

Average Number of Days Worked and Tons of Coal Mined Per Day for Each Person Employed.

NAME OF COMPANIES.	Days worked.	Tons mined per employé.
Pennsylvania Coal Company,	192.90	2.05
Lehigh Valley Coal Company,	154.14	2.34
Delaware, Lackawanna and Western Railroad Company,	186.00	1.43
Delaware and Hudson Canal Company,	198.00	1.89
Butler Coal Company,	151.71	2.30
Wyoming Valley Coal Company,	250.55	1.43
Miscellaneous coal companies,	180.68	2.04
All coal companies,	187.71	1.94

COLLIERY IMPROVEMENTS DURING 1885.

The Pennsylvania Coal Company.

At the Barnum Shaft, No. 2 was sunk from the Ross to the Red Ash vein, a distance of two hundred and thirteen feet. This improvement opens a large area of good coal for this company.

Pennsylvania Coal Company.

Shaft No. 14, located in Jenkins township, having reached the Fourteen-Foot vein, at a depth of three hundred and sixty-five feet. This shaft cuts the Seven Foot vein at a depth of two hundred and fifty-six feet. Its use will be for hoisting coal. The size is 12' x 52'. They are sinking the second opening, and have reached the Seven Foot vein, at a distance of two hundred and forty-six feet. The breaker is completed all but putting in the machinery.

Lehigh Valley Coal Company.

At the Wyoming Colliery a tunnel was driven from the lower to the upper split of the Baltimore vein, to be used for ventilation.

Delaware, Lackawanna and Western Railroad Company

Are sinking the second opening to the Pettebone shaft. There is no work doing in the mine shaft, as it has reached the vein they intended to work some time ago.

Delaware and Hudson Canal Company.

At the Pine Ridge Colliery, two shafts were sunk, one in the Baltimore vein, to a depth of one thousand feet. The size is 7½' x 12', with a gradient of ten degrees. The other is sunk in the Hillman vein, to a depth of

Undoubtedly the cause of the explosion was that when the gas became ignited from the previous blast, a small feeder was left burning unseen behind the brattice and the brushing brought the gas down in contact with it. The quantity of gas which exploded in the place was very small, but the place being narrow, the men received all there was of it, with no chance of escaping.

RECORD OF COLLIERY IMPROVEMENTS DURING 1893.

Pennsylvania Coal Company.

The new Barnum breaker, which was mentioned in my last report as being in course of construction, was completed and started to prepare coal for market in June, 1893. It is a large and commodious structure, having all the latest improved machinery.

At No. 7 colliery of this company a new air shaft, 12x12 feet, was sunk from the surface a distance of 331 feet to the checker seam, to be used for ventilation. A rock tunnel was also driven from the Pittston to the Marcy seam, a distance of 80 feet, for transportation of coal. In the Hoyt shaft a rock tunnel was driven from the Marcy to the Pittston vein, a distance of 480 feet, sectional area, 91 feet, to be used for the transportation of coal.

At No. 10 shaft a new exhaust fan, 20 feet in diameter was erected on the air shaft, in place of the one removed, it being too small; it will ventilate the workings of the red ash seam.

In No. 14 breaker an 8-foot fan was erected to take the coal dust from the breaker, which was greatly needed, as the coal coming to this breaker was very dry, so that the men and boys were terribly annoyed by the dust.

Lehigh Valley Coal Company.

This company has sunk an underground slope in their Oakwood shaft from the Checker to the red ash vein, a distance of 631 feet, on a grade of 30 degrees; sectional area, 10x13 feet. This slope opened up a large field of good coal in this vein, which is 14 feet in height.

In the Maltby Colliery the company has put in the "tail rope" system on their inside slope, which works very satisfactorily. A pair of first motion engines are situated close to the foot of the shaft which does the hoisting on the slope. The breaker has been rebuilt and enlarged, so that it will have a capacity of 1,500 tons of coal per day. The most approved machinery has been placed in it to clean and prepare the coal. An endless chain haulage, of about 500 yards in length, has been placed on the outside from the breaker to the shaft, which does away with all mules that were used heretofore.

A rock tunnel was driven in the **Wyoming Colliery** of this company from the five-foot to the Hillman seam, a distance of 195 feet, with a sectional area of 8x12 feet, to be used for transporting coal.

Improvements by the Lehigh Valley Coal Company.

At the Oakwood shaft the second opening to the underground slope has been sunk to the red ash seam a distance of 325 feet, with a sectional area of 230 feet.

An underground slope was also sunk in the red ash vein a distance of 614 feet on a grade of four and one-half degrees. This slope opens up a large field of good coal for this colliery.

The Exeter breaker has been remodelled and enlarged and a new tower erected over the hoisting shaft. The shaft has been repaired from the top to the bottom and the inside workings placed in shape for a large transportation of coal. The buildings at the second opening with the shaft have undergone complete repairs.

At the Wyoming Colliery a 15-foot fan was erected on the old opening of the Hillman shaft, which gives very good results; it is run by a horizontal engine 14x24 inch, and driven by belting.

Improvements by the Old Forge Coal Mining Company.

The Columbia shaft of this company was sunk from the Marcy to the red ash seam, connecting with the workings of their Phoenix shaft and completing the second opening for both shafts.

Improvements by the Butler Coal Company, Limited.

A slope was sunk by this company on the outcrop of the Marcy vein to a depth of 200 feet on a grade of 18 degrees, sectional area 84 feet. The coal is taken to the breaker by a small locomotive.

Improvements by the Delaware, Lackawanna and Western Railroad Company.

A tunnel was driven in the Hallstead shaft from the second to the third seam, a distance of 656 feet, area 6x12.

Improvements by the Algonquin Coal Company.

Two underground slopes were sunk in the Pine Ridge shaft, a distance of 1,100 and 300 feet respectively.

Improvements by John C. Haddock.

In the Black Diamond shaft a tunnel was driven from the Bennett to the eleven foot seam, a distance of 200 feet, area 8x12. An inside gravity plane was built a distance of 1,500 feet for transporting coal to foot of shaft.

shaft at a point where it will break through to the Red Ash vein. A gangway is now being driven to pass the new shaft so that by the time the rock work breaks through, the foot will be in readiness for business.

The Hillman vein, which has heretofore been worked from the Wyoming Colliery, is now being worked through the slope which has been driven during the past year from the head of the old underground Hillman slope to the surface, which it reaches about half-way between the Wyoming and Prospect collieries. The coal is now hoisted directly to the surface by a pair of engines installed during the past year, and from that point it is handled by a locomotive which enters the old Hillman water course and under the new Prospect breaker to the Midvale Hillman slope, where it is hoisted and dumped into the conveyor line leading to Prospect breaker.

At the Wyoming colliery of the Lehigh Valley Coal Company a narrow gauge railroad has been constructed during the year which connects Wyoming and Prospect collieries. This narrow gauge road also extends to the Henry Colliery so that these three collieries are now connected on the surface.

At the Henry colliery of the above company, extensive improvements have been made in the breaker which greatly increases its facility for cleaning coal. The principal improvements were a traveling platform, and increase of the head room for cleaning the coal in the larger sizes. The breaker has been also equipped with the Ziegler slate pickers. The air shaft has been re-timbered and put in first class repair. The large ventilating fan has been thoroughly overhauled and repaired. A boiler house almost exactly the same as the one erected at the Prospect colliery has been erected at a point half way between Wyoming and Henry collieries, and these two workings are now supplied with steam from this plant.

At the Maltly colliery an opening has been made during the year to the old four-foot workings near the breaker which was abandoned a great many years ago, and coal is now being mined from this seam.

At the Exeter colliery, the Red Ash shaft was sunk to the Red Ash vein and gangways have been driven a considerable distance on each side of the shaft. No chambers have yet been driven, as the second opening is not connected. A four-compartment steel tower has been erected over the shaft, and a 20-foot fan, which is so arranged that it can be used as an exhaust or blower, has been erected and this plant is now in first class condition. Work was commenced at sinking an air shaft which will be about 575 feet deep and is 13 feet 10 inches by 15 feet. It is expected that this shaft will be through to the vein and connections be made in the coal by the middle of August next.

LEHIGH Valley
Coal Co

placed at the head of slope to hoist the coal to breaker. Likewise a pair of engines was erected at the head of Coal Brook slope to hoist the coal.

At the Prospect Shaft a brick addition to the boiler house was made enclosing a 250 horse power B. & W. boiler. A new brick engine house has been completed. In the Midvale slope on different levels. Three rock tunnels were driven from the Hillman to Brookley veins, which will be used for the transportation of coal.

In the Hillman slope a rock tunnel was driven from the Hillman to the Bowkley veins.

At the Henry colliery the hoisting shaft was extended from the Baltimore to Skidmore veins. A rock tunnel was driven through an overlap to the five-foot, 220 feet. The second opening tunnel is being driven at present.

The two new shafts begun in 1902, were sunk to Red Ash vein, a distance of 675 feet from the surface. A brick engine house 34x72 feet was erected for the hoisting engines of these shafts.

The Wyoming shaft, the old wood cribbing from the surface to the rock, was replaced by concrete, which makes a good job at this shaft.

At the Heidelberg No. 1 slope a new rock plane, 18 degree pitch, was driven from the lower split to the upper split of Red Ash vein, a distance of 212 feet. The second opening was driven on a 30 degree pitch. A rock slope is being sunk from the Marcy to Clark vein, also a second opening shaft for same.

A new 12-foot diameter ventilating fan was erected. A new brick boiler house was built, enclosing a 450 horse power return tubular boiler. Dispensing with the old boiler plant.

Improvements by the Delaware and Hudson Company

At the Baltimore tunnel the General Electric Company has installed an electrical haulage which handles all the coal from the Red Ash vein to the mouth of tunnel, doing away with the use of a rope haulage plant and hoisting plant at No. 4 shaft. The Stanton vein slope has been extended 250 feet. A new breaker is in course of erection to prepare the coal which is now taken to No. 5 breaker for preparation.

Improvements by the Hudson Coal Company

A new breaker has been completed at Pine Ridge with a new steel head frame erected over the shaft. The foot of the shaft has been remodeled by brick arching and a chain hoist put in for handling the empty cars. To accomplish all of the above work at the foot of

Pine Ridge Colliery.—Rock plane to Ross, back basin, 512 feet; air shaft, surface to Ross bed, 66 feet; tunnel, Cooper to 5-foot No. 14 tunnel, 140 feet; tunnel, Cooper to 5-foot, first lift, 84 feet; rock plane, Kidney to Snake Island bed, 530 feet; air shaft, surface to Snake Island bed, 60 feet; replaced cribbing in shaft with concrete; rock plane, Checker, to Five Foot bed, 350 feet.

Baltimore No. 5 Colliery.—Air shaft sunk from surface to Five Foot, 48 feet; Young's slope reopened in Hillman bed.

LEHIGH VALLEY COAL COMPANY

Mineral Spring Colliery.—Outside. Twelve old company houses were repaired and painted and one constructed.

A shaft was sunk from the surface to No. 1 drift workings, in the Skidmore vein, for conveying the hoisting rope and to facilitate ventilation of the drift workings.

A wooden engine house was built and an engine installed for hoisting on the new slope now being driven into the basin in the Skidmore vein, No. 1, drift. Addition to shaft engine house. Electric lighting plant installed.

Inside. A 16 inch by 8 inch by 18 inch pump was installed in No. 8 slope.

No. 1 Skidmore drift was reopened, retimbered and the sinking of a new slope into the basin was begun.

HADDOCK MINING COMPANY

Black Diamond Colliery.—Outside. Installed a compound Ingersoll-Rand 15 inch by 25 inch by 20 inch air compressor driven by a 300 horse power G. E. motor, inclosed in a 25 foot by 52 foot by 12 foot brick building.

Changed breaker drive from steam to one 100 horse power G. E. motor.

Inside. Installed one 1200 gallon centrifugal pump driven by a 150 H. P. motor, Bennett vein to surface.

Installed one 600 gallon centrifugal pump driven by 50 H.P. motor in Bennett vein.

Installed one 600 gallon 10 by 10 triplex Aldrich plunger pump driven by a 100 H.P. motor in Eleven Foot vein.

Installed one 600 gallon centrifugal pump driven by 75 H.P. motor in Red Ash vein.

Changed hoist on Ross slope from steam to 75 H. P. G. E. motor.

Changed hoist on Eleven Foot slope from steam to 75 H. P. G. E. motor.

CENTRAL COAL COMPANY

Wyoming Colliery.—Outside. New locomotive house, new office, new stable. An addition and plane added to breaker so that coal is now hoisted and dumped at the top instead of the bottom as previously.

Installed 40 H. P. Lidgerwood electric hoist at breaker plane. Installed one set of crushers and three sets triple deck shakers. Two new fan houses; new engine house; new wash house; locomotive road relaid with 60 pound rails.

Air shaft sunk at No. 6 slope. One 6 foot electric Stine fan and one horizontal 6 by 9 Scranton electric pump installed at No. 6 slope.

One 20 H. P. horizontal triplex Scranton electric 6 by 9 pump installed at No. 5 slope.

1600 foot plane to Top Red Ash seam installed at No. 4 drift, operated with 75 H. P. electric Lidgerwood hoist.

Air shaft sunk at No. 4 Drift. 5 foot Electric-Sturtevant fan installed at No. 4 drift.

No. 9 rock slope driven from surface to Top Red Ash seam, 200 feet.

Inside. No. 8 slope driven 835 feet and operated by 30 H. P. Vulcan electric hoist.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Bergan Hall, Kingston, May 8 and 9. The Board of Examiners was composed of John B. Corgan, Inspector; Gilbert S. Jones, Superintendent, Dorranceton; Thomas Thornton, Miner, Parsons; Casimir Sieminski, Miner, Swoyersville.

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

MINE FOREMEN

Hugh Gillespie, Philip Condron, Plains; Gilbert Scott Wilson, Parsons; John Nathaniel Jones, Hudson; Albert Joseph Bevan, Wilkes-Barre.

ASSISTANT MINE FOREMEN

Riccardo Delmore, Laflin; James Andrew Cocking, Fred Henry Alderson, Charles Zapusek, Luzerne; Adam Sikora, Plymouth; John Francis Gallagher, Miners Mills; Arthur Pattison, Plainsville.