

Mr. Robt. Looney, and his assistant, have made better use of the quantity of air they have than two-thirds of the mining bosses in this district, i. e., the air is better kept up to the face of the workings and thereby makes it safer and healthier for their men. Very few persons have been injured there in any way, and especially by burning, during the last year.

Machinery.—There has been much trouble in having the safety appliances satisfactory, such as safety catches, covers on carriages and an adequate brake on the hoisting drum. There have been three brakes condemned at this place during the last two years; the fourth is on the drum at present and gives good satisfaction; it is a compound lever brake without any dead weight attached. The superintendent of this company has decided to put on in future a different kind of safety catches from the ones in use at present; they are to be similar to the kind in use at Avondale shaft.

Robert Looney, mining boss.

Red Ash tunnel.—This is a small opening or mine located south of the borough of High, on the mountain side. The tunnel has been driven into the Red Ash vein. There are two lifts being worked in this mine when in operation, but it has not been worked much during this year.

Condition and ventilation.—This mine may be considered a safe one. It has good rock roof and no explosive gases are evolved. The ventilation is produced by the use of a furnace which is located above the workings in the outlet, the results depending much upon the temperature of the atmosphere outside. This mine has been worked by contract. Mr. J. Lovel, contractor.

Robt. Looney, mining boss.

No. 10 slope.—This mine is located a short distance north of the No. 9 shaft at Sugar Notch. It is a new colliery, the slope now being sunk about 800 feet and not yet graded, but will be ready to commence opening gangways and drive for a second opening early next spring.

Geo. H. Parrish, general superintendent; Thomas Cassidy, assistant superintendent; Adam Harkness, mining boss.

Hartford Slope No. 1.—This slope is located near Ashland borough and sunk on the Baltimore vein. The workings on the same lift at the slope have been worked out and another slope has been sunk on the same vein, commencing at a point several hundred feet east of the foot of No. 1. The coals from this slope are being hoisted to the surface through slope No. 1. There is also a tunnel driven from the Baltimore vein into the Ross vein, and one lift is being worked there, and its coals are taken out through said tunnel and hoisted through No. 1 slope.

Condition and ventilation.—These parts of the mine are considered tolerably safe. Ventilation is produced by a fan 15 feet in diameter, in the Ross vein, and by natural means, with the assistance of the heat and steam from boilers in No. 3 slope, on the Baltimore vein. Number of persons employed in No. 3 slope 38. John Clinton, mining boss.

No. 2 slope.—This slope is located south of No. 1, but is started from the inside on the water level gangway of the old tunnel, through which its coals are brought to the surface; it is sunk on the Ross vein, and through it the coals from one lift is being hoisted; the lift below being worked through the tunnel from the Baltimore vein.

Condition and ventilation.—These workings are tolerably safe. The roof is good, but there are small quantities of fire-damp generated in the lower lifts in both veins. Ventilation is produced in the Ross vein, both lifts, by a fan 15 feet in diameter. The air is divided east and west at the lower tunnel. This is then coursed through both lifts, and as a matter of course the air cannot but be very foul before it traverses the whole route, an unavoidable result where the system of coursing the air for so long a distance is adopted. It is an old working, and badly arranged for a systematic ventilation of the same. Geo. H. Parrish, Esq., general superintendent; Mr. William Tiffeny, assistant superintendent in charge; Mr. John T. Griffith, mining superintendent; Thomas Harkness, mining boss.

Slope No. 8.—This slope is located east of and adjoining the Hartford mines. It is sunk on the Baltimore vein. This colliery is nearly worked out, there being but some few places at work robbing pillars, &c., preparatory to abandonment. Ventilation is produced by a fan 15 feet in diameter. Number of persons employed inside, 20. Samuel Marsdon, contractor, and other officials same as over the Hartford mines.

Empire No. 2 shaft.—This shaft is located south of Wilkesbarre and near the Empire mines. It is 280 feet deep and sunk into the Red-Ash vein. This shaft has not been worked any since July, 1870, when it was stopped by the inspector,

Condition of the Collieries.

The condition of the mines in the district, generally is quite satisfactory. There are a few collieries, however, that ought to be mentioned as being below the general standard, to be found in the district, which is caused from the inefficiency or incompetency of those in charge. These parties frequently attribute the deficiencies to their superiors in office, or their employers; but I have seldom, or never found a badly arranged and badly ventilated mine where there was a person in charge who had the necessary qualifications to make things satisfactory, as such persons, generally, have stamina enough to overcome the objections raised to their plans, in a pecuniary point of view, by their employers—unless it be that the said officers, having been but a short time in charge, had not had sufficient time to make the improvements necessary. In fact, employers can mostly be convinced, by their head officers and their assistants, when properly explained, that it is cheaper to have a mine well arranged and well ventilated than otherwise. There are some exceptions to this, like other rules, no doubt. It is not only once, but many times, that the writer has heard the head officers blame those under them with having failed or neglected to carry out their wishes, and, in some instances, their positive instructions to comply with the provisions of the mining law. The following are the mines comprising the class above referred to, to wit: East Boston, Hutchison, Ellenwold, Maltby, Forty Fort tunnel, No. 5 shaft D. and H., Plymouth, Pools, Chauncey, and West Nanticoke collieries. The last named colliery is in a fair way for improvement, I believe. A new fan is about being erected at the Hutchison. Ellenwold shaft has changed ownership, which may cause improvements there. And new mine bosses are to be employed in Maltby, and several others of those mines, which may also be beneficial.

Mines on Fire.

THE EMPIRE, or Kidder slope fire is about the same as when my last report was made; parts of the surface caving in occasionally, which has to be filled up promptly.

BALTIMORE OLD WORKINGS.—These are burning up quite briskly, near the outcrop, for a large area, and but little hopes are entertained of ever extinguishing the fire in them until it exhausts the fuel within its boundaries at least.

Mine Improvements.

Improvements in mining have been very limited again, during 1878, as in 1877.

MALTBY COLLIERY.—Mr. Maltby had the new coal breaker started in the month of August, to prepare the coals from a tunnel on the mountain side, as, also, from a new shaft sunk during this year. The old shaft was not yet ready to do any mining in, as it was being timbered anew, besides some other improvements.

RED ASH COAL COMPANY'S COLLIERY.—This company has been organized to operate a small local opening, partially opened out many years ago

by Mr. Charles Parrish. The same is located a short distance south-east from the old No. 2 Hollenback colliery, near by the Lehigh and Susquehanna railroad, upon the Red Ash seam. They bought out Mr. Owen Hughes, who only produced coal as local sales. The new parties are now preparing to build a medium sized breaker, with a capacity of three hundred or four hundred tons per day, and to ship by rail in 1879.

Hollenback Shaft.

This shaft is located near the S. R. R., and not far from the basin of the canal, within the city limits. It was sunk by the Lehigh and Wilkes-Barre Coal Company, in 1874, to the Baltimore seam, which was reached at the depth of about five hundred feet vertical from the surface. A large bull pump is now being placed in the said shaft, in one of its six compartments, the same being forty-six feet long by twelve feet wide. The pump is to be put in two lifts. The sinking of the second opening and air shaft, located in a south-easterly direction, about thirteen hundred feet away, is now about being completed to the seam. It is intended to drive in both ways, *i. e.*, from each of the two shafts, to make the connections and complete the second opening.

A large fan, twenty-four feet diameter, of the Guibal pattern, is now being erected at the new air shaft. It is also the intention of the company's officers to ventilate the Diamond colliery from this new air shaft, there being but about two hundred feet of coal to cut through to make the connection. The shaft is to be divided into three compartments, two for air, and one for a traveling way for persons.

The depth of the air shaft will be about three hundred feet, which is twenty feet long, by twelve feet wide. It required ten or twelve thousand cubic feet of fresh air per minute to pass through the shaft to keep it clear of gas, and yet it could be ignited along the sides, at almost any point from the surface down, some jets being very strong. In 1874, when the shaft was only about fifty feet down, and when no lamps were required, an explosion occurred which proved fatal to one person, named Opie.

FANS.—There have been three new fans erected, two of which were of the Murphy ventilator pattern, and put in at the Maltby colliery, one erected at the tunnel, on the mountain side, six feet diameter, and one erected at their new shaft, the latter being eight feet diameter. These are the first of this pattern erected in this district.

GUIBAL FAN.—One fan, twenty-four feet diameter, of this pattern was erected, and put into operation on the 28th day of December, at the Nottingham colliery. This mine was formerly ventilated, in conjunction with the Washington colliery, where two fans were located, one twenty-four feet diameter, and another fifteen feet diameter. In the future, it is intended to use but one split of air from the Washington fan, the balance of the mine to be ventilated by the new fan, which is located on the Wright rock slope, on the western side of their workings. With proper

things will exist, and that a proper system and ample ventilation will, for once, be had, to enable the inspector to so report, and the employés to have what they are entitled under the law—good ventilation.

ALBRIGHT, DICKSON & Co.—This company operate, or rather are taking and exploring the territory in the same seam that the Ellenwold Coal Company operated in their new shaft. They began to drive a trial slope on the dip of the seam, in a southerly direction, and are down now over one thousand feet, having reached a vertical depth of about two hundred and thirty feet, and are still driving ahead. They are also driving the work necessary to secure a lawful second opening to the same, and doing other work, preparing for fan erections, &c., looking to the general operating of the colliery during the year 1880, to all appearance. Time alone will tell what the result may be. It is fair to say, however, that if pluck and perseverance, and a desire to comply with the law amounts to anything, then they should succeed, which success they are fairly entitled to.

RED ASH COAL COMPANY.—The said company has built the coal breaker which I mentioned in my last report as being in contemplation, and although it is only considered a small concern, yet their shipments from July to December of this year, both inclusive, amount to nearly twenty-five thousand tons of the celebrated red ash seam, and the colliery has the appearance of being a safe one for the workmen, and a paying one to the operator. The company has promised to erect a fan fifteen feet in diameter in the spring of 1880, to ventilate the workings and to take the place of a furnace temporarily erected there until the said time.

H. B. HILLMAN.—Mr. Hillman has sunk a new slope on a seam overlying the Hillman seam to the south, and has commenced shipping coal therefrom. Having already moved his fan to said opening, and had a second opening, &c., as required by law, Mr. Hillman is one of the very few individual operators now operating in this district, and it would appear that while he does not seem to be desirous to go (deep) into the mining business, he still likes to prove to our mining people that he can secure considerable of the black diamonds without going very far away from where he and his friends have been mining and preparing coal for market for the last thirty years. And so far as the writer knows, during his time as an officer here, the men employed by Mr. H. have done as well as under any other employer, and have been very free from accidents, unusually so. This, I say, is to the credit of both officers and the workmen, because neglect on the part of either would have been sufficient to produce different results.

DELAWARE AND HUDSON COAL COMPANY.—The improvements done by the said company consist principally in the erection of a new fan twenty feet diameter, near the old Swetand or No. 4 colliery, Plymouth, to ventilate the workings in No. 5 colliery, which was formerly done by a fan located at the head of their hoisting shaft. Mention was made of the unsatisfactory condition of this mine, and some others, in my last report; and now that the new fan above mentioned had been put into operation, I

Albright Coal Company.

A tunnel was driven from the surface through the Ross and Red Ash seams, through which the coal from those veins will be hauled to the breaker. It is one thousand feet in length and seven by nine feet in size. The veins are thin but of good quality. The shaft workings were abandoned and allowed to fill with water.

Red Ash Coal Company.

At this promising colliery a tunnel was effected from the surface to the Red Ash, and has cut the Six-Foot and Ross seams besides the former. The tunnel is six hundred and twenty-four feet in length, and the coal aggregate a thickness of twenty-four and a half feet of excellent quality. A new breaker is in course of construction which will enable this company to double their shipments for the year 1882.

New Shaft.

There are in all eleven new shafts in various stages of progress in this district, three of which have reached their terminus. A description and details relative to these shafts is given in Table No. 1, to which the reader is referred.

The Gaylord Coal Company.

A new air-shaft constituting a second opening to the Red Ash vein was sunk from the Ross seam, a depth of 120 feet, having an area of 10×12 feet. They also made two new planes, one in the Ross and the other in the Red Ash seam. Their lengths are 500 and 400 feet, respectively, on a grade varying from 13 to 18 degrees.

A. J. Davis.

At the Warrior Run colliery a new tunnel was driven from the D to E vein, a distance of 120 feet, and another is in progress from the D to B or Red Ash vein.

W. G. Payne & Co.

At the East Boston mine of this company, a new air-shaft was sunk convenient to the main workings, a depth of 150 feet, having an area of 10×15 feet, from the surface to the Cooper and Bennett veins, and the fan was removed from the old shaft and placed upon this. The ventilation of the mine has been greatly improved by this change, and is produced at less cost.

Haddock & Steele.

This company bought the Black Diamond colliery from J. C. Hutchison, and took possession March 1, 1882. Since then they have graded the underground slope, and made considerable improvements in the work.

The Red Ash Coal Company.

This company completed their second colliery ready to begin shipping coal on the 1st of March, and mined 69,204 tons of coal by the end of the year. All the coal, yet mined, is above the level of the breaker, and the Ross and Red Ash seams have been cut by a tunnel, through which the coal is brought out. A new slope was sunk, reaching a lift of coal below the level of their No. 1 colliery, from which a considerable quantity of coal can be very conveniently obtained.

Waddell & Walter.

This company completed their shaft at the Raubville colliery, and effected their second opening by connecting with the workings of the Black Diamond mine. The shaft was 170 feet to the Bennett vein. A new fan was erected to ventilate the workings, a description of which can be seen elsewhere in this report.

Waddell & Company.

The Bennett shaft, 10×20 feet, was completed, and cut the Bennett vein at a depth of 320 feet; also an air-shaft for the same mine. The breaker was set in operation in May, 1882, and during the remainder of the year they mined 26,226 tons of coal. This colliery is situated in Plains township, east of Mill Creek. A new fan was erected to ventilate the colliery, having a diameter of 22 feet, which is producing a ventilation of about 80,000 cubic feet per minute.

The Kingston Coal Company.

The No. 4 shaft of this company was completed upon reaching the Red Ash seam at a depth of six hundred and sixteen feet. Its size is 30'×12'. This opens a very large tract of convenient coal.

The Gaylord Coal Company.

At the Gaylord colliery a tunnel is in progress from the Ross to the Red Ash seam. Its sectional area is 7'×10', and its length, at present, is six hundred and fifty feet. This is intended to work the coal above the level of the bottom of the Gaylord slope.

A. J. Davis.

At the Warrior Run colliery a tunnel was driven from the C to the D vein. Its sectional area is eighty-five square feet, and its length one hundred and ten feet. The seam of coal was found eleven feet thick, and of good quality.

The Franklin Coal Company.

This company has started to sink a new slope, from the surface diagonally through the measures, to cut and work the Red Ash seam. Its sectional area is one hundred and sixty feet square, grade thirty degrees, and it was driven to a depth of one hundred feet at the end of the year.

W. G. Payne & Co.

At the East Boston mines of this company the shafts are being sunk or extended from the Bennett to the Ross vein. They had not struck the expected point at the close of the year, but they were approaching it closely. The blasting-hole in the air-shaft was thought to have penetrated the coal seam.

The Red Ash Coal Company.

A new tunnel is being driven from surface at the outcrop of the Baltimore seam, and is intended to drain and mine the coal lying above that level, and between that and the Red Ash slope, of both the Ross and Red Ash veins. It was driven a distance of three hundred and seven feet at the end of the year, and is expected to be finished sometime in 1884. This will open a wide extent of very convenient territory and desirable coal.

The West End Coal Company.

This company is opening a new mine and building a new breaker about three miles east of their West End colliery, in Conyngham township. It is to be named East End colliery. The breaker is expected to be ready in March, 1884. The vein is opened by two tunnels—one on each side of the basin—and they will mine and ship coal as soon as the breaker is completed.

The Delaware and Hudson Canal Company.

This company is sinking two new shafts in Plains township, near the Baltimore mines, for the purpose of mining the Red Ash seam. The main

The Kingston Coal Company.

The No. 4 shaft, sunk by this company, reached the Red Ash seam at a depth of six hundred and sixteen feet. This opens a very wide extent of territory and is expected to produce a large supply of coal. The second opening will be effected by opening into the workings of the No. 3 shaft of the same company.

The Franklin Coal Company.

Important improvements are in progress at the Franklin colliery. A new slope is being driven down across the measures to cut the Ross and Red Ash seams, and it has reached a depth of six hundred and ninety-three feet on a grade of thirty-three degrees. Eventually, when the slope cuts the Red Ash, a new breaker will be erected, from which all the coal of this colliery will thereafter be shipped. The ventilation of the old slope mine was considerably improved last year by enlarging the air-ways and by some modifications in the construction of the fan.

W. G. Payne & Company.

The East Boston shafts of this company were extended to lower seams. The main shaft to the Red Ash, a depth of three hundred feet, and the air-shaft to the Ross seam, a depth of two hundred and thirty-four feet. This improvement opens a large area of good coal for this company. The size of the main shaft is 11'×22', and of the air-shaft 10'×18'.

Haddock & Steel.

A new air-shaft is in progress at the Black Diamond colliery of this company, and it has reached the Cooper seam at a depth of one hundred and fifty-two feet. Its sectional area is 12×12 feet. A tunnel was also driven on a rise of seventeen degrees from the Bennett to the Cooper seam, by which a large piece of good coal is intended to be mined from a point some distance below the old Cooper workings.

The Red Ash Coal Company.

The new tunnel reported last year as being driven from the surface to the Red Ash seam by this company is completed. It cuts through the Ross seam at a distance of nine hundred and nineteen feet, where the coal was found to be nine feet thick. The Red Ash was reached at a distance of eleven hundred and ninety-seven feet, and the coal is of excellent quality. This tunnel drains all the workings of this company, and relieves them of the cost of pumping water. The slope was extended to the level of the said tunnel, and opens a new lift, of about five hundred feet in length, in both seams.

Thomas Waddell.

The Raubville shaft was extended from the Bennett to the Ross seams, a depth of two hundred feet. They are now driving a second opening.

which has been idle since 1878. The gangways were retimbered and the tracks relaid, so that the mine is now in shape to produce coal. It is to be hauled to, and shipped through, the No. 18 breaker.

At the Nottingham colliery, in Plymouth, the new air shaft was completed to the Ross seam, and a twenty-four foot Guibal fan was erected thereon to ventilate the workings. A cage and an engine adapted to hoist the workmen was also placed thereon, which proved a relief to both employes and company.

Delaware and Hudson Canal Company.

The new Baltimore shaft of this company was completed to the Red Ash seam, which was cut at a depth of 655 feet. It opens an extensive field of this seam, and the other shaft (No. 2), already working that seam, will be connected to effect a second opening.

At the Boston mine a new seventeen and a-half-foot fan was erected, which improved the ventilation of the mine to some extent. It was located at the No. 3 shaft—too far away to be of much effect as a ventilator of the Boston workings; hence, the result is not quite satisfactory.

The No. 2 shaft of this company, at Plymouth, was sunk from the Cooper to the Bennett seam, and opened an extensive field of that seam.

At No. 3 colliery a slope is being sunk underground in the Cooper seam. The hoisting engine is located on the surface, and the rope passes into the mine through a bore-hole made for the purpose.

Susquehanna Coal Company.

A number of minor improvements were effected at the mines of this company, but I shall note only a few. At No. 1 shaft, in both the Forge and Red Ash seams, underground slopes were sunk, extending to lower levels. The hoisting engines of both were located on the surface, and the ropes pass down through bore-holes.

The No. 4 slope was graded and thereby made to work much more satisfactorily. It is now being extended through the rock into the Hillman seam.

Red Ash Coal Company.

The No. 1 slope of this company was extended and a new pair of direct-acting hoisting engines were placed to hoist therefrom. The cylinders are 28x48 inches, and they work admirably.

At the No. 2 colliery a new slope was made to a length of 750 feet, and a pair of direct-acting hoisting engines were furnished, having cylinders 28x48 inches.

A new sixteen-foot fan was also erected on this mine, which has improved the ventilation to an appreciable degree. The collieries of this company are now in good shape for producing coal for a number of years.

CLASSIFICATION OF FATAL AND NON-FATAL ACCIDENTS.

Causes of Accidents.	Killed or fatally injured.	Severely injured.
By explosions of fire-damp,	7	33
By falls of roof and coal,	44	68
By falling down shafts,	2	. . .
Crushed and run over by mine-cars,	7	59
By explosions of powder and blasts,	4	23
By miscellaneous causes underground,	6	27
By miscellaneous causes on surface,	7	23
Totals,	77	233

Number of widows, 46; orphans, 182.

The Collieries of the Fourth District.

During the year 1894 there were forty-three breakers and sixty-six openings at work more or less time, mining and preparing coal for market in the Fourth Anthracite district. An average of 46,789 tons per day worked was produced, making a total production of 7,162,961 tons in an average work of 153.1 days.

The collieries in operation less than 153.1 days were those of the Lehigh and Wilkes-Barre Coal Company. The No. 3 colliery of the Delaware and Hudson Canal Company, which, after working 153 days, was destroyed by fire on the evening of November 15, and remained idle the remainder of the year. The No. 3 colliery of the Susquehanna Coal Company, where the production is not sufficient to keep the breaker working all day owing to the partial exhaustion of the mine. The Gaylord colliery of the Kingston Coal Company, several weeks' idleness caused by the disastrous cave of February 13th. The collieries of the Lehigh Valley Coal Company, the **Red Ash Coal Company**, the Parrish Coal Company, the Maffet colliery of the Hanover Coal Company, and the Warrior Run colliery of Mr. A. J. Davis.

The Lee colliery of the Newport Coal Company did not work more than 100 days. It was suspended on August 25th, and since then has passed into the possession of another company. The Buttonwood colliery of the Parrish Coal Company is an old mine enlarged and reopened. It was lying idle since 1866. The shaft was enlarged and sunk to a deeper seam and a new breaker was erected. It began shipping coal in September, 1894, and worked 50 days until the end of the year.

William H. Sayre, second vice president, South Bethlehem, Pa.

John R. Fanshawe, secretary, Philadelphia.

John B. Garrett, treasurer, Philadelphia.

Israel W. Morris, general land agent, Philadelphia.

W. A. Lathrop, general superintendent, Wilkes-Barre, Pa.

Directors, Robert H. Sayre, George H. Myers, Joseph Wharton, Thomas McKean, Beauvèau Borie, John B. Garrett, Wm. L. Conyng- ham, James I. Blakslee, C. O. Skeer, Charles Hartshorne, W. A. Ing- ham, John R. Fell.

Collieries of the Miscellaneous Coal Companies.

Beside the collieries commented on in the foregoing articles, there were twelve collieries operated by smaller companies in the Fourth district. These together produced 1,296,722 tons of coal and shipped to market 1,192,806 tons, in an average of 129.76 days of work. They employed 3,890 persons and mined 185,246 tons of coal per life lost. Three of the seven fatal accidents took place in the Hillman vein colliery, two in the West End, and one each in the Alden and Dod- son collieries. The Nos. 1 and 2 collieries of the Red Ash Coal Com- pany, the Parrish and Buttonwood, of the Parrish Coal Company, and the Maffet, Warrior Run, Lee and Chauncey, did not have one fatal accident.

These mines are all in safe condition and efficiently ventilated. More or less firedamp is emitted in each, but not in such quantities as we find in the deeper mines. They are working closer to the out- crops where the roof is generally better than in the deeper portions of the basin.

The names of the collieries and of the officers are as follows:

Nos. 1 and 2 Red Ash Coal Company.

M. B. Williams, general superintendent, Wilkes-Barre, Pa.

P. H. Ganahan, assistant general superintendent, Wilkes-Barre, Pa.

Daniel J. James, mine foreman No. 1 Red Ash.

Joseph Hopie, outside foreman No. 1 Red Ash.

Timothy Theopilus, mine foreman No. 2 Red Ash.

John Herriotts, outside foreman No. 2 Red Ash.

Officers of the Parrish Coal Company.

H. H. Ashley, general superintendent, Plymouth, Pa.

Thomas R. Evans, general mine foreman, Plymouth, Pa.

Parrish colliery, Henry G. Willilams, inside foreman, Plymouth, Pa.

Parrish colliery, Thaddeus Eddy, outside foreman, Plymouth, Pa.

Buttonwood colliery, Wm. T. Pritchard, inside foreman.

Buttonwood colliery, Merrit Frederick, outside foreman.

New slope in Ross tunnel No. 6 unfinished. New tunnel slope No. 6, Ross to Ross, unfinished. Shaft No. 7 sunk 40 feet, concreting to rock and permanent engine and head frame foundations completed.

DELAWARE AND HUDSON COMPANY

Conyngham

No. 4 tunnel driven from the Abbot to Snake Island vein, 325 feet.

No. 5 tunnel driven from the Abbot to Snake Island vein, 100 feet.

No. 6 tunnel driven from the Abbot to Snake Island vein, 150 feet.

The Abbot vein slope No. 4 was sunk a distance of 900 feet. Hillman shaft recribbed from rock to surface, and new head frame and house built.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Auchincloss No. 2 Shaft

A tunnel 7x12 has been driven from the Baltimore vein for the purpose of the development of the Hillman vein. Auchincloss No. 2 shaft.—The Baltimore vein has also been connected by a short tunnel to the Hillman vein for ventilating purposes.

Bliss Mines

~~The southwesterly side of this breaker was entirely reconstructed and improved upon by the installation of new shakers, belt conveyors and spiral slate pickers. A tunnel 7x12, 396 feet long, was driven from the Red Ash vein to the Ross vein for ventilation and haulage. One 10 ton electric locomotive was installed in the Ross slope, Espy tunnel, doing away with mules on this lift. A small 10 foot fan was located on the Forge vein for ventilation.~~

Truesdale

This is a new opening or operation. They are putting down at this location two shafts to be known as No. 1 and No. 2 Truesdale shafts. No. 1 will be a four compartment shaft, one pump way, two hoist ways and one airway, 45 feet 2 inches by 14 feet in the clear. No. 2 shaft will have two hoist ways and one air and will be 37 feet 2 inches by 14 feet in the clear. Operations have also been started to sink a slope to the Mills vein, a distance of 1,500 feet to the basin. They have also opened an old tunnel, known on geological survey maps as the Holland tunnel, and already gangways are being driven east and west to what is known as the Forge vein in this locality. The outside appearances of the collieries have been improved by the use of mineral paint and whitewash.

RED ASH COAL COMPANY.

Colliery No. 1

One 12 and 18x8x18 compound noncondensing duplex plunger Jeanesville pump.