rock to Diamond vein, also a plane 50 feet long, to be used as an air return. A rock tunnel was driven from Rock top split to bottom split bed, a distance of 120 feet. A plane 60 feet long to be used as an air return was driven from the Rock bottom split to the top split of the Rock bed.

Legitts Creek Colliery.—Completed a shaft, 2nd opening, 30 feet deep, from the surface to the eight foot bed; rock plane 575 feet long, from Dunmore No. 3 bed to Dunmore No. 2 bed. Installed a rope haulage in Rock bed for a distance of 4600 feet; electric haulage in Rock bed to Von Storch, a distance of 4200 feet.

Marvine Colliery.—Completed a rock plane from Diamond to Rock bed, a distance of 80 feet; another plane from the 14 Foot Top split to Diamond bed, a distance of 98 feet; also one from Dunmore No. 3 bed to Dunmore No. 2 vein.

### DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond Colliery.—In No. 2 Shaft a haulage road has been constructed in the New County vein, together with a new arrangement at the bottom of the shaft to save hauling the New County vein coal to the Clark vein. Completed an emergency hospital in the New County vein. Installed one 7-ton electric locomotive.

In drift No. 1 a 7-ton electric locomotive was installed.