

Delaware and Hudson Canal Company.

By this company, Laurel Run Colliery, a rock tunnel was driven from the bottom split of the Baltimore to the Checker seam, a distance of 80 feet, with a sectional area of 12x6 feet, to be used for the transportation of coal.

Wyoming Valley Coal Company.

In the Forty-Fort shaft a rock slope, 8x14 feet was sunk from the 11-foot vein to the red ash, a distance of 525 feet, on a grade of 15 degrees. This slope opens up a large field of good coal for this company. A new Guibal fan, 20 feet in diameter, was placed on the air shaft to take the place of the one removed, it having been too small to give the ventilation required.

Keystone Coal Company.

A shaft 12x12 feet was sunk from the surface a distance of 375 feet to the red ash seam to be used for hoisting coal and ventilating the mine.

Raub Coal Company, Limited,

The Louise Colliery, owned and operated by this company, started in the month of September to prepare and ship coal to market. It is located northwest of the Mill Hollow Colliery in the borough of Luzerne. They have opened up the old drifts into the Ross and red ash seams, formerly operated by Thomas Waddell. A small breaker, having a capacity of 300 tons per day, was built to prepare the coal for market, and an air shaft was sunk from the Ross to the red ash seam, a distance of 45 feet, with a sectional area of 120 square feet, to ventilate the workings.

Hillside Coal and Iron Company.

This company has erected a new Guibal fan 14 feet in diameter at their new shaft to ventilate the workings, which exhausts 35,000 cubic feet of air while running 50 revolutions per minute.

Stevens Coal Company.

This company has sunk a new shaft 25x11 feet from the surface to the Pittston seam, a distance of 172 feet, to be used for hoisting coal. It is located south of the breaker, a distance of 500 yards from the slope opening, close to the borough of West Pittston. The coal from this shaft is taken by a small locomotive and hoisted up a plane to the breaker. The second opening was driven from the outcrop in the Checker seam down to the shaft level, a distance of 460 feet on a 4 degree pitch. A rock gravity plane has been started from the Pittston seam to be driven to the Checker above to complete the opening to the bottom. The distance to be driven will be 75 feet on a 20-de-

Improvements by the Forty Fort Coal Company.

Two new exhaust fans, 15 and 20 feet in diameter respectively were installed at the "Harry E" Colliery, replacing the old ones, which were inadequate to supply the ventilation required. The new fans exhaust 219,040 cubic feet of air per minute.

Improvements by the Hillside Coal and Iron Company.

A new air shaft has been sunk to a depth of 70 feet sectional area 10x10 feet, in the Consolidated Colliery, to be used for ventilation.

Improvement by the Westminster Coal Company.

A new fan 12 feet in diameter has been erected at this colliery to ventilate the underground slope workings. Engine 14x13-inch with a working speed of 60 revolutions.

Improvements by the Raub Coal Company, Limited.

A tunnel has been driven in the out crop of the Red Ash vein, a distance of 300 feet at the Louise colliery of this company, the coal from which is run down a gravity plane to the breaker. A new fan 12 feet in diameter has been installed on this tunnel which exhausts 60,000 cubic feet of air per minute to ventilate the workings.

Improvements by Robertson and Law.

A new slope has been sunk at the Katy Did Colliery a distance of 450 feet from the surface; area, 7x8 feet, with a gradient of 18 degrees.

A tunnel has been driven from the surface to the "Brown" seam, a distance of 100 feet; area, 10x10 feet, which is used for transporting coal.

Improvements by the Algonquin Coal Company.

On the Pine Ridge shaft of this company a new underground slope has been driven from the "Kidney" to the "Hillman vein," a distance of 632 feet, area, 7x20 feet. Three new gravity planes were made, varying in length from 380 to 460 feet. A tunnel has been driven from the Hillman to the Rock vein, a distance of 631-2 feet; area, 7x12 feet.

ers at the breaker were abandoned. In the mine an additional intake air course was driven in the eleven-foot seam and the return air course enlarged, which increased the volume of air in the six-foot vein from 85,000 cubic feet to 145,000 cubic feet per minute.

Pennsylvania Coal Company.—The No. 6 shaft was enlarged from 10x16 feet to 10x31 feet to make room for two hoist-ways a pump-way and an air-way from the surface to the Pittston seam, a distance of 312 feet, which shaft was then continued down to the Red Ash vein 300 feet. The location for a new breaker has been staked out to be built in the spring of 1898, which will prepare the coal from shafts Nos. 5, 6 and 11.

At No. 4 shaft of this company three new Babcock and Wilcox water tube boilers of 150 horse power each were erected, which take the place of twelve cylindrical boilers formerly used. Also at the Ewen breaker six Babcock and Wilcox boilers were erected and put in operation on February 13, 1897, which supply steam to the breaker, and to No. 7 and Hoyte shafts, supplanting the 27 cylindrical boilers previously used.

Forty Fort Coal Company.—At the Harry E., a new pair of First motion engines have been placed on the head of the inside slope in the Red Ash seam. Diameter of cylinders 30 inches, length of stroke 48 inches. The drum shaft is 14 inches in diameter and made of steel, length being 28½ feet. There will be 8,000 feet of one and one-half inch rope on the drum; 15 cars will be hoisted on a trip.

Raub Coal Company.—At the Louise Colliery an addition of 36 feet was built to the breaker and new machinery placed in position, thereby increasing the capacity of the breaker to 800 tons per day. New openings have been driven from the surface to the Ross and Red Ash seams by tunnels on the property lately acquired by the company. A small locomotive takes the coal from these openings to the breaker, a distance of one mile.

At 5 P. M., March 1, 1897, a settling of the surface was discovered on the east side of Eighth street, in the borough of Wyoming, Pa., which caused considerable anxiety to the people who resided in that vicinity. Realizing that the workings of the Pittston seam of the Mount Lookout Colliery had extended under that portion of the town, word was sent to notify William A. Thomas, the inside foreman of the colliery, of the fact. He immediately descended the shaft to make an investigation of the mine. On reaching the foot he encountered a rush of sand and water coming through the rock tunnel. Knowing the danger of being caught by the rush, he retreated to the foot of the shaft and was hoisted to the surface again. The mine had stopped work that day at 3 P. M., and all the men had come out some time before the rush took place. Therefore, the officials did not attempt to go down again for one hour. When the

Condition of the Mines and Improvements During the Year

The condition of the mines on the whole is very satisfactory. The ventilation is improved, the drainage is much better, and special efforts are being made in regard to propping roof. All these things I rigidly demand. The observance of the law, in reference to the employment of boys is also enforced to the letter. Only one case occurred in the district, where there was any need to resort to law, and was against the Avoca Coal Company. A copy of the whole proceedings in this case was forwarded to the Department.

KINGSTON COAL COMPANY

No. 4 Colliery

They have put up a fuel conveyer line to boiler house, made some slight changes in the breaker and put down a number of bore holes to prove rock cover over Orchard vein.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pettebone

A 20 foot ventilating fan, which was partly constructed in 1902, has been reconstructed and is now in working order, showing a very good percentage of efficiency. The erection of a locomotive boiler plant is in progress at this colliery, to be composed of 10 fire box locomotive boiler, which will be completed early during the year 1904. Three rock tunnels were driven through faults or anticlinals in the Hillman vein for development, transportation and ventilation. The Kidney vein has been opened in these shafts and developments will be pushed as rapidly as possible.

Pettebone washery, which has been practically idle during the year, has now resumed operations, and the refuse from the same is being placed in the Cooper vein of this colliery.

RAUB COAL COMPANY

Louise

Gravity plane at "Mt. Thomas," about 450 feet long, one pair of new 16x20 engines geared 4 to 1, with foundation and house complete for hoisting.

Outside.—Coal from Red Ash and Ross veins, on Eley tract, to foot of Bennett slope. Rope to run through bore hole, from surface to head of inside plane from eleven foot vein to Ross.

Inside.—No. 3 tunnel Klondyke, driven on mountain side from

surface to Ross and Red Ash veins, upper workings—serving as means of better ventilation, also as more convenient and safe entrance and exit to that portion of workings which are located so far from main opening.

TEMPLE IRON COMPANY

Harry E Colliery

Outside.—On the hoisting shafts they have put in new 10 foot drum on the hoisting engines, clutch gearing, which enables them to hoist from either of the three levels with both cages, which is we think a very decided improvement. The old drum was an 8 foot diameter drum without clutch, with which they could only hoist from lower level with both cages at one time.

Inside.—Slope being driven in 11 foot vein from shaft level down towards basin, with plane going to outcrop on same line as slope, this will be slope and plane combined, with pair of 14x16 engines in place to operate the same.

Ross

There has been a tunnel driven from Red Ash to Ross vein, size 12x8 feet on a pitch of 15 degrees. This will be the outlet for coal from new slope and plane which is being constructed in Ross vein.

Harry E. Colliery, Ross Vein

Inside.—There is also another tunnel from Red Ash to Ross, 10x6 feet on a pitch of 40 degrees which is return airway for new slope and plane.

The above mentioned improvements are the new work that is being done. Aside from that which would be more under the regular order of work, but which is improvements just the same, is the decided improvement in the ventilation which has been accomplished by the enlarging of the areas of airways both inlet and outlet airways at this colliery the past year.

Forty Fort Colliery

Outside.—New breaker capacity 1,000 tons per ten (10) hours. This breaker was put in operation on June 9, with the most modern machinery for the preparation of coal.

Shaft.—Widened out cage ways and retimbered in the new from top to bottom with concrete wall $2\frac{1}{2}$ feet thick, 20 feet from top down, all around the shaft. One new Sterling boiler 125 H. P.

Installed fire-pump in our new shaft buildings.

Completed bridge for our railroad track over Carpenter's Creek.

Built sand drying house 10 feet x 16 feet.

Built engine house 15 feet x 24 feet x 10 feet high for locomotives.

Put in concrete retaining walls $2\frac{1}{2}$ x8 feet x 99 feet long, at mouth of main slope, in place of the wooden cribbing that has heretofore been in use.

Drove 1,100 feet of new road, to connect new shaft to west gangway road.

Drove 240 feet of rock tunnel 8 feet x 12 feet for new road in Red Ash to face of 5th vein workings.

A slope 360 feet long at the inside end of new road was driven to the coal left in dip south of new road, and a 60 H. P. engine installed to operate this slope.

Installed electric haulage 300 feet long, with $8\frac{1}{2}$ ton motor. This road is lighted with electric lamps.

Made second opening to Ross vein, same being the rock tunnel, crossing measures to the Marcey vein, size 8x12 feet.

CLEAR SPRING COAL COMPANY

Clear Spring Colliery.—They installed a 115 K. W. electric machine and engine, and are at present using the current for drilling inside. They intend installing two electric locomotives at an early date to be used in their small vein, viz: Marcey vein.

W. G. PAYNE COAL COMPANY

A new 16x24x15 $\frac{1}{4}$ x18 inch Ingersoll-Sergeant air compressor, complete, has been installed alongside of the one already in use in a new engine house 16x44 built on concrete walls and foundation.

A new outside hospital for the mine stock, furnished with water and heat, was built during the year.

Air compressor pipe line running from the compressor down the shaft was increased in size from 8 to 10 inches.

There was a tunnel driven in the Eleven Foot vein through a roll 60 feet over all so as to get at the vein beyond.

Owing to the high percentage of acid in the mine water they changed all the Bennett pumps during the past year from cast iron to bronze. They also installed a new No. 10 Knowles pump in the Red Ash slope; also a new No. 9 Knowles pump installed at the same station.

There has been a new plane built 260 feet long used for conveying culm from the culm bank into the washery, in connection with a 90 foot swinging conveyor.

RAUB COAL COMPANY

Louise Colliery.—A tunnel, 106 feet long was driven from top Ross to bottom split of same vein in the Mt. Thomas drift, cutting the vein in good shape on the other side of fault.

A new air shaft, 6x6 feet, was sunk from surface on mountain

side a depth of 57 feet, commencing with chamber in top Ross on opposite side of fault, thus furnishing good ventilation for both splits, and a means of escape if necessary.

A slope, 200 feet deep, was sunk in Mt. Thomas, Ross bottom split, below level of tunnel.

A new steam pipe line 3,600 feet long was run from Klondyke boilers to Mt. Thomas, to drive fan, slope and pump engine.

A 10 ton mine locomotive was put to draw the coal from same colliery, viz: Mt. Thomas, in place of mules.

A new steam plane is under construction from a point on Red Ash, west gangway, Mt. Thomas, to a distance of 1,000 feet, up the pitch to a point at or near outcrop of vein, cutting off, several gangways from Klondyke east workings, enabling them to handle the coal much cheaper than the present system of haulage.

DELAWARE AND HUDSON COMPANY

Langcliff Colliery.—No. 2 slope, Red Ash vein, was extended 700 feet.

Two bore holes, 180 feet deep, each, put down for flushing culm into the mines.

ROBERTSON AND LAW COAL COMPANY

Katydid Colliery.—The only improvement made at this colliery during the year was a washery annex to the breaker and they have commenced washing the dump and mixing it with fresh mined coal.

NORTHERN ANTHRACITE COAL COMPANY

Murray Colliery.—They have extended the tracks for the large empty cars about 1,000 feet.

Installed a new breaker engine which is about 140 horse power, replacing the one that was formerly in use which was about 90 horse power.

TROY COAL COMPANY

Troy Colliery.—This company has made many extensive improvements.

They erected a new breaker, with a capacity of 500 tons.

Installed a new boiler plant, return tubulars of the Fox pattern, with a total horse power of 250.

They have replaced the old trestling leading from foot of plane to the breaker by a new one.

They installed a haulage system over half a mile long both inside and outside.

They are driving a new tunnel from bottom split of the Ross vein to the top split of the same vein, a distance of about 100 feet.

They are sinking two slopes, one in the Ross vein and one in the Red Ash vein. This will open up a large area and increase their output.

RAUB COAL COMPANY

Louise Colliery.—Rock tunnel at Mount Thomas from Ross to Red Ash seams, 271 feet long. One plane at Mount Thomas in Red Ash seam, 1175 feet long. New boiler plant at breaker. Two Maxim boilers 300 H. P. each.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pettebone Colliery.—The work of installing a Jeanesville steam pump, 20x7½x24, in Baltimore vein in concrete and steel pump room is now under way.

A rock tunnel has been driven from the Cooper vein to Five Foot vein, north of No. 2 Shaft, which will be used for developing and transportation.

The work of driving a rock tunnel from Cooper vein to Five Foot vein, west of No. 2 Shaft, on a 15 degree pitch, is now under way.

When these seams are fully developed they expect an enormous increase in the tonnage, which has been exceedingly low for the past year.

The conditions have also changed to enable them to mine the Hillman vein, south east of No. 1 Shaft.

DUNN COAL COMPANY

Mountain Top Colliery.—A new breaker has been erected and equipped with all necessary machinery, and an office, powder house, boiler room and blacksmith house have also been built.

They have opened the mine with two slopes.

A new ventilating shaft, expanded metal concrete crib, together with expanded metal division in shaft, completed from the surface to the Orchard vein, intake 10 feet by 12 feet, upcast 10 feet by 12 feet. Connected with this opening there has been erected, encased in an expanded metal concrete building, a 25 by 8 foot fan, driven by an 18 by 30 inch Vulcan engine. This gives separate ventilating current to the Orchard vein, also acting in case of emergency as a duplicate to the other concrete fan completed in 1909.

300 horse power additional Babcock and Wilcox water tube boilers have been installed.

Installed in Red Ash slope a new quintuplex pump, 1,200 gallons per minute capacity. A 6 inch bore hole for electric wires driven from the surface to the Orchard vein, thus removing the wires from slope hoistway.

Installed in Red Ash slope a new duplex compound condensing pump, with semi-rotary valves, automatic cut off, size of pump 30 by 16 by 10 by 36, said pump discharging through a new 8 inch concrete-cement lined bore hole to surface. Pump house being timbered with steel-concrete.

Rock plane 460 feet long, 15 degrees, completed from the Ross vein through Eleven Foot vein and Checker vein to Bennett vein, making a new second opening between Nos. 1 and 4 shafts.

In No. 1 shaft a tunnel has been completed from the Bennett vein to the Eleven Foot vein, also two tunnels from the Lance vein to the Cooper vein.

Four small shafts for ventilating and silting purposes from Orchard to Lance vein.

The electric wires have been taken out of Nos. 4 and 1 shafts and placed in a bore hole sunk for that purpose.

A new fire boss station built at the foot of No. 1 shaft.

Several new air bridges have been made in Nos. 1 and 4 shaft districts. Silting has been carried on extensively in Nos. 1 and 4 shaft districts during the year.

Installed a new 75 K. W. A. C. electric light outfit.

A new play-ground has been completed with swings, wading basin, horizontal bars, turnstiles, hand ball alley, etc., at the extreme end of No. 4 yard, where the miners have a chance for recreation with the children of said families. The play-ground has met with great success.

The system of night school has been continued during the year, and also the schools for the instruction of the "First Aid to the Injured Corps."

The general appearance of this property has been considerably improved during the year.

EAST BOSTON COAL COMPANY

East Boston Colliery.—One new pump 17 and 33 by 14 and 36 compound Jeanesville pump installed at Bennett Foot with 14-inch column pipe from the same to the surface.

RAUB COAL COMPANY

Louise Colliery.—Slope in Bottom Ross, Mt. Thomas. Slope in Top Ross Klondike. Slope in Bottom Ross Klondike. New plane outside at Klondike. Opening from Bottom to Top Ross in shaft. Opening Cooper vein in shaft.

KINGSTON COAL COMPANY

Kingston No. 4 Colliery.—No. 1 shaft: One 8-inch hole was drilled from Bennett vein to Ross vein for drainage. A new concrete air bridge was built in the Orchard vein.

No. 4 Shaft: New fireboss station was constructed at foot of shaft. Shaft was driven from Checker vein to Bennett for drainage and flushing. New 8-inch bore hole was drilled from Ross to Red Ash vein for pumping purposes. A concrete re-enforced partition was completed between the downcast and upcast airways in hoisting shaft. A concrete re-enforced building was erected for encasing a new 28-foot Vulcan fan with Corliss engine. This is a duplicate of the building erected in 1914. A new manway has been completed from the Ross tunnel to the foot of the shaft in the Red Ash vein.

EAST BOSTON COAL COMPANY

East Boston Colliery.—Installed one 21 by 36 inch air compressor, complete. Built fireproof compressor engine house; also fireproof hospital on the surface. Two electric generators were installed for lighting purposes. Tunnels were driven from Bennett vein to Cooper vein and from Eleven Foot vein to Bennett vein. An air shaft was driven from Cooper vein to Bennett vein.

HADDOCK MINING COMPANY

Black Diamond Colliery.—Rock plane was driven from Lance vein to Orchard vein, 208 feet, on 21 degree pitch, equipped with one pair of Flori engines. New fireproof engine room was built at head of Eleven Foot slope for housing 12 by 24 inch Vulcan hoisting engines.

RAUB COAL COMPANY

Louise Colliery.—Installed 3 electric hoists and 4 electric centrifugal pumps.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pettebone Colliery.—Breaker was reconstructed and is again in operation. The work of developing thin seams is still underway.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Pittston, May 18 and 19. The Board of Examiners was composed of S. J. Jennings, Mine Inspector, Pittston; James J. McCarty, Superintendent, Luzerne; Thomas Grogan, Miner, Luzerne; John Evers, Miner, Luzerne.

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