

*New York and Scranton Coal Company.*

Sunk the Sturges shaft from Clark vein to Dunmore vein, a distance of 86 feet. Sectional area 319 square feet. An air shaft was also sunk from the surface to the Dunmore vein, a distance of 180 feet. Size 11'×12'.

*Delaware, Lackawanna and Western Railroad Company.*

At Storrs No. 1 a new inside slope was sunk a distance of 550 feet on a grade of 13½ inches in ten feet; sectional area 66 square feet. A tunnel was also driven from the Diamond seam to the upper split of "G" vein; length, 484 feet; area, 72 feet.

At Storrs No. 3 a new slope, which is not yet completed, has been sunk a distance of 1,327 feet on a grade of 4 degrees. A new plane, 200 feet long, on a grade of 2" in 10', has also been made.

*Blue Ridge Coal Company.*

A new air shaft was sunk by the company a distance of 67 feet; sectional area, 120 square feet. This also served the purpose of a second opening.

*Sterrick Creek Coal Company.*

This company has sunk its No. 1 shaft from the Grassy Island vein to the Clark vein, a distance of 169 feet, and has increased its size from 10'×22' to 12'×28'.

The breaker has been changed over and enlarged to meet the requirements of hoisting by shaft instead of by plane as heretofore. A new Guibal fan, 14"×54", run by belts by a 14"×25" engine, has already been erected.

A new boiler house has been erected, and 9 new steel boilers, 40"×34", have been placed in position.

The annual examination of persons desiring to qualify for assistant mine foremen was held in this district at Olyphant on April 9.

The examiners were Edward Roderick, mine Inspector, H. P. Patton, superintendent, James E. Morrison and Vaughan Richards, miners. The following are the names of those who were recommended to receive certificates of qualification:

John H. Bexon, . . . . .	Scranton.
John M. Killaway, . . . . .	Scranton.
Joseph Duacle, . . . . .	Scranton.
John Reese, . . . . .	Scranton.
T. E. Hodgson, . . . . .	Scranton.
Robert S. Proudlock, . . . . .	Scranton.
William Jenkins, . . . . .	Scranton.
James Eckersly, . . . . .	Scranton.
Thomas H. Powell, . . . . .	Scranton.

## Pennsylvania Coal Company.

At Gypsy Grove a new shaft to be used as a second opening was sunk from the surface to the third Dunmore vein a distance of 60 feet; area of shaft, 80 square feet.

## Murray Coal Company.

Completed the slope begun in 1892, total length of which is 2,500 feet, with an area of 117 square feet; angle  $3\frac{3}{4}$  degrees.

## Pancoast Coal Company.

Sunk their hoisting shaft to within a few feet of the Clark vein, making a total depth of 428 feet; size of shaft is 10x34 feet.

They also sunk their man shaft to the bottom split of "G" vein, and intend to continue sinking it until the Clark vein is reached.

## Delaware, Lackawanna and Western Railroad Company.

At Storrs, No. 2, a tunnel from the big vein to the Diamond is being driven; length, 444 feet; area, 72 square feet.

At Storrs, No. 3, a new slope 1,450 feet long, having an area of 98 square feet and an angle of 4 degrees was completed and put in operation.

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Jones, Simpson & Co. sunk a new air shaft 40 feet deep; area, 100 square feet, which made a much needed improvement in the condition of the ventilation in the drift workings.

A new slope was also sunk by this company a distance of 550 feet on a grade of 8 degrees, with an area of 104 square feet.

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The **Sterrick Creek** Coal Company completed two new planes; length, respectively, 175 and 280 feet, each on a grade of  $8\frac{1}{2}$  degrees.

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New York and Scranton Coal Company sunk a new air shaft a distance of 250 feet, with an area of 120 square feet.

A new tunnel was also driven by this company from the surface to the Dunmore vein, a distance of 1,000 feet.

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The Elk Hill Coal and Iron Company, at Richmond, completed their new plant begun in 1892, including a new breaker, a shaft and slope.

of new hoisting engines, 22x30, have been erected, and 1½-inch ropes, with heavy shieves, placed in shaft. Two new carriages with pneumatic fans have also been placed in the shaft. A road has been graded and built from No. 1 shaft, in Grassy Island vein, a distance of 5,500 feet, to reach certain numbers of pillars from this vein.

At Edgerton, a road 5,250 feet long has been graded and built from what is known as the Edgerton drift to the coal upon the Pierce Coal Co. property. A tunnel is now being driven to reach coal in what is known as the Russell tract, and two planes are now being built to reach this coal.

At Lackawanna colliery eight jigs of the Reading pattern have been placed in the breaker.

#### Hillside Coal and Iron Company's Improvements.

A washery at Clifford breaker has been erected to wash fresh-mined culm, all sizes above birdseye having been taken out. It was started about May 1. The capacity is 300 tons a day.

Forced draft plant with Sturtevant blower, 7x4 feet, to increase the capacity of the Clifford boilers. The blower is capable of furnishing blast for 900 horse-power.

Savory's plane, on the Ontario tract, Clifford mine, 1,500 feet long, 7x14 feet in area, has been finished.

No. 6 plane, on the Ontario tract, Clifford mine, 600 feet long, 7x14 feet, in area.

One hundred horse-power electric hoist, west plane, No. 2 shaft, Forest City. This plane is 1,800 feet long. The hoist has a capacity of 500 loaded cars per day. There are four headings and two lifts. The hoist pulls the loaded cars out of the headings and draws up the empty cars.

A tunnel in No. 2 shaft, Forest City, from the upper split of the shaft vein to the lower split, 750 feet long, 7x10 feet in area. This tunnel is two-thirds completed.

A curved self-acting plane at Glenwood breaker. The plane is 990 feet long, 780 feet of which is in the Archbald seam, and 120 feet on the curve carrying the plane into the rock in an easterly direction toward the small seam above the Archbald, which was reached at a distance of 90 feet after the curve was made. The plane was projected in this way because of the pitch of the two seams. The curve has a radius of 50 feet, and the cars pass around it without difficulty, and I see no reason why it cannot be operated as easily as the ordinary straight line self-acting plane. It is 7x16 feet.

#### Remarks on Accidents.

A few brief notes on fatal accidents, made from actual observations by visiting, for the purpose of investigation, the scene of each one,

At Clinton colliery a new tail rope system of haulage has been introduced 2,500 feet long, which hauls cars from eight different stations and replaces at least eight mules and drivers.

A new slope has been sunk in Clifford or lower vein, and an air shaft 200 feet deep has been sunk.

#### Delaware, Lackawanna and Western Railroad Company.

At Storrs No. 2 a rock tunnel through "fault," in Big Vein, has been driven. It is  $6\frac{1}{2}$ x10 feet, and 435 feet long.

#### Elk Hill Coal and Iron Company.

At Richmond No. 3, main shaft has been sunk to Dunmore No. 3 vein, a distance of fifty feet. The air shaft has been enlarged and a fan erected at head of it, with very good results.

#### Pancoast Coal Company.

The main shaft is being sunk to lower veins and is now down about 121 feet. Commenced sinking about the middle of June.

Also, drove slope in Clark vein, about 1,600 feet through "fault" to coal, and two rock planes through "fault."

#### The Temple Iron Company's Improvements.

During the year 1899 the following improvements have been made at the collieries north of Scranton:

At **Sterrick Creek** colliery there has been erected a 20-foot fan, with 16x26 engine, and an air shaft 12x12 sunk in order to properly ventilate the Dunmore vein. There has been erected a double culm plane 300 feet long and 100 feet high, with a pair of 100 horse-power engines. There has been built a  $22\frac{1}{4}$ x22x24 air compressor and 8,000 feet of 8x10-inch cast pipe laid from this air plant to the Dunmore vein workings, where there has been erected a pair of 100 horse-power engines to operate the slope in this vein, and with this air they are also doing the necessary pumping. A compressor house, 40x38, of brick has been built; also, a blacksmith and car shop, 30x60, with a 30x30 addition. A locomotive house, 20x40 has been built and there has been graded and built 5,880 feet of track and switches connecting the colliery with the Nay-Aug, D., L. & W. branch.

Two 225 horse-power Stirling boilers have been erected, with a boiler house 50x42. There have been placed in the breaker 24 jigs, 8 shakers and 8 screens, 2 sets of rolls, 2 sets elevators and 4 sets of conveyors, and an addition has been built to accommodate the machinery from the north and south sides of the breaker, 27x42. A pair

New Shaft.—Present depth 525 feet. Section of shaft 12x50 feet to be continued to Dunmore vein. Erection of new Guibal fan at this shaft 28x8 feet, driven by a pair of Corliss engines 18x36 inches each.

Eddy Creek.—Tunnel being driven from Rock vein to Big vein, section 7x12 feet, not completed. Four new openings located along East bank of the Lackawanna river, near Priceburg. One of these to open the Pierce vein, and three to open the Church vein. New air shaft commenced, circular in shape, 14 feet diameter. One centrifugal pump of 500 gallon capacity, driven by electric motor.

Three Gardiner electric drills for coal mining put in use.

No. 2 Olyphant.—Three locomotive type boilers of 250 horse power each installed. One 22 and 38x16x48 inch Jeansville Duplex pump, capacity 3,000 gallons per minute.

One 60 K. W. electric generator belted to a 13x12 inch Ball engine.

#### By the Sterrick Creek Coal Company

**Sterrick Creek.**—To improve the ventilation, a rock air-way was driven from the slope workings of the Dunmore vein up to the Clark vein, and two air shafts from the surface to the Clark vein were also completed. Several intake drifts from the surface to the Grassy vein have been abandoned, owing to their proximity to the Grassy Island Creek, and in their stead an air shaft, some distance away from the creek, has been sunk from the surface to said Grassy vein.

A new Jeansville pump has been placed in the Clark vein, near foot of No. 1 shaft, with a capacity of 2,000 gallons per minute.

A new Ingersoll-Sergeant Duplex air compressor, 20x24 inch steam cylinder, and compound air end 33 $\frac{1}{4}$  inches and 20 $\frac{1}{4}$ x24 inches was added to original air plant.

A new shaft 12x30 feet is sunk to a depth of 100 feet, to be continued until it reaches the Dunmore vein.

Three bore holes have been sunk from the surface, two to the Dunmore vein, and one to the Clark vein.

The present two inside hoisting engines, together with a large one, are to be placed on the surface, and ropes are to be run down the bore holes into the mine. This will enlarge the present capacity, eventually making this colliery one of the largest producers.

#### By the Pennsylvania Coal Company

Work has been commenced at both ends of a new tunnel to be driven from the Lackawanna river to No. 1 shaft, No. 1 colliery, for

Eddy Creek.—Erection of new Guibal fan 28x8 feet with new brick engine room. The shaft is being enlarged from 10x23 feet in section to 12x33 feet 4 inches. At "Birds Eye" a Guibal fan 8x3 feet has been erected, driven by electricity at a speed of 200 revolutions per minute.

Olyphant No. 2.—The 4-foot vein has been cut by two rock planes.

#### PENNSYLVANIA COAL COMPANY

Gipsy Grove, Outside.—New pair of 15x24 inch geared hoisting engines for shaft. Stable inside with capacity of 20 mules in second Dunmore vein. In third Dunmore vein a stable of same capacity was made.

No. 1 Colliery.—Work is progressing on installation of additional horse power Babcock and Wilcox boilers, which will increase the capacity to 1,200 horse power. A new 10-foot forced draft fan is being erected for the same; also, new Cochrane feed water heater and 12x8x12 inch duplex Scranton pump. A new water tank is being built with a capacity of 50,000 gallons. One alternating current generator 2,300 volts 7 5-10 amperes, speed 1,200 revolutions, belted to a 10x10 inch, 62 horse power McEwen engine. This furnishes power to run the drills and a 20 horse power induction motor, with 220 volts 50 amperes. The 20 horse power induction motor is located at the river end of the tunnel, about 7,500 feet from the generator and is used to run a 57 inch exhaust fan which supplies air to the tunnel. It is connected by belt to a 5 horse power dynamo which gives the direct current to the motors which run the drills. Also one Rand air compressor to furnish power to run air drills at No. 1 end of tunnel. New car and blacksmith shop 30x112 feet with 16x20 feet ell. New supply house 34x50 feet.

Water tunnel from Lackawanna river to No. 1 shaft has been driven in 1,200 feet during the year, and on the No. 1 end of the tunnel 500 feet. In the third Dunmore vein a new gravity plane has been made, section 6x15 feet and 800 feet in length. A new stable has been made in same vein with capacity of 30 mules; also new air bridge sectional area 60 feet and new 16x8½x14 inch Scranton pump.

No. 2 Shaft.—New locomotive boiler, outside. Work is progressing on new engine plant. When completed will be about 5,000 feet in length and will be operated by a pair of 15x24 inch geared hoisting engines, which are now on the foundation. New air course and traveling way have been made at No. 1 tunnel.

#### STERRICK CREEK COAL COMPANY

**Sterrick Creek.**—The new shaft 12x30 feet in section which was commenced to sink in 1903 has been completed. This shaft is sunk

to the Red Ash vein, a distance of 514 feet from the surface. A pair of 26x48 inch first motion hoisting engines has been erected to operate this shaft. An 800 horse power, water tube boiler plant, has been installed near this shaft. Also a new fan has been erected, Guibal pattern 8x25 feet to ventilate the Red Ash vein. Both the empty and loaded trestles at the breaker have been rebuilt. The breaker structure has been renewed and reinforced and breaker pockets practically rebuilt.

#### DOLPH COAL COMPANY, LIMITED

Extensive repairs and improvements in breaker enlarged the capacity and changed the method of handling the coal on the outside. A new chain hoist has been put in which elevates the empty cars sufficiently to run by gravity from the breaker to a point where they are then taken to the mine by an electric motor, which has also been installed. This dispenses with all mules formerly used for this purpose and is a decided improvement. The new air shaft to the Clark vein has been enlarged and timbered. One 300 horse power Babcock and Wilson water tube boiler has been added to the boiler plant.

#### PRICE-PANCOAST COAL COMPANY

The Pancoast colliery was totally destroyed by fire on the evening of March 11. It has been replaced by a much larger and more modern breaker, capacity 2,500 tons per day, with all the latest improved machinery for cleaning and preparing coal. The breaker is connected by a steel bridge 46 feet long to a steel tower built over the shaft, which is 160 feet in height. A concrete wall 3 feet in thickness has been put around the shaft to take the place of timber which was used as cribbing prior to the destruction of breaker. A new building has been erected that contains a carpenter shop 50 feet square, blacksmith shop 36 feet square, machine shop 80x36 feet with steel roof and concrete floor, making them almost absolutely fire-proof. A new wash house has been erected of brick material 20x14 feet with stationary tubs, hot and cold water for the convenience of employes. The breaker is lighted by 250 incandescent lights and 20 arc lights and heated throughout by steam. A new automatic water spray arrangement is being placed throughout the breaker as a protection against fire. A new Guibal fan 20 feet in diameter has been erected for the purpose of ventilating Nos. 1, 2 and 3 veins; also a 35 foot Guibal fan to ventilate the Clark and Dunmore veins.

In the Diamond vein the gravity plane has been extended 200 feet, and a new foot in shaft to replace old one in No. 3 vein.

No. 2 Shaft, Inside.—The new engine plane that was commenced in 1904, has been completed and is now in operation. A new air-bridge has been built on engine plane, sectional area, 120 square feet.

#### STERRICK CREEK COAL COMPANY

**Sterrick Creek.**—The Dunmore fan, which was located above the Clark vein water level, about 4,000 feet east of breaker, was removed to the Clark vein air shaft, a distance of 3,000 feet south westerly. The new location is 400 feet from the Dunmore haulage engines and the fan receives its steam from the pipe line which supplies these engines. The friction is reduced by this change, three thousand feet, and the efficiency of the fan increased.

A ten inch bore hole was driven from the surface to the Clark vein, depth 265 feet, and 2,000 feet of 6 inch wooden pipe laid to carry the culm from the breaker to the Clark vein workings. Eight new shaking screens were installed in the breaker with decks ranging from 18 to 24 feet in length, to take the place of eight 12 foot shakers, which were inadequate with the increased output.

Three balance planes above the water level in the Dunmore vein were changed to one plane, and a pair of 12x12 inch engines installed to operate the same.

#### DOLPH COAL COMPANY

Air shaft completed from the surface to the Clark vein. A new ventilating fan, 20 feet in diameter, erected at head of air shaft. Extensive improvements were made outside. Previous to 1905, no box cars could be run under the breakers, owing to their height. With the improvements made, this condition is changed. The new chain hoist at head of breaker works very satisfactorily, and with the electric motor which conveys the mine cars to and from the "chain hoist," a great many mules are dispensed with, and all trouble in this line eliminated.

#### MT. JESSUP COAL COMPANY

A new ventilating fan has been erected at the head of the "North pitch" air shaft to ventilate the Clark vein workings. The diameter of fan is 14 feet.

#### HILLSIDE COAL AND IRON COMPANY

Erie.—One new 900 H. P. Sterling type water tube boiler plant with Sturdevant cold air blast and exhaust steam boiler feed heater.

Two 12x6x12 inch duplex plunger pumps for boiler feed and fire protection in boiler plant. One new washery; capacity 800 tons per day. New steam plane 7x12 inch in area and 4,200 feet in length. The same is equipped with a pair of engines 16x20 inch cylinder.

Blue Ridge Tunnel.—Condition as to safety good, drainage and ventilation fair. They are robbing pillars.

Richmond No. 3 Colliery.—Condition as to safety good, drainage fair, ventilation good.

DELAWARE AND HUDSON COMPANY

Olyphant Colliery No. 2 Shaft.—Condition as to safety and drainage good, ventilation generally good.

Grassy Island Slope.—Condition as to safety and drainage good, ventilation good with the exception of the Four Foot vein. This vein is very difficult to ventilate as it is thin and the roof is continually falling in the air courses.

Grassy Island Shaft.—Condition as to safety and drainage good, ventilation fair. There is room for improvement.

Eddy Creek Colliery, Birds Eye Mines.—Condition as to safety, drainage and ventilation good.

No. 4 Drift.—Condition as to safety good, drainage and ventilation fair.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Storrs Colliery No. 1 Shaft.—Condition as to safety, drainage and ventilation good.

No. 2 Shaft.—Condition as to safety and drainage good, ventilation fair. There is room for improvement.

PENNSYLVANIA COAL COMPANY

No. 1 Colliery No. 1 Shaft.—Condition as to safety and drainage good, ventilation fair.

No. 2 Shaft.—Condition as to safety and drainage good, ventilation fair.

Gipsy Grove Colliery.—Condition as to safety, drainage and ventilation good. This mine has been very much improved.

STERRICK CREEK COAL COMPANY

**Sterrick Creek** Colliery.—Condition as to safety, drainage and ventilation good. Six air bridges were built during the year, which improved the ventilation.

LACKAWANNA COAL COMPANY

Lackawanna Colliery.—Condition as to safety, drainage and ventilation good.

DOLPH COAL COMPANY

Dolph Colliery, Hackley Slope.—Condition as to safety, drainage and ventilation good.

Hannah Bell.—Condition as to safety good, drainage and ventilation fair.

MOUNT JESSUP COAL COMPANY

Mount Jessup Colliery, Peck's Shaft.—Condition as to safety good, drainage fair, ventilation good.

No. 1 Shaft, Inside.—One 10-inch bore hole from surface to third Dunmore vein for steam line; this will do away with steam line in the shaft. Also one 3-inch bore hole to second Dunmore vein, both of which are to be used for rope haulage on slopes. New slope in second Dunmore vein 6 feet x 12 feet has been extended 450 feet.

No. 2 Shaft, Inside.—Engine plane in second Dunmore vein extended 400 feet.

Gipsy Grove, Inside.—One 10-inch bore hole from surface to third Dunmore vein, one 3-inch bore hole from surface to third Dunmore vein. One Dunmore pump 102 plunger, 30-inch stroke, to be used for the purpose of pumping water to supply No. 1 washery.

#### STERRICK CREEK COAL COMPANY

**Sterrick Creek** Colliery.—A steam boiler plant, consisting of four 250 horse power Maxim boilers, was erected to replace the two small plants, which consisted of one high and low pressure plant. The foundations of the new boiler house are of concrete and the building is constructed of gray brick, with iron roof trusses and corrugated iron roof. The boiler foundations are constructed of building stone, and the boiler settings of red brick.

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#### MINE FOREMEN'S EXAMINATIONS

The following persons having passed a satisfactory examination were granted certificates of qualification:

##### Mine Foremen

Frank Good, Scranton; William Lewis, Scranton; Thomas J. Moyle, Simpson; James Horan, Carbondale; George T. Williams, Peckville; Joseph J. Munley, Dickson City; Herbert Spencer, Carpenter, Scranton.

##### Assistant Mine Foremen

David D. Morgan, Peckville; Isaac Morgan, Scranton; Andrew H. Smith, Jr. Scranton; Edwin S. Jones, Scranton; Joseph A. McCabe, Blakely; Thomas D. Llewellyn, Peckville; James Stephens, Taylor; James H. James, Olyphant; George W. Morgan, Olyphant; Charles J. Latcham, Scranton; Edward R. Edwards, Olyphant; John Brooks, Olyphant.

## MOUNT JESSUP COAL COMPANY, LIMITED

Mount Jessup Colliery.—Built new breaker at Peck shaft, started July 21, 1910. Installed one new 416 horse power Maxim boiler at Peck shaft; not yet in use.

## MOOSIC MOUNTAIN COAL COMPANY

Marshwood Colliery.—Installed at shaft nest of two boilers, tubular 5 feet diameter, 14 feet long, each. Rated 100 horse power each. Carpenter and machine shop for general mine work erected at Marshwood. Reopened fan shaft; rebuilt fan house, and installed fan and engine at Marshwood.

## STERRICK CREEK COAL COMPANY

**Sterrck Creek** Colliery.—The Sterrick Creek breaker, which was destroyed by fire October 26, 1909, was rebuilt and began preparing coal November 7, 1910. The structure is 92 feet by 107 feet, and 123 feet 6 inches in height. The entire frame of the breaker is of structural steel and the outside covering is of heavy galvanized corrugated steel, carried by steel angle studding. Fenestra steel standard window sash was used, and the breaker is usually well lighted. The old breaker was built over No. 1 shaft, and the new breaker was erected seventy feet from the shaft, necessitating the relaying and regrading of all tracks, and also the removal of both light and loaded scales.

A brick engine house, 60 feet by 48 feet 6 inches, with steel roof, has been erected, containing one pair of 20 by 42 inch Putnam-Corliss engines, which drive the breaker, the transmission being by ten wraps of 1½-inch manilla rope drive, American system. This engine house also contains one pair of 22 by 30 inch geared engines for the shaft hoist; one pair of 10½ by 12 inch geared hoisting engines for the culm plane, and one 3 by 18 inch engine, with 1½-inch manilla rope drive to the head of the breaker, driving a rivetless chain conveyor, 282 feet centers, with flights 48 by 54 inch centers, which conveys the coal from a steam cross-over tip to the head of the breaker.

Adjoining this engine house and in course of erection is a brick and concrete fan house; containing a high speed fan, 10 feet by 3 feet, driven by a 14½ by 15 inch automatic engine.

A new steel head frame has been erected over the No. 1 shaft.

The breaker is equipped with a B. G. Carpenter and Company exhaust fan system for removing the dust.

The breaker has a capacity of 2,600 tons per day.

## 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, June 1 and 2. The Board of Examiners was composed of the following persons: L. M. Evans, Mine Inspector, Scranton; Frank G. Wolfe, Mining Engineer, Scranton; David R. Evans, Miner, Olyphant; William F. Malloy, Miner, Carbondale.

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