

*Miscellaneous Coal Companies.*

At the Steven's colliery a new Guibal fan 20 feet in diameter was erected on the air shaft connected directly to the crank of the fan. All the connections to the fan are not completed at this writing.

At the Avoca colliery a new fan 12 feet in diameter was erected on the air shaft which ventilates both seams in the shaft and does away with the furnace which ventilated the bottom vein.

At the clear Spring colliery a new Guibal fan 20 feet in diameter has been erected on the air shaft taking the place of the old Dawson fan which has been abandoned. This fan increases the quantity of air considerably.

At the "William A" colliery two new shafts have been sunk from the surface to the Red Ash seam, a depth of 164 feet by William A. Connell Sons and on the west side of the Lackawanna river in Old Forge township, Lackawanna county.

The hoisting shaft is  $16\frac{1}{2} \times 11$ . The other shaft which is used for hoisting and lowering men and for ventilation is  $27 \times 11$  feet area. A new Guibal fan 17 feet in diameter has been erected on the air shaft.

A new breaker has been built and supplied with first-class machinery for cleaning and preparing a large output of coal; the capacity of breaker is about 1,000 tons per day. It was started to prepare and ship coal in the month of May, 1890. The machinery in and around the breaker is properly fenced or boxed off for the safety of the employes.

The **Babylon Coal Company**, operated by Simpson, Watkins & Co., has opened up a new colliery on the west side of the Lackawanna river, opposite the town of Duryea. The openings consist of two shafts sunk to Red Ash seam, a depth of 289 feet. The hoisting shaft is  $12 \times 16$ , the other shaft is used for an air shaft and for hoisting and lowering the men; it is  $12 \times 18$ . A new fan has been erected on this shaft 20 feet in diameter which supplies the workings with a large quantity of air. A new breaker has been erected which is a large and commodious structure with a capacity of 1,200 tons per day. It is heated throughout with steam. It was started to prepare coal for market in the month of July, 1890. An inside rock tunnel was driven from the 5-foot to the 6-foot seam, a distance of 100 feet; sectional area  $12 \times 7$ .

Jermyn & Co. have opened a new colliery close to the town of Old Forge in Lackawanna county. The openings consist of two shafts sunk from the surface to the Red Ash seam, a depth of 236 feet. A new fan 18 feet in diameter has been erected on the air shaft, which supplies the workmen with a large quantity of fresh air.

A new breaker has been built and supplied with the latest improved machinery for cleaning and preparing coal for market. Its capacity is about 800 tons per day. It started to prepare and ship coal in the month of July, 1890.

*Newton Coal Company.*

At the Twin shaft a twenty-foot Guibal fan was erected on the air shaft as a duplicate to the old one. It exhausts 130,000 cubic feet of air per minute with a working speed of 67 revolutions. The fan is driven by a horizontal engine, cylinder 16 by 30 feet, directly connected to fan shaft.

*Butler Coal Company, Limited.*

A new shaft 12 by 18 feet, called the Chapman, has been sunk to the Red Ash seam, a distance of 120 feet. The second opening is not completed at this writing. The shaft is situated 4,800 feet southeast of a new breaker, which was built for the purpose of preparing coal for this and the Butler shaft. The coal from the Chapman shaft will be taken to the breaker by a small locomotive. A new fan will be erected as soon as the second opening is completed.

*Annora Coal Company.*

At the Annora colliery a new Guibal fan 16½ feet in diameter was erected to ventilate the tunnel workings, exhausting 102,870 cubic feet of air per minute with a working speed of 78 revolutions, run by a vertical engine, cylinder 11 by 18 feet.

*Stevens Coal Company.*

At the Stevens colliery a new rock slope was driven from the surface on a gradient of 30°, cutting the seam at a distance of 818 feet. All the coal from the old slope will be hoisted out of the rock slope, which will shorten the transportation considerably.

*Babylon Coal Company.*

In the **Babylon** shaft an underground plane was driven a distance of 1,800 feet on a gradient of 6°. The coal is lowered down by a pair of engines located at the foot, as the greater part of the coal in this colliery is to the rise of the shaft. This plan will be extended from time to time as necessity requires it to be done.

*Mount Lookout Coal Company.*

Two shafts were sunk by this company on the west side of the Susquehanna river close to the town of Wyoming, on the land of J. B. Schooley. The contract for sinking through the sand and gravel was given to Sooy, Smith & Co., of New York. The size of the shafts being 12 by 24 feet and 12 by 16 feet. The distance from the surface to the rock being 105 feet. The shafts being started in 1889 and completed in 1891.

On January 15, 1892, I wrote to Messrs. Simpson & Watkins for information and drawings in regard to the sinking of these shafts for this report, and received a reply from Sooy, Smith & Co., New York, Simpson & Watkins having referred my letter to them, who submitted the following to me:

#### Improvements by the Florence Coal Company.

This company sunk a shaft from the surface to the Marcy seam, a distance of 227 feet. It has a sectional area of 220 feet. The coal is taken to the Elmwood breaker by a small locomotive a distance of 1,933 yards. The second opening has not been completed at this writing.

A 15 foot Guibal fan was erected on one of the compartments of the shaft, which is run by a horizontal engine 12x18 inches.

#### Improvements by Robertson and Law.

A new slope was sunk at the Katydid colliery from the surface to the Checker seam, a distance of 200 feet, area 7x9, grade 18 degrees. The coal from this slope is taken 2,000 feet to the breaker by a locomotive. The workings are ventilated by the Consolidated slope fan.

#### Improvements by the **Babylon** Coal Company.

A tunnel was driven from the top to the bottom split of the red ash seam, a distance of 162 feet, area 7x12, to be used for transportation of coal.

#### Improvements by the Forty Fort Coal Company.

The "Harry E." shaft of this company was sunk from the eleven foot to the red ash seam a distance of 229 feet, area 22x12 feet. The second opening shaft was sunk to the red ash seam at the same time, and a new 20 foot Guibal fan erected therein, run by a vertical engine directly connected to fan shaft.

#### Improvements by the Delaware and Hudson Coal Company.

Two tunnels were driven in the Delaware shaft, one between the Baltimore splits, a distance of 150 feet, the other to the Ross seam, 300 feet in length, to be used for transporting coal. Two air shafts were sunk to a depth of 30 and 50 feet respectively, to air the workings of these tunnels. Two inside slopes are being sunk on a 15 degree pitch and are 160 and 180 feet down at present.

#### Improvement by the Mt. Lookout Coal Company.

Electric Power Plant, Mt. Lookout Coal Company, Wyoming, Penna.

The power house containing the generators and engine is a separate brick building forty by thirty feet, situated about two hundred feet from the mouth of the main hoisting shaft and about one hundred feet from the air shaft. The generating plant consists of one M. P. 4. 100 Kilowatt, (135 H. P.) generator, driven at a speed of 650 revolutions per minute and developing 575

### Improvements by the East Boston Coal Company.

A tunnel was driven in the East Boston shaft a distance of 108 feet, from the Cooper to the Lance seam; area 7x14 feet.

In the Baltimore seam an underground slope was sunk 250 feet, 8x12 on a pitch of 7 degrees.

At the Langcliffe colliery an air shaft was sunk 70 feet to ventilate the tunnel workings; area, 30 feet.

### Lafin Coal Company.

This company erected a new breaker on the site of the old one which was burned, and which was recorded in my last report. It is a model structure and contains about 900,000 feet of lumber and is fitted with the most approved machinery for cleaning and preparing the coal. It has a capacity of 1,000 tons per day and was started to ship coal in November, 1895. All the dangerous parts are protected by railing or covering as the law requires. A new shaft was sunk 600 feet northeast of the breaker; size, 12x26 feet, cutting the Marcy Ross and the both splits of the Red Ash seams at a depth of 256 feet. The second opening will connect with the slope workings when completed. A new fan 17 feet in diameter was erected to ventilate the shaft workings. The engine is 15x18 inches directly connected.

### Babylon Coal Company.

A tunnel was driven in this colliery from the top to the bottom split of the Red Ash seam, a distance of 140 feet for transporting coal.

### Mount Lookout Coal Company.

A tunnel was driven through a rock roll in the Pittston seam in this colliery a distance of 1,000 feet, area 7x12 feet. A new fan 20 feet in diameter was erected to help ventilate the workings which are very extensive. This is the third ventilating fan erected in this colliery. An underground slope was sunk 600 feet; area, 8x12 feet.

The main and air shafts are now being sunk to the Red Ash seam.

### Algonquin Coal Company.

In the Pine Ridge colliery a shaft was sunk to the Checker seam, 28 feet for ventilation. A tunnel was driven from the Hillman to the Rock seam a distance of 116 feet; area, 7x12 feet. A shaft was sunk from the Hillman to the Kidney seam as a second opening to those veins.

### Pennsylvania Coal Company.

A new breaker has been erected at No. 6 colliery which is located about 200 yards east of the site occupied by the old breaker which was taken down and removed to make room for improvements about the shaft. The new breaker is a large structure and it is estimated that about a million and a half feet of timber was used in its construction. Mechanically it is far superior to any breaker now in possession of the company in this district. The equipment is the most modern known to the anthracite coal business for the preparation of coal. After the coal leaves the car at the head of the breaker it is handled entirely by machinery until deposited in the pockets at the lower end of the breaker. An endless chain system is used for conveying the cars into the two patent Farrell dumps at the head, and as soon as the cars are emptied they pass over the tips, run up a short incline and switch themselves back to another set of chain conveyors. The cars are handled entirely by chain and gravity. In moving through the breaker the coal first passes over a set of bars through which the culm and fine coal find an opening and pass to the extreme bottom of breaker. The coal is then conveyed to the top of the breaker again and passes over a separate pair of screens, where it is crushed into sizes, recleaned by the patent Thomas slate pickers, and conveyed by the belt conveyors into the chutes. The larger coal passes over the grate bars and lands on a movable platform where it is cleaned as it passes over. The greater quantity of the coal after going through the rolls is elevated by three sets of elevators to the six main screens where it is separated into sizes. The culm is conveyed on belt conveyors to a pocket 100 feet from the breaker. The capacity of this breaker is estimated at 2,000 tons per day. The coal to be handled by it is mined from shafts Nos. 5, 6 and 11.

A new washery has been erected midway between the Ewen and No. 6 breakers to wash the culm in the old culm bank.

The No. 6 shaft has been sunk from the Pittston seam to the Red Ash, and a new brick engine house erected close to the shaft.

### Babylon Coal Company.

The Babylon colliery shut down on the 13th of January and resumed operations again on June 13, 1898, after being idle five months for general improvements in and about the breaker. The repairs consisted of taking down the trestling which spanned the 200 feet between the hoisting shaft and breaker. The hoisting shaft was re-cribbed from the rock to the surface, a distance of 56 feet, with 12x12 inch Georgia yellow pine, and a new tower was erected over the shaft. A conveyor line was built from the surface landing at the shaft to

dump room at the top of breaker, a distance of 300 feet. A No. 7 Harwood steel brushed chain with 12x48 inch flights, made by the Exeter Machine Works, of Pittston, Pa., conveys the coal along this chute to top of breaker for preparation.

A new addition has been built to the breaker, which has a capacity of 600 tons per day, for handling and cleaning all dirty coal by the process of washing the coal with water. A number of jigs and shakers were put in to prepare the smaller sizes for market.

Two tunnels were opened on the north end of the property to the Clark and Marcy seams. The Clark seam was cut at a distance of 525 feet; 425 feet of this was driven chiefly through quicksand which required double timbering with 12x12 timber with underlying mud sills, and is closely lagged with three-inch planks.

The other tunnel has been driven to the Marcy seam a distance of 160 feet, which required timbering in like manner as the above. The coal is taken from these tunnels by a 15-ton steam locomotive over a road three miles long to the breaker, where it is dumped and taken up in the breaker by the same line of conveyors that takes the shaft coal up.

The Clark seam is ventilated through the Red Ash vein by a rock plane driven for the purpose, and the Marcy tunnel is ventilated by a 12-foot fan run by compressed air, which gives great satisfaction at present.

#### Mount Lookout Coal Company.

At the Mount Lookout colliery a Sullivan undercutting machine was placed on trial in the Marcy seam, which is four feet in height and of a very hard nature requiring considerable powder to blast the coal required for a day's work. Therefore, this machine was placed on trial to test the practicability of adopting this method of mining in this vein. But what success has been met with in the different tests is impossible for me to say at present, as the drill has been in use only a few months, and this being the first cutting machine in the anthracite coal as I understand, it requires careful testing before it should be accepted or condemned. Therefore, the drill is placed to undercut in the different parts of the seam. A test has been made by cutting out the bony coal and again undercutting close along the bottom and carefully noting the results of each test. When I examined the machine at work they were undercutting along the bottom of the seam which is undermined from pillar to pillar across the face of the breast and four feet under; then three holes are drilled, one on each pillar, the other in the centre, and very little powder is required to bring the coal down. The opening at the face of the chamber in height to allow the drill to undercut the four feet is about ten inches and tapering down to the

On the morning of January 3, 1901, David J. Williams, mine boss and William Morgan, Martin Fortune and Wm. Earley, fire bosses of Laurel Run colliery went into the mine about 9 A. M., in company with a rock contractor, by the manway and descended to the Checker vein inside slope to locate a rock shaft which is as I understand to be sunk to Red Ash vein. After the contractor went out the above four men went down to the third lift to make an examination, and proceeded through some of the workings which were the returns from the fire, and when they found that they were so badly affected by damp they turned to go back and had reached the slope when they all fell, with the exception of Williams who started up the slope for help but failed to reach the top. Towards evening the outside foreman, Seaman Stucker became alarmed and sent for some of the workmen to look for them. When they were found about 9 P. M., Williams and Morgan were dead, Fortune and Earley after considerable exertion by the doctors were restored to consciousness in a few hours. Fortune died on the 10th of January, from the effects, but Earley fully recovered. What induced Mr. Williams to go into the mine after having been ordered to keep out is hard to say, as he was naturally bright and had filled the position of mine foreman for years before for other companies.

#### Burning of No. 14 Breaker.

On February 18, 1901, the large No. 14 Breaker of the Pennsylvania Coal Company located in Jenkins township, caught fire and was burned to the ground, and the employes were idle for some time until room in the other collieries of the company could be made for them. A new breaker has been built and the machinery is now being installed, with expectation of commencing to prepare coal by April 1, of this year. The breaker has a capacity of 3,000 tons per day and will have all the latest improved machinery. A new washery has been built in connection with the breaker to prepare all the refuse from it.

In January, 1901, the large "Babylon breaker" and washery of the Temple Iron Company were destroyed by fire. How it originated remains a mystery; the colliery has been idle since, the company having declined to rebuild. All the coal will be taken to the Lawrence breaker for preparation for market as soon as roads are built.

#### Improvements by the Lehigh Valley Coal Company During the Year 1901.

Prospect Colliery...The Prospect shaft was completed to the Red Ash vein and the hosting engines have been equipped with spools

The old frame tower on coal shaft has been replaced with a substantial structure of yellow pine.

The steam plant consisting of 18 cylinder, 1 return tubular and 1 return porcupine boiler is being replaced with sterling boilers. This work is now under way, four batteries of sterling boilers being in place.

Babylon Colliery.—A tunnel has been driven from the middle to bottom split of Red Ash vein, near foot of shaft.

#### JERMYN AND COMPANY

Jermyn No. 2.—Slope driven from outside to the Top vein.

Jermyn No. 1.—Installed Jeanesville pump at Jermyn No. 3, 3,500 gallon capacity.

Removed four tubular boilers from Jermyn No. 3 to No. 1 boiler plant, thereby making one plant of tubular boilers instead of heretofore three tubulars and three cylinders at No. 1 and four tubulars at Jermyn No. 3.

A slope 300 feet long was driven from Clark vein to 1st Dunmore vein for ventilation and transportation.

Tunnel driven from No. 1 to Jermyn No. 3 in the Baltimore vein.

#### PENNSYLVANIA COAL COMPANY

The new breaker that was being built in 1903 started up work on February 1, 1904. There is being built at present a new steam plant at the breaker, Sterling boilers, capacity 1,704 horse power, to replace the 900 horse power Babcock and Wilcox boilers, these to be removed elsewhere.

#### ELLIOTT, McCLURE AND COMPANY

Installed rope haulage in the Clark vein. Enlarging the second opening which has resulted in a great improvement in the ventilation. The operation of small pumps and engine in No. 1 Dunmore vein by compressed air.

A new Jeanesville compound duplex pump 17x28x16x36 inch, located in the Clark vein now pumps all the water to the surface.

The cribbing in the up-cast has been replaced by 22 feet of concrete.

They have also erected four stacks 48 inches by 80 feet, furnishing them with good draft for their boilers.

#### DELAWARE AND HUDSON COMPANY

Greenwood No. 2.—Rope haulage road No. 1 driven 1,200 feet to

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ness of the rock covers. These bore-holes are driven at intervals of 100 feet. Whether the rock cover will give out, or a pot hole or crevice be tapped between bore-holes, remains to be seen.

At the Twin shaft, the Clark 5th and 6th veins are being developed at Scovel Island, a substantial coal barrier being retained between the new and the old workings.

It was the 5th and 6th veins that collapsed at the time of the Twin shaft disaster, when there was a great loss of life, and the condition of these workings to-day is problematical. It is known, however, that they contain a large quantity of water, and it is the Company's intention to try to get it out with the pumps now being installed. It is also known that these old workings contain some gas, but how much is not known. A careful inspection, however, fails to show anything alarming. The action of gas and water in bore-holes, driven to caved territory in the 5th and 6th veins, prompted me to ask the Department of Mines to appoint some other inspectors to look over the ground, and report the result of their investigation to me in writing. This was done and the report filed in Harrisburg.

At the Babylon Colliery the robbing, which is about all that is being done, is progressing very well. A large percentage of coal is being won, and a fatal accident is a rare thing.

At the Lawrence the management has, in my opinion, persisted in risking life to rob the pillars, which in some instances are reduced to culm in the squeezed territory in which the men labor, contrary to my requests and instructions in the matter, the argument advanced being that the men are reasonably "safe" and the coal must be won. The territory that could now be robbed with some degree of safety is left to be destroyed by the cancerous growth of this squeeze, which must advance, as the resistance now retarding its development is reduced, by removing the crushed masses of coal that once did duty as pillars.

William A. Colliery.—This is a pillar problem, the solution of which has caused the most serious thought on the part of the officials in charge. The three splits of the Red Ash vein are mined, and the relative position of one to the other, with three pitches. (two to the basin, and one at right angles to it.) the Lawrence being above them at the highest elevation, and the only anchoring point being the pillar under the Lackawanna River, are the problems they must overcome to win the coal, preserve their property, and not sacrifice life. To my knowledge nothing definite has been decided upon.

#### HILLSIDE COAL AND IRON COMPANY

Consolidated Colliery.—There have been some new developments in the Red Ash vein, which will increase the tonnage and continue the life of this colliery.

#### CONNELL ANTHRACITE MINING COMPANY

Connells Colliery.—This company has increased their electrical equipment by the installation of motors, undercutters and dynamos. They have also constructed a large dynamo house and increased the horse power of their boiler plant.

The mines are in good condition.