

automatically as soon as the bucket ascends through the door-passage. The Delaware and Lackawanna plan has balance arrangement, so that the headman can easily close it when the bucket passes. Both are very good arrangements, and either one is worthy of adoption.

COLLIERY IMPROVEMENTS DURING 1884.

The Lehigh Valley Coal Company.

In February, 1884, a new shaft was commenced by this company on the tract of land now worked from the Exeter shaft. It is located a short distance west of the Exeter shaft, and will be sunk to mine the seams lying beneath those mined in the Exeter. The size of the new shaft is twelve and a half by forty-eight feet, and it will reach a depth of about six hundred feet before cutting the intended seam. A block of coal was left unmined in the Pittston seam, through which this shaft passes, without making connection with the workings of the Exeter colliery. It was sunk at the close of the year 1884 to a depth of three hundred and fifty-five feet.

In the Prospect mine, a slope was sunk to the basin on north side of shaft to a depth of eight hundred feet, and an engine, worked by compressed air, is located at the top of the shaft to hoist the coal up. The engines which compress the air are located on the surface near the shaft, and the air is conveyed through pipes to the hoisting-engines in the mine.

At the Henry colliery, a new breaker was erected about three hundred feet north-east of the shaft. It was completed ready to connect with the shaft by the beginning of December, 1884, when work was suspended to tear the old structure away, and connect the new one. It was started about one week prior to the close of the year. This was a very important improvement at this colliery. It has decreased the risk of descending the mine, besides increasing the facilities for shipping coal.

The Dorrance colliery breaker was started June, 1884, and they are shipping a small quantity of coal every month since. The second opening to connect the two shafts was completed by the beginning of October; but, owing to faults and dislocations interrupting the gangways, they have not been able to mine much coal. The mine is ventilated by a thirty-five-foot fan, Guibal pattern, which was started April 24, and is ever since producing ventilation far in excess of their present need, although running but very slowly. Mr. Mercer, the general superintendent of this company, evidently is bent on securing the best kind of machinery, as well as insuring the highest known degree of safety for both men and property.

The Lehigh and Wilkes-Barre Coal Company.

On April 1, this company began sinking their new shaft at South Wilkes-Barre, and located it about three hundred feet south-west of the old shaft. Its size is twelve by fifty-two feet, and it is intended to work the Red Ash and over-lying seams. It is expected to reach the Red Ash seam at a depth of about one thousand three hundred feet, and had reached a depth of two hundred and thirty feet at the close of the year 1884. Its sinking

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.

of the said Thomas McDonald, Cortland Rolls and Alex. Young on 31st day of December, 1895, caused by boiler explosion.

JOHN E. PERKINS,

Deputy Coroner.

JOHN MOORE,

M. J. REAP,

MICHAEL FADDEN,

HENRY SAVANNAH,

CON. McLAUGHLIN,

JAMES CONNELLY,

Jury.

COLLIERY IMPROVEMENTS DURING 1895.

Pennsylvania Coal Company.

A new shaft was sunk a distance of 79 feet with a sectional area of 100 feet. It is used for ventilation at their Barnum colliery. A new 14 foot fan was erected which exhausts 95,000 cubic feet of air per minute while running 62 revolutions. It is driven by a horizontal engine steam cylinder 10x24 inches.

At Law's shaft a new 20 foot fan was erected which exhausts 95,500 cubic feet of air per minute, steam cylinder 15x30 inches.

At the Hoyte shaft a new 20 foot fan was erected as a duplicate to the one in present use and so arranged that it can be started at a minute's notice in case of the disarrangement of the other one.

The No. 5 shaft was enlarged from the surface to the Pittston seam, and cribbed from the rock to the surface with stone. It was then sunk from the Pittston to the Red Ash seam, a distance of 232 feet which opens up a large territory of coal. The second opening has been started for some time and will be connected with Number 11 shaft which will answer in the same capacity for it. A new fan 20 feet in diameter has been erected to ventilate the workings but it is not in operation at this writing.

Lehigh Valley Coal Company.

At the **Exeter** colliery of this company the culm washery was enlarged and fitted with the latest improved machinery for cleaning the smaller size coal. A new steam shovel was put in use to convey the culm to the washery, which works very successfully.

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.

Inside.—In the 11 foot they are extending the slope towards basin, size of slope 12x7. Ross vein they have reopened and extending slope towards basin, they are also extending plane which is in direct line with the slope. Size 12x7 feet. Have driven new tunnel from 6 foot to 4 foot vein, size of tunnel 12x7 feet. Have built a new traveling way separate and independent from the slope.

Inside.—Have built an additional airway (outlet) from 6 feet to 11 feet, size 10x6, which has made a very decided improvement in the ventilation.

Mt. Lookout Colliery

Outside.—Put in breaker, four (4) sets of Reading jigs, and rearranged 6 sets of Christ jigs. Fuel conveyer from breaker to boiler room.

Inside.—Driving new slope from Pittston vein to Marcy (called No. 7 slope). One electric locomotive, $7\frac{1}{2}$ ton, for work in chambers.

LEHIGH VALLEY COAL COMPANY

Maltby Colliery

A new brick boiler house, 120x5 has been constructed. Six sets, 300 H. P. each, or 1,800 H. P., B. & W. boilers are in course of installation. A number of additions and repairs have been made to the breaker, also betterments to the inside pumping capacity, and changes at the foot of the main hoisting shaft.

Exeter Colliery

A brick boiler house is under construction, and 300 H. P., B. & W. water tube boilers are being installed therein.

A new compressed air motor haulage plant is under construction for the Red Ash shaft district. A brick house encloses a Norwalk three stage compressor, size 20x24x14 $\frac{1}{2}$ x11 $\frac{1}{2}$ x5x24. A 15 ton air locomotive is on the ground. A six inch air pipe runs from the surface down the shaft to the inside haulage roads, total length of pipe, 3,700 feet. These roads are laid with 40-pound rails and special care has been given to the alignment and grading; in all, very favorable conditions now exist for a satisfactory haulage plant at this place.

New barns have been built in the Checker and Red Ash districts.

Pittston hoisting shaft and second outlet shaft completed from Pittston vein to Marcy vein.

New Jeanesville compound duplex pump, size 20x38x10x18, with

the rock, and about four feet above the level of the bed of troublesome quicksand, which was known to exist there.

These tunnels were driven from the three shafts at the same level, and connected all around the cribbing. As the work progressed it was protected by a lining of two-inch plank, six feet long. These planks were forced to place by home-made screw jacks, and kept in place by 2x4 inch wooden braces put between the planks and the cribbing.

After this enclosed trench was completed all around the cribbing, another like section was started, using the same method as before, except that the plank of the second section was allowed to reach a few inches above the bottom of the first section, and lap over it, thus binding the two sections together. With this method continued, four sections of six feet each, or a total of twenty-four in depth by three feet in width, were cleared all around the cribbing, down to the surface of the solid rock.

After carefully clearing the rock surface the concrete was dropped down through vertical troughs in the shafts, and made in courses about three feet high. The screw jacks and wooden braces were moved as the work of concreting progressed, but no attempt was made to remove the plank lining in the back.

Although considerable trouble was experienced with the treacherous quicksand which was encountered in a bed of about 8 feet thick and about 12 feet above the surface of the rock, the work was completed with great satisfaction, and without in the least disturbing the working order of the shaft or doing the least damage to the tower foundations. The cost was very little more than the open cut method, and if finished to the top would cost less than the open cut method.

Considerable credit is due to the foreman on the work, David Isaacs, of Plymouth, to the contractors, Reese D. Isaacs and Son, of Dallas, for the successful completion of this undertaking.

They also installed a new 300 H. P. "Maxim" water tube boiler which is giving marvelous results in the complete combustion of the smallest size of anthracite coal and culm.

This type of boiler has only recently been introduced into the anthracite coal fields, but is already commanding wide-spread attention.

LEHIGH VALLEY COAL COMPANY

Exeter Colliery.—Finished installation of 300 H. P. Babcock and Wilcox water tube boilers.

The new air motor haulage plant mentioned in last year's report is finished and working satisfactorily. The haulage roads and air pipes have been extended and equipment increased with two eight

ton air locomotives which feed from the face of the chambers to main passing branches.

Permanent air bridges of brick and cement in Red Ash.

A new 20 foot Guibal double intake fan driven by 18x20 inch Corliss engine; brick house is under construction at Red Ash second opening.

New 10 inch steam line, 1,200 feet long, to Red Ash shaft hoist engine.

One hundred new mine cars.

Eighteen degree rock plane completed from Red Ash to Babylon vein, 110 feet.

A series of surface test holes continued to determine safe rock cover over Checker vein.

Extensive repairs made to breaker and washery.

Maltby Colliery.—Finished construction of new brick boiler house, and complete installation of 1,800 H. P. Babcock & Wilcox water tube boilers. The plant is in every way up to date. Equipped with force draught fan, duplicate feed pumps, Cochran water heater, utilizing exhaust from surrounding engines, fire proof, ashes washed into mines, rope conveyors bringing fuel from breaker. This new plant displaces 18 cylinder and 7 return tubular boilers.

Addition built to breaker, and new shakers displace revolving screens on Buck, Rice and Barley.

New conveyor lines on Rice and Buckwheat.

New mechanical pickers.

Extensive repairs and renewals to breaker frame.

New concrete fire house, and emergency water lines. Lehigh Valley Collieries have trained, well-equipped fire companies.

No. 9 tunnel water level, driven 790 feet, and No. 16 tunnel, driven 525 feet from surface to Red Ash vein, and surface road 1,200 feet long connecting same completed to chain haulage system.

No. 12 tunnel from Ross to Red Ash completed, 150 feet.

One hundred new mine cars.

KINGSTON COAL COMPANY

No. 4 Colliery—Have erected one 175 K. W. direct connected generator 250 volts; one pair 24x48 inch first motion slope engines, with two friction drums for use by bore holes upon Red Ash and Ross slopes (not yet in operation); one boiler plant (not yet in operation), consisting of 4 sets Babcock and Wilcox boilers, 300 H. P. each; one brick oil house.

They have added machinery and spiral pickers in breaker, which is a decided improvement in the preparation.

Inside

Have placed one Goyne duplex compound pump 16x28 inch and

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RANDALL AND SHAAD COAL COMPANY

Colliery.—Ventilation bad. Roads and drainage good. Condition as to safety good.

O'Boyle and Foy Mining Company have erected a new breaker and sunk and opened up two shafts, one for a hoisting shaft and the other for an air-shaft, or second opening. They have not shipped any coal so far but intend to operate early in the spring of 1906. This breaker will have a capacity of from 800 to 1,000 tons per day when in full operation.

IMPROVEMENTS

LEHIGH VALLEY COAL COMPANY

Exeter Colliery.—Completed installation of 20 foot Guibal, double intake fan driven by 18x20 inch Corliss engine. Brick house for same.

New wash house equipped with 100 lockers.

Three hundred H. P. B. and W. water tube boiler and brick house.

New inside barn in Marcey vein.

A series of surface test holes to determine safe rock cover working limit over Checker vein.

Bore holes and extension of silt lines in Checker vein.

The breaker has been equipped with new mechanical pickers.

New cage on second opening Red Ash.

Maltby Co'liery.—No. 9 Rock slope, 600 feet long completed.

Surface road 1,200 feet long completed between shaft and No. 9 tunnel.

New brick stable for 60 mules, concrete harness house and mule hospital.

Three permanent concrete over casts are being constructed in Marcey vein.

New Duplex 30x10x36 pump placed at foot of shaft and 10 inch column pipe up shaft to surface.

A centrifugal pumping plant is under construction, including 175 K. W. 500 volt generator with engine for same.

One 12 inch bore hole for pump discharge.

Five thousand feet length of wiring from generator to pump.

New pump house at foot of Marcey vein haulage way.

Extensive repairs continued to breaker.

New shakers installed, also additional pickers.

Bore hole and pipe line for silting in Six Foot and Marcey veins.

Westmoreland Colliery.—This colliery was purchased from the Wyoming Coal and Land Company and came into possession of the Lehigh Valley Coal Company March 1. Immediately after its purchase an exchange was entered into between the Lehigh Valley Coal Company and the Pennsylvania Coal Company for the Monument farm tract, and slopes are being sunk through the barrier pillars in the Marcey and Pittston Veins.

A series of test holes has been and will be continued to prove the safe working rock cover over the Pittston vein.

A rock slope 300 feet long has been sunk from the Marcey to the Ross vein.

Two tunnels have been driven in water level from Ross to top split of Red Ash.

thick; there are two 8 inch concrete partitions which divide the building into three equal parts. The roof trusses are made of steel, with steel purlines and covered with galvanized steel roofing.

Road 24, in the Red Ash vein, was re-opened and 1,400 feet of track laid from the main slope to face of gangway. This gangway was continued through the rock a distance of 150 feet, striking the Red Ash vein on the easterly side of the fault. This gangway is now connected with workings on Road 28 and is a decided improvement in both transportation and ventilation.

No improvements at Mount Lookout and Forty Fort worth mentioning. Condition of collieries is good.

LEHIGH VALLEY COAL COMPANY

Exeter Colliery.—New self-acting gravity plane in operation between the Babylon and Red Ash veins. This dispenses with the upper landing in the Red Ash shaft.

The air motor haulage has been extended 2,000 feet and the feeding locomotives are now in service.

A new permanent brick arch bridge completed in South district, Red Ash vein.

A new permanent concrete air bridge completed in Marcy vein Pittston shaft.

The old wooden crib in Pittston shaft replaced by concrete, with new buntings and concrete connections to fan.

New engine installed driving Pittston fan.

On October 27 the Exeter breaker was practically destroyed by a cyclone or tornado sweeping up the Wyoming Valley. Work was immediately started cleaning away the debris and rebuilding, so that at the close of the year the new structure was almost completed and coal expected to be running through the breaker by the middle of January. During this interval an entirely new arrangement of tracks was made entailing 1,500 feet of grading and 2,000 feet of tracks, giving a safer means of transportation around the head of the Pittston shaft.

The position of the tower hoist engines has been changed, as well as the location of the breaker engine, both being closer to the breaker, thus avoiding any danger of conflict in the transmission power ropes, etc. The new buildings for these engines are of concrete with iron trusses and corrugated roofs.

All that remains of the old structure, practically speaking, are the pockets and the main screen room over the pockets. In the new structure every provision has been made for light, convenience and safety of the workmen. The timbers are of yellow pine, post and bracket structure resting upon concrete foundations.

A new 30 K. W. generator has been installed for illuminating purposes, in the breaker, yard, buildings and shafts.

New conveyor lines were extended and the old culm banks on the south side of the property are being regulated in the Exeter washery.

A new arrangement of tracks has been made at the head of the Red Ash shaft to avoid any possible contact with the hoist ropes.

The surface test holes to determine safe rock cover working, limit of Checker vein, have been continued throughout the year.

New fuel conveyor lines have been installed between the washery and the boiler house.

The conveyor between the breaker and the washery entirely rebuilt. Condition of colliery is good.

Westmoreland Colliery.—Series of test holes have been continued to prove the safe working rock cover over the Pittston vein.

Finished the installation of 300 H. P. Stirling boilers.

Enclosed the concrete house with corrugated iron roofing.

A new duplex pump 26x10x36, has been installed in the Marcy vein, discharging through a 10 inch column bore hole to the surface.

Steam and exhaust bore holes were completed from surface to the centrifugal pump station.

Drainage bore holes completed from Pittston to Marcy vein.

A new rope hole from surface to Pittston vein No. 1 inside slope with hoist engine on the surface.

The No. 1 Pittston vein inside slope has been extended 2,000 feet.

Number 5 Slope inside Pittston vein extended 800 feet.

Number 3 Marcy vein slope extended 1,200 feet.

Number 4 Slope Marcy vein extended 1,200 feet.

New mechanical pickers installed in breaker.

Rope hole is under construction from surface to Marcy vein.

Engines to be placed on the surface and removed from inside.

Considerable attention has been given to regrading the slopes and laying them with 40 pound rails.

New batteries and ventilating walls constructed, and roads given thorough attention to bring the colliery up to an efficient standard.

A new rope haulage engine installed on surface between foot of breaker plane and inside slope. The condition of the colliery is fair.

Maltby Colliery.—Three permanent concrete overcasts finished in Marcy vein.

Finished the installation of new centrifugal pump plant 175 K. W. with 500 volt generator with engine for same.

New bore hole and pipe line for silting in 6 foot and Marcy veins, location of bore hole being at foot of breaker.

Silting has been extensively carried on at this colliery during the past year in the Marcy vein.

A new head frame is under construction for the No. 2 Main Hoist shaft.

New conical drums were placed on hoisting engine.

Concrete lamp house for inside foreman's office.

A series of diamond drill holes were bored through the pillar in the No. 2 shaft to test the level of the standing water in the old Maltby 6 foot vein, with a view of tapping the standing water and bringing all the water to the central pump station at the foot of the No. 2 shaft.

The storm of October 27 did considerable damage at this colliery, blowing down all the stacks, the boiler fuel conveyor and a large portion of the steam lines. Repairs, however, were quickly made, and little time was lost in the operation of the mine. The condition of the colliery is good.

CLEAR SPRING COAL COMPANY

There were no particular improvements made at this colliery during the year. The general condition of the colliery is good.

owing to the nature of the surrounding wash, which is composed largely of quicksand. It was decided to recrib the shaft with steel inside of the old crib, removing that part of the cribbing that was decayed.

The steel cribbing is composed of sets of 12 inch steel channels, 20½ lbs. per foot, placed horizontally, with the web of flat side towards the timber and the flanges projecting into the shaft. These channels are bolted flange to flange every two feet by ¾ inch bolts.

The channels across the end of the shaft, 14 feet long, are in one piece; the channels running lengthwise of the shaft are in three pieces, being divided by vertical plates ¼ inch thick, 12 inches wide and 3 feet high. Connections were made by corner angle plates. The vertical plates are set in the centre lines between the compartments, the shaft having two hoistways and an airway, and engage the buntons, which are composed of 6 inch ship channels, 15 pounds per foot, set in pairs with the webs against the vertical plates and bolted to them. The buntons are spaced 36½ inches, and those between the hoistway and airway have an angle iron riveted to them to carry the wooden brattice of the airway. The cribbing is strengthened longitudinally by steel plates, ½"x7", placed between the flanges of the channels and extending back into the old timber crib. These stiffening rings were placed 3 feet apart. As the steel work was put in place the irregular space behind it, due to the removal of decayed wood, was filled with a strong cement grout, and, where the space was large enough, by concrete made of small broken stone.

The entire steel work was painted with graphite paint after it was placed in position. The depth of the steel cribbing is 52 feet from the top of the shaft.

The steel and the tools necessary for the erection of same were furnished by the York Bridge Company, who also furnished and erected over this shaft a steel tower, 56 feet high from foundation to center of sheaves, to replace the old wooden tower.

The time required to complete this work was one month. The colliery suspended work the last day of June and resumed work the first day of August.

LEHIGH VALLEY COAL COMPANY

Exeter Colliery.—A new gravity plane with second opening was driven in east district Red Ash to Babylon vein.

The high pressure air motor haulage has been extended a considerable distance.

In order to centralize the drainage a 4 inch bore hole was driven from the Marcy to Red Ash vein. This water is now handled by the Central pumping plant located in Red Ash vein.

Main east gangway in Checker vein re-opened for mining, and haulage engines installed.

A brick structure has been erected east of the high pressure boiler plant for the purpose of installing therein an additional high pressure air compressor, together with a 10 foot Sturdevant fan, boiler feed pumps and heater.

An 8 inch ash bore has been driven to the Checker vein. The ashes from the fires are now run by gravity to this hole, through which they are carried into the old workings of the Checker vein.

Harry E. Colliery.—Ventilation, drainage and condition as to safety, very good.

KINGSTON COAL COMPANY

Kingston No. 1 Shaft.—General condition as to safety good.
Kingston No. 4 Shaft.—General condition as to safety good.

CLEAR SPRING COAL COMPANY

Clear Spring Colliery.—General condition as to safety good.

STEVENS COAL COMPANY

Stevens Colliery.—General condition as to safety good.

PEOPLES BANK OF WILKES-BARRE, RECEIVERS

Black Diamond Colliery.—General condition fair.

RAUB COAL COMPANY

Louise Colliery.—Ventilation and drainage fair.

EAST BOSTON COAL COMPANY

East Boston Colliery.—General condition as to safety good.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pettebone Colliery.—General condition very good.

DUNN COAL COMPANY

Mountain Top Colliery.—General condition fair.

TROY COAL COMPANY

Troy Colliery.—Ventilation good; drainage fair.

IMPROVEMENTS

LEHIGH VALLEY COAL COMPANY

Exeter Colliery.—A high pressure air-motor haulage road is being constructed in the Checker vein to increase the output. It extends from the shaft to the eastern limit of the workings.

Two planes are being driven in Marcy east to develop that part of the vein.

1,600 feet of 6 inch high pressure air pipe line was installed to connect the new high pressure air plant to the Red Ash and Checker veins.

No. 6 Plane between Red Ash and Babylon veins was equipped and is now in operation. Electric lights have been installed in barns and in all landings in both shafts.

IMPROVEMENTS

LEHIGH VALLEY COAL COMPANY

Maltby Colliery—Outside.—A new 8-inch silt bore hole from the surface to the Marcy vein was completed. The old 8-inch silt bore hole was reopened and recased. Considerable repairs and changes were made to breaker. The Rock plane was considerably improved and extended.

Maltby—Inside.—The work of reopening and cleaning the main intake and return air course in the Marcy vein was completed. Electric haulage has been installed in No. 4 lift in the Marcy vein, and also at the head of No. 6 plane in the Six Foot vein. A new slope has been started to the east off main tail rope slope. Preparations are under way for a new rock slope from the Six Foot to the Marcy vein in the River district. Diamond drill driving, to locate old plane and flooded districts, was continued.

Westmoreland Colliery—Outside.—Extensive repairs to breaker. A new breaker with a self-acting Barney equipment completed. A new breaker plane hoisting engine was completed. An 8-inch silt bore hole from the surface to the Six Foot vein was reopened and recased. A series of test holes to prove rock cover in the Pittston vein were driven.

Westmoreland—Inside.—In the Six Foot vein a Y slope on the south side of the Mt. Lookout anticlinal was completed and equipped with an electric hoist. Electric haulage was extended between the foot of No. 1 slope and No. 2 plane. A new electric pump was installed in New Slope district, in the Six Foot vein. A rock manway was driven through the fault near the foot of No. 1 slope; also a rock manway from the Marcy to the Pittston vein on the tunnel level was completed. A 4-inch drainage bore hole from the Pittston to the Marcy vein was completed. In the Marcy vein a new electric pump was installed in No. 3 slope district, and a 11 degree rock plane started from the Marcy to the Pittston. Electric haulage was extended to No. 2 slope district. A concrete-steel overcast was completed in No. 3 slope district.

Exeter Colliery—Outside.—Extensive repairs were made to breaker. A concrete foundation and installation of new jigs in the washery were completed. The conveyor trestling between the breaker and the washery was entirely rebuilt. High pressure air compressor at the Red Ash shaft was removed to the new compressor house east of the boiler plant. A concrete air conduit for the new Blower system for the boilers was constructed. An 8-inch bore hole from the surface to the Checker vein for the breaker refuse silt, was completed, and preparations for the installation of a Jeffrey's crusher were made. The electric light system on the surface and in the mines was extended. Considerable changes to locomotive tracks were made.

Exeter—Inside.—Preparations for the installation of a new pumping plant in the Pittston vein are being made. The air-motor haulage system was installed in the Checker vein. In the Marcy vein preparations are being made for the installation of air motor haulage.

A "Y" slope was completed in the Marcy vein in the west district and engine installed. Considerable changes in the extension of air haulage in the Red Ash vein were completed.

TEMPLE IRON COMPANY

Mt. Lookout Colliery.—A bore hole was drilled from the surface to the Marcy vein, through which a rope operates the Ross slope. A pair of 14x18-inch Flory engines was installed in the 22 x 22 foot brick building for power to operate the above mentioned slope. 516 feet of 8-inch steam pipe from the new boiler house, leading to both fans and both hoisting engines, were installed. This gives them two steam lines to both hoisting engines and fans. An 18 x 30-inch engine was installed to operate the North side fan, to replace the 13 x 16-inch engine formerly in use.

Forty Fort Colliery.—A 7 x 12 foot airway was driven from the Eleven Foot vein to the surface, in a 30 degree pitch, and a 7 x 20 foot ventilating fan, enclosed in a concrete building, installed on airway. A new brick engine house and new foundations were erected immediately in the rear of the old hoisting engine house, and the hoisting engines moved into the new building. A brick building was also erected to cover the breaker pumps.

Harry E. Colliery.—A Carpenter dust-removing system has been installed in the breaker and is giving very good results.

KINGSTON COAL COMPANY

No. 4 Breaker is being overhauled and rebuilt while mining operations are carried on as usual. The work is almost completed. The circular screens have been dispensed with and new mechanical pickers installed, dispensing with all boys under the age of sixteen years. A new brick-concrete wash house for the employes has been constructed, equipped with 100 steel lockers, 12 bath tubs, shower bath, hot and cold water and all conveniences. A new brick addition to boiler house has been completed and 600 H. P. additional B. & W. Water Tube boilers installed. The wooden building encasing the engines at No. 2 bore-hole and Cooper slope substituted with brick-concrete. The No. 1 shaft rock slope 450 feet long driven through roll in rock for the development of the Orchard vein under the Flats. A similar slope has been driven through the fault to reach the Bennett vein. A brick safety lamp station installed on the surface. An additional ambulance, with rubber tires, spring stretchers, etc., has been purchased. The school for the foreign miners was continued throughout the year. A duplex four stage centrifugal pump installed in the Orchard vein, inside slope. Concrete girders have substituted the old wooden timber at No. 4 shaft and turnout. A new Emergency Hospital at foot of the shaft. Three ventilating tunnels completed in Orchard vein. A new quintduplex electric pump, 1,200 gallons per minute, is being installed at the foot of inside Red Ash slope, discharging through 10-inch wood lined pipe 5,000 feet in length. Two new concrete-steel overcasts completed in Ross vein.

The slant slope mentioned in the last report was extended. A concrete dam was built for turbine sump. A Jeanesville pump was installed at the foot of shaft to replace the old Griscom pump removed. Steel timbers put in on east and west side of the shaft, and steel girders at the foot of the same.

Arched roof consisting of high-rib and concrete put in to support roof between steel timbers. New concrete office for fire bosses and electricians completed near the foot of shaft in Marcy vein. General repairs made in the barn.

Westmoreland Colliery.—Outside: Extensive repairs made to breaker, consisting of new pockets and chutes and steam heating system. Six L. V. jigs were installed. Test holes to prove rock cover from Pittston vein progressing on last report were continued in the territory between Wyoming Avenue and the river and the work is now completed. Fire alarm system installed.

Inside: One small electric triplex pump installed in Marcy vein, No. 3 slope. No. 3 slope, Marcy vein, extended to Mt. Lookout anticlinal. Two diamond drill holes put down Pittston vein to prove Marcy vein south of Mt. Lookout anticlinal, and plans completed for driving tunnel through said anticlinal. 280 feet of grading, 180 feet of tunnel, and 320 feet of plane on 11 degrees completed from Marcy to Pittston vein, for dropping the latter coal to the Marcy vein. New road was driven through the old workings in the Pittston vein to mine virgin coal in northeast corner of property. Main haulage road in Pittston vein south of Mt. Lookout anticlinal graded for motor. Electric haulage system was extended. Inside bore holes put down from Marcy to Red Ash to prove veins.

Exeter Colliery.—Outside: Series of test holes were put down to prove Checker vein on the east end of the property beyond the fault. Concrete side-walk was laid in Exeter borough along the west side of Wyoming Avenue and drainage connections made with the Exeter borough sewer. New cage was put in Knight shaft. Old engines were replaced with 12 by 12 Clark and fan hoist repaired. An additional locomotive was installed. Fire alarm system installed. Extensive repairs were made in the breaker. Changes were made in the washery and two L. V. jigs added for egg coal. Building formerly used for compressor house equipped for housing locomotives.

Inside: A new concrete pump room mentioned in the last report, constructed in the Pittston vein and a 24 by 39 by 16 by 48 Goyne pump installed. The Marcy vein barn was enlarged. Old timber stalls are gradually being replaced with concrete, fourteen of which have been completed. 10 by 12 Flory engine placed in Checker vein and roads laid to develop northwest section. No. 8 slope, Marcy vein, extended. No. 4 plane workings in Top Red Ash vein connected with Nos. 5 and 6 plane workings. Work was commenced on the installation of a balance plane in Bottom Red Ash vein. A 7½ ton air locomotive added to present equipment in Red Ash vein. Work commenced in Marcy vein for installation of an air motor for haulage mentioned in last report was continued and is nearly completed.

William A. Colliery.—A new balance plane, 900 feet long, was laid outside at Campbell's Ledge, and a drift driven into the Marcy vein.

CONDITION OF COLLIERIES

LEHIGH VALLEY COAL COMPANY

Exeter, Seneca and Maltby.—Ventilation, drainage and general condition as to safety, good.

William A.—Ventilation good; drainage and general condition as to safety, fair. The principal work done at these mines is robbing the pillars, and considering the conditions, they are as safe as could be expected.

Westmoreland and Stevens.—Ventilation, drainage and condition as to safety, good.

FORTY FORT COAL COMPANY

Harry E. and Forty Fort.—Ventilation, drainage and general condition as to safety, good.

KINGSTON COAL COMPANY

Kingston No. 4.—Ventilation, drainage and general condition as to safety, good.

MT. LOOKOUT COAL COMPANY

Mt. Lookout.—Ventilation, drainage and general condition as to safety, good.

PLYMOUTH COAL COMPANY

Black Diamond.—Ventilation and drainage fair, condition as to safety, good.

EAST BOSTON COAL COMPANY

East Boston.—Ventilation and drainage fair, condition as to safety, good.

RAUB COAL COMPANY

Louise.—Ventilation, drainage and condition as to safety, fair.

CLEAR SPRING COAL COMPANY

Clear Spring.—Operations suspended indefinitely.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pettebone.—Ventilation, drainage and general condition as to safety, good.

RISSINGER BROTHERS AND COMPANY, INCORPORATED

Troy.—Ventilation, drainage and condition as to safety, fair.

IMPROVEMENTS

LEHIGH VALLEY COAL COMPANY

Exeter Colliery.—Inside: The balance plane in the Red Ash vein, mentioned in last year's report, was completed and put in operation. The Red Ash motor haulage was extended 800 feet to the Northeast territory. Five inside bore holes were drilled, two for drainage from the Top to Bottom Red Ash, and three to prove the Marcy vein north

of the fault from the Pittston to the Marcy vein. The mule barns in the Red Ash and Checker veins and the part of the Marcy barn of wood construction are being reconstructed of concrete. No. 3 tunnel, about 100 feet long, was driven through the fault in the Checker vein in the vicinity of Knight shaft to open up the virgin territory beyond the fault. To handle this coal a new slope was driven in the Checker vein and new engine installed. A tunnel, 150 feet long, was driven, and 250 feet of bottom rock was graded to mine the Marcy vein north of the fault. A 15 degree balance plane was driven from the Bottom to Top Red Ash vein to shorten the mule haulage in the Top Red Ash vein, the coal to be handled by motor in the Bottom Red Ash. Work was started to develop the Clark vein in Red Ash shaft, and two rock planes will be driven, one on 15 degrees to serve as the balance plane to drop the coal to the Red Ash, and the other on 30 degrees to serve as a second opening. The 30 degree plane, about 61 feet long, has been completed. The work of installing the air motor haulage in the Marcy vein, mentioned in last year's report, was completed.

Outside: About 30 test holes were put down to prove the Checker vein rock cover in the northwest and southeast sections. Holes are now being drilled in the northeast section along the Stevens Colliery line. Work was commenced on the installation of a new 463 H. P. Stirling boiler and the same is nearly completed. A Welch overwinding device was installed in the Red Ash engine house. New drums for the first motion engines at the Pittston Shaft are on the ground, and will be installed shortly. Extensive repairs were made to the breaker; breaker pockets were renewed and the old circular screens are being replaced with shakers; moving tables are now being installed and other improvements are being made to handle the preparation of coal. Terra cotta pipe was laid from the Red Ash shaft to the main ditch to convey the Red Ash water. A new flume was constructed along the Lehigh Valley Railroad to carry this water.

Seneca Colliery.—Inside: In the Pittston vein, No. 13 rock tunnel 300 feet long was driven through fault for development, and No. 10 slope was extended through coal to the entrance of this tunnel.

In the Marcy vein a ditch 400 feet long was started from the Basin in Scovill's Island, which will drain the water and supplant 3 electric pumps. This water will pass through a new tunnel 400 feet long through an anticlinal and run by gravity to the sump of No. 5 pumping station. A concrete steel pump house was built, with a 2-ton traveling crane, and a 13 by 21 by 34 by 16 by 36-inch pump was installed, completing Marcy pumping station. New head was driven for No. 5 slope facilitating the handling of coal from this slope. Telephones were installed at various points inside and outside the mines.

Outside: Commenced work on the erection of a 3,000 H. P. boiler plant. A new carpenter and blacksmith shop built and equipped with the latest machinery. Fireproof light and loaded scale office erected and put in use. A branch of the company's mine rescue station was established here and a brick building erected for it. Complete rescue apparatus has been purchased and is in working order, subject to call from any colliery in the Division. Conveyor line built to handle fuel from railroad tracks to old boiler plant. A 17-inch bore hole was started from surface to Marcy vein, through which the new pump in No. 5 slope will deliver water to the surface.

CONDITION OF COLLIERIES

LEHIGH VALLEY COAL COMPANY

Exeter, Seneca, Maltby, Westmoreland and Stevens Collieries.—Ventilation, drainage and general condition as to safety, good.

William A. Colliery.—Ventilation and drainage good. Condition as to safety, fair. The principal work at this colliery is the removal of pillars.

KINGSTON COAL COMPANY

Kingston No. 4 Colliery.—Ventilation, drainage and general condition as to safety, good.

FORTY FORT COAL COMPANY

Harry E. and Forty Fort Collieries.—Ventilation, drainage and general condition as to safety, good.

MT. LOOKOUT COAL COMPANY

Mt. Lookout Colliery.—Ventilation, drainage and condition as to safety, good.

PLYMOUTH COAL COMPANY

Black Diamond Colliery.—Ventilation, drainage and general condition as to safety, good.

RAUB COAL COMPANY

Louise Colliery.—Ventilation, drainage and condition as to safety, fair.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

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

EAST BOSTON COAL COMPANY

East Boston Colliery.—Ventilation, drainage and condition as to safety, good.

RISSINGER BROTHERS AND COMPANY, INCORPORATED

Troy Colliery.—Ventilation, drainage and condition as to safety, fair.

IMPROVEMENTS

LEHIGH VALLEY COAL COMPANY

Exeter Colliery.—Inside: An 18-degree rock plane 360 feet long was driven from Marcy vein to Pittston vein, for the purpose of removing the pillars in Pittston vein. A 15-degree rock plane 150 feet long was driven from Top Red Ash vein to Clarke vein, for a balance

plane. An additional 10-ton compressed air motor was installed in Checker vein. Ten additional concrete stalls were added to the mule barn in Checker vein.

Outside: The erection of the 463 horse power Sterling boiler mentioned in last year's report was completed and work commenced on an additional 463 horse power Sterling boiler. An 8-inch bore hole was drilled from surface to Red Ash vein to be used for slushing ashes from the boiler house. A 10-inch bore hole was drilled from surface to the Red Ash vein for silting purposes. New drums were put on the Pittston Shaft hoisting engines, and Welch overwinding devices were installed on both the Pittston and Marcy shaft hoisting engines.

Maltby Colliery.—Inside: No. 8 rock plane, 230 feet long, was driven on a 30-degree pitch from Ross vein to Nine Foot vein, No. 6 slope, to be used for a second opening. Completed Marcy vein mule barn, which is built of concrete and is fireproof throughout.

Outside: The wooden cribbing in the intake and return air shafts was removed and replaced with concrete. Extensive repairs were made to the main timbers in the breaker and 3 additional Lehigh Valley jigs installed.

William A. Colliery.—Inside: No. 24 slope was driven a distance of 1,000 feet and connection made to the Phoenix old workings north of the fault in the Fifth vein. Electric haulage in Middle Red Ash vein was extended about 3,200 feet. An air shaft was put down to Clarke vein at No. 10 tunnel, to be used as a second opening for this vein.

Outside: On August 25, the engine house at No. 10 tunnel was destroyed by fire. It has been replaced with a fireproof building of tile. The 6-foot diameter fan at No. 10 tunnel has been replaced by an 8-foot fan. A Welch overwinding device was installed on the shaft hoisting engines at William A. shaft.

Seneca Colliery.—Inside: No. 15 rock tunnel was driven through the anticlinal 280 feet long for a second opening. No. 8 rock plane, 68 feet long, was driven from Clarke vein to Marcy vein for a second opening. No. 15 slope, Marcy vein, was graded through the anticlinal a distance of 52 feet and steel timber put in for roof support.

Outside: On June 28, the two 20-foot ventilating fans at the Twin shaft were destroyed by fire. These fans have been replaced with a 24-foot steel fan of the Guibal type, propelled by an 18 by 30 inch 4 valve rotary Vulcan engine, in a fireproof building of concrete and steel. The 3,000 horse power boiler plant mentioned in last year's report was completed. It contains 6 batteries of 2 drum Sterling boilers, each battery having a capacity of 501 horse power. The engine room contains one 4,000 horse power Cochran heater, two 7 by 12 inch Goyne feed water pumps, and a 12-foot Sturtevant blast fan, propelled by a 16 by 18 inch Vulcan engine; the building, 28 feet by 183 feet 6 inches, is constructed of brick with a steel roof. An electric driven conveyor line of steel construction was built from the breaker to the new boiler house to supply boiler fuel. A concrete subway was constructed under the main line of the Lehigh Valley Railroad at Coxey shaft to provide a safe traveling way for men who are employed in and about the breaker. The old power house at Coxey shaft was torn down and replaced with a building of tile construction. An additional equipment was also installed

CONDITION OF COLLIERIES

LEHIGH VALLEY COAL COMPANY

Exeter, Maltby, Seneca, Westmoreland and Stevens Collieries.—Ventilation, drainage and condition as to safety good. William A.—Ventilation and drainage good. Condition as to safety fair.

KINGSTON COAL COMPANY

Kingston No. 4 Colliery.—Ventilation, drainage and condition as to safety good.

FORTY FORT COAL COMPANY

Harry E. and Forty Fort Collieries.—Ventilation, drainage and condition as to safety good.

MT. LOOKOUT COAL COMPANY

Mt. Lookout Colliery.—Ventilation, drainage and condition as to safety good.

EAST BOSTON COAL COMPANY

East Boston Colliery.—Ventilation, drainage and condition as to safety good.

PLYMOUTH COAL COMPANY

Black Diamond Colliery.—Ventilation, drainage and condition as to safety good.

RAUB COAL COMPANY

Louise Colliery.—Ventilation, drainage and condition as to safety fair.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

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

RISSINGER BROTHERS AND COMPANY, INCORPORATED

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

IMPROVEMENTS

LEHIGH VALLEY COAL COMPANY

Exeter Colliery.—Inside: A Flory engine was installed in a concrete and steel engine room on the North road in Red Ash vein. Silting was begun in the Red Ash and the fireproof mule barn was completed. Ten additional stalls were placed in the fireproof barn in the Checker vein.

Outside: Knight Shaft.—Built a concrete fan house and fan engine house and installed a 20-foot fan to replace the old one. Pittston Shaft.—Constructed a concrete floor and a corrugated iron roof to replace the old wooden ones. Added one 463 H. P. Sterling boiler to boiler plant.

CONDITION OF COLLIERIES

LEHIGH VALLEY COAL COMPANY

Exeter, Maltby, Seneca, Westmoreland and Stevens Collieries.—Ventilation, drainage and condition as to safety, good.

William A Colliery.—Ventilation and drainage, good. Condition as to safety, fair.

FORTY FORT COAL COMPANY

Forty Fort and Harry E. Collieries.—Ventilation, drainage and condition as to safety, good.

KINGSTON COAL COMPANY

Kingston No. 4 Colliery.—Ventilation, drainage and condition as to safety, good.

MT. LOOKOUT COAL COMPANY

Mt. Lookout Colliery.—Ventilation, drainage and condition as to safety, good.

EAST BOSTON COAL COMPANY

East Boston Colliery.—Ventilation, drainage and condition as to safety, good.

HADDOCK MINING COMPANY

Black Diamond Colliery.—Ventilation, drainage and condition as to safety, fair.

RAUB COAL COMPANY

Louise Colliery.—Ventilation, drainage and condition as to safety, fair.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

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

CAMPBELL, JOHNS AND COMPANY

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

IMPROVEMENTS

LEHIGH VALLEY COAL COMPANY

Exeter Colliery.—Tunnel was driven through the anticlinal in the Marcy vein. Rock plane was driven from Red Ash to Fifth vein. Four 4-inch drainage holes were drilled from Marcy vein to Red Ash vein, to be used for drainage purposes. A spray system for

fire protection was installed in the breaker and washery. Repairs to boiler plant were completed. Red Ash shaft engine house was rebuilt with brick and made fireproof. Tile hose house and scale office were erected. Colliery yard was regraded.

Maltby Colliery.—The pumping plant at this colliery has been abandoned. The water in the Marcy vein is carried in pipes to the lower elevation and forced up through an 8-inch bore hole to the Six Foot vein. It then flows to bore holes which were put through the barrier pillar to the workings of the Henry colliery, where it is pumped to the surface. A slope is being sunk in the abandoned Six Foot workings, Fuller shaft. Until recently these workings were under water. A Morgan-Gardner undercutting machine was installed in the Top Red Ash split. A spray system was installed in the breaker for fire protection. A concrete reservoir having a capacity of 50,000 gallons, together with a pumping plant, was installed near the breaker, to furnish water for the fire system. A steam shovel is at work picking up the culm bank at the Fuller colliery. A plane was constructed at the breaker and a locomotive track constructed for the purpose of transporting the culm to the breaker.

Seneca Colliery.—Two tunnels were driven from the bottom split of the Marcy vein to the top split. Two $7\frac{1}{2}$ -ton Jeffery electric motors were installed in the Clarke vein. One 6-inch bore hole was drilled through the barrier pillar to the workings of the Stevens Colliery in the Marcy vein. A Jeanesville pump was installed and a fireproof pumphouse erected at the Twin shaft to supply the breaker with water. A Pennsylvania crusher was installed at the breaker to crush the refuse for silting in the Marcy vein. Safety automatic gates were installed at Twin shaft. Colliery yard was regraded.

William A. Colliery.—Electric haulage was installed from No. 10 tunnel to Evan's Farm section and the system was rebuilt to William A. shaft. This will allow all coal to be transported underground instead of dumping part of the output into railroad cars for shipment to the breaker for preparation. A new concrete engine house was constructed inside and a bore hole put down for exhaust steam to handle the coal on the Lawrence plane. A tile washhouse and foreman's office was built at No. 10 tunnel. Steel lockers for 32 men have been provided. A substation for electric power has been established at Babylon shaft. A spray system for fire protection has been installed at the breaker. Automatic safety gates were installed at William A. shaft.

Westmoreland Colliery.—A new second opening was driven from the Pittston vein to the surface. The plant for generating electricity and a new substation built. Power is now purchased from Luzerne County Gas and Electric Company. The feed wire system was also rebuilt. A new tile shop building is under construction. A spray system for fire protection was also installed.

Stevens Colliery.—Two 6-inch bore holes were drilled through the barrier pillar in the Pittston vein and two in the Red Ash vein. These bore holes were 250 feet long, and will be used for the purpose of draining Stevens colliery and abandoning the pumping plant. Steam blowers were dispensed with at the boilers and a blast fan installed. Old boiler plant was dismantled. Work was commenced to reopen the Pittston and Checker veins for pillars. Refuse banks are being silted into the mines through a new 10-inch bore hole. A rock crusher is used to crush the material.

CONDITION OF COLLIERIES

LEHIGH VALLEY COAL COMPANY

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

Exeter, Westmoreland and Maltby Collieries.—Ventilation, drainage and condition as to safety, good.

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

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

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

William A. Colliery.—Ventilation fair. Drainage good. Condition as to safety, fair. The breaker burned January 2.

TEMPLE COAL COMPANY

Forty Fort and Harry E. Collieries.—Ventilation, drainage and condition as to safety, good.

KINGSTON COAL COMPANY

Kingston No. 4 Colliery.—Ventilation, drainage and condition as to safety, good.

MOUNT LOOKOUT COAL COMPANY

Mount Lookout Colliery.—Ventilation, drainage and condition as to safety, good.

HEALEY COAL COMPANY

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

WHITE COAL COMPANY

White Colliery.—Abandoned April 30.

IMPROVEMENTS

LEHIGH VALLEY COAL COMPANY

Stevens Colliery.—Removed the 20-foot ventilating fan from the hoisting shaft to mouth of rock slope. Installed one 10 by 12-inch Finch engine on the No. 11 slope in Fifth vein.

Exeter Colliery.—Installed four 5½-ton electric battery locomotives in Red Ash vein; also an additional 300-hp. boiler, and Edison portable electric lamps for use in breaker. Extensive repairs were made to the breaker, and 6 new jigs were installed therein.

Westmoreland Colliery.—Erected a new fuel conveyor from the breaker to the boiler house, and installed an Edison portable electric lamp for use in breaker.