

sary to make provisions to meet the forces, and difficulties here pointed out, and in addition thereto a demand for extraordinary ventilation, to meet the large amounts of gas generated and encountered. We have mines in this district generating a much larger amount of explosive gas per minute than this mine, but they are not as difficult of handling, on account of the irregular lay of the seam and its thickness. Then it is just as true, that the management has been very unsuccessful here. Mr. Weir, was the fourth mine boss, and Mr. William T. Smyth, second general mine foreman, under whose administration the terrible calamity, from which eight persons were horribly burned, and from which six died, and in consequence of which the mine was flooded, and subsequently the breaker burned. Mr. Weir has also been superceded by Mr. M. R. Morgans.

HARTFORD COLLIERY.—Great improvements have been made at this colliery during the year just past. A new slope has been sunk from the surface in a north-westerly course, and reaching down to the bottom lift, being No. 3 slope, south-west side, and is being driven downward from there towards the center of the basin lying between the south-west and north-west gangways in the said No. 3 slope, on the Baltimore seam. A pair of first motion engines, from No. 3, Hollenback slope, have been placed at the head of the said slope. Two tunnels have been commenced there also: one from the Ross to the Red Ash seams, in No. 2 slope, and the other from No. 3 slope, Baltimore, to the Ross seam. A new fan, twenty-five feet diameter, of the Guibal pattern, has been erected near the head of the aforesaid new slope, which will be very convenient and timely, as the old ones are too far away, besides being too small to properly ventilate the said extensive workings.

WANAMIE COLLIERY, No. 19.—A new tunnel has been driven here, from near the slope foot southward, to cut the Ross and Red Ash seams, besides opening of two drifts higher up on the mountain on the Ross seams. Another tunnel has been started near the No. 18 breaker, to prove a territory formerly left for some reason untouched, yet being quite convenient to the said colliery.

I should have said also that a new slope is being sunk to the north-west in the No. 2 slope, or No. 19 colliery.

EMPIRE COLLIERY.—A new fan, twenty feet diameter, has been erected at this colliery, on the Hillman workings, to substitute the one on the south side of the basin, which was only fifteen feet diameter, but which had done valuable services, having been run to one hundred and thirty revolutions per minute at one time. A little of the history of the ventilation of the Hillman seam, from 1872 up to the close of this year, probably, would not be out of place here. In April of 1872, I notified the officers of the company, being then Messrs. G. H. Parrish and John T. Griffith, to suspend all further mining in the Hillman seam, until properly ventilated. They complied in stopping, but the first day after it was done, or the same evening, a committee of five miners waited on me to beg of me to let the mine

9 MINE REP.

600 feet in length. This opens to a large tract of coal, which will be extensively mined as soon as a second opening can be effected. The old No. 2 shaft, whose workings were connected with the upper Red Ash tunnel in this mine, was arranged as an escape for the men, in case of emergency, by having good accessible ladders erected up through it.

At the Stanton shaft, a force of men were kept at work through the year re-opening the mine and restoring the ventilation of the old workings. A gangway has been driven a long distance, from which a series of chambers will be opened as soon as connection can be made with the new air-shaft. The latter is now sunk to the Baltimore seam, a depth of 840 feet, and they expect to have it connected with the Stanton workings by the middle of April, 1883. A 35-foot fan was erected on top of this shaft, ready to set to work when the connection is made, which will produce splendid ventilation upon the starting of the operation. The new breaker is completed, ready for operation, as soon as the connection with the air-shaft is made.

At the No. 9 shaft Sugar Notch, the two tunnels reported in last year's report were completed—one from the Ross to the Red Ash seam was 7x12 feet area and 705 feet long, the other, not on the same level, but from the Ross to the Red Ash vein, also was 7x12 feet area and 560 feet long. A new fan was also erected on this colliery, which has improved the ventilation and made the colliery much more comfortable to work in.

At the Lance colliery a new air-shaft was sunk, which is 10x18 feet area and a depth of 520 feet, and its connection with the main shaft effected. A new 35-foot fan was erected, on top of the air-shaft, to ventilate the colliery, when ready for operation. The old breaker was pulled down, and a new one is in progress of construction, which they expect to have completed by the beginning of next May, when the mine will begin to ship coal again.

At the Nottingham shaft a new tunnel was driven from the Red Ash seam to work the Ross, none of which has yet been mined. The tunnel was 7x12 feet area, and 1,075 feet in length, and they are, at this writing, working to effect a second opening to it.

At the Reynolds slope a tunnel is in progress from the Red Ash to work the Ross seam, 7x14 area, and had been driven, at the close of the year, a distance of 300 feet. Another tunnel was driven through a large fault, which opens a large tract of coal hitherto untouched; it was 360 feet long, and has an area of 96 square feet.

At the **Wanamie** colliery a new tunnel was driven from the Ross to work the Red Ash seam, which has an area of 72 square feet, and is 390 feet long. A new fan, 15 feet diameter, was also erected at this colliery, which has been the means of producing much improvement in the ventilation.

The South Wilkes-Barre shaft is completed to the Hillman seam, a depth of 700 feet, and have found the vein proving better than their expectation. This has opened a large tract of hitherto solid territory of coal, and

Mine Improvements during 1888.

During this year the spirit of improvement was active, and a number of important movements were made towards improving the condition and the producing capacity of the collieries. Among the number the following were perhaps the most important:

Lehigh and Wilkes-Barre Coal Company.

At the Hollenback colliery movements are in progress towards working the Red Ash seam. A new air shaft is being sunk from the surface and has, at this writing, passed below the Baltimore seam. Its size is 12x37 feet, and it is expected to cut the Red Ash seam at a depth of about 650 feet. Preparations are in progress also to have the main shaft extended from the Baltimore seam, where it now is, to the Red Ash.

At the Stanton colliery a new fan was erected on the air shaft to duplicate their other thirty-five foot fan. The mine gives off such an enormous quantity of fire-damp that it was very hazardous to suspend the course of the air currents for any length of time. To avoid this a new thirty-five foot fan was erected adjacent to the other, and doors were so adjusted that, in case one fan stops running, the other can be operated in a few minutes to ventilate the mine. This mine now has one pair of seventeen-foot double fans and two thirty-five foot fans for the purpose of producing ventilation.

At the South Wilkes-Barre shafts, Nos 3 and 5, extensive preparations are in progress for the completion of the colliery. The main shaft is 1,064 feet deep to the Baltimore seam, where the coal was found in its usual thickness of sixteen feet and of excellent quality. The shaft is divided into four hoisting compartments and an up-cast air shaft. This work is now completed, and a large force is at work erecting foundations for the massive hoisting engines which are to be placed thereon.

The other shaft (No. 3) was sunk to the Baltimore seam also, and cut the latter at a depth of 250 feet below the old terminal or Hillman seam. One of these shafts will constitute a second opening to the other, and coal will be mined from both. A new pair of first-motion hoisting engines were placed on this shaft, and a solid wall of mason work was erected to support the earth from the rock to a point several feet above the surface around the shaft, greatly enhancing its safety. It is expected that a considerable amount of coal will be mined during 1889 from this colliery, which will be shipped from the Diamond breaker.

At the Sugar Notch shaft, No. 9, a new twenty-four foot fan was erected chiefly to ventilate the workings of two seams opened at the bottom of the shaft; *i. e.*, splits of the Baltimore seam. This makes the third fan used in ventilating this colliery, which is quite effective.

At **Wanamie** the water was pumped out of the old No. 19 slope,

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.

The Red Ash slope was extended, and a new lift was opened. A line of water pipes was laid into the lower gangways ready in case of fires from ignition of gas. The weak and affected pillars were strengthened by having the exhausted breasts filled up with refuse. A new underground slope was sunk on the Ross seam a distance of 660' and the rope for hoisting, passes down a hole 206' deep from surface. The hoisting engines on surface are 22"×48" direct-acting to a parallel drum 9'×14'.

Two batteries of Babcock & Wilcox high pressure boilers, 212 horse power, were added to the surface plant and three elevators and three setts of conveyors were added to the breaker.

At the Reynolds No. 16 colliery the new breaker in course of erection in 1890 was completed and the old one was removed. The new breaker was started to prepare coal for the market in April, and so was the new slope described in my last report. An underground slope was sunk in the Ross seam with hoisting engines located on the surface, size of cylinders 14"×24". The bore-hole through which the rope passes is 125' deep. A tunnel 300' feet long was driven through rock fault in the third west gangway, and a new plane was made in the Red Ash seam.

At the No. 18 colliery, **Wanamie**, a tunnel was driven from the Baltimore to the Ross seam a distance of 630 feet, and at the No. 19 colliery a tunnel was driven from the Ross to work the overlying seams. The main slope is also being extended to work another lift in the Ross seam. The breaker was remodeled, and one sett of elevators and two large conveyors were added to its machinery.

Improvements by the Delaware and Hudson Canal Company.

At the No. 2 shaft, Plymouth, an underground slope is in progress of sinking in the Bennett seam. This will enable them to mine the coal lying to the dip from the shaft level. A second opening was made for the Bennett seam by driving to connect with the workings of the No. 5 shaft, making a very convenient place of exit in case the shaft became unavailable. At the No. 3 shaft, Plymouth, a plane 1,000' long, on a grade of 9°, was made in the Five Foot seam.

Improvements by the Susquehanna Coal Company.

At the No. 1 shaft the second opening for the underground shaft was completed by driving to connect with the slope level workings. Second opening for the tunnel to the Ross was also effected by driving a rock plane from the Red Ash level gangway. This will be useful also to work a large area of the Ross seam to the rise from that point.

A sixteen-foot Guibal fan is in course of construction to ventilate the workings of the George seam.

An underground slope is being sunk in the Forge seam east of the shaft. The hoisting engines for which are located on surface near the No. 2 shaft and the rope passes into the mine through a bore hole drilled for that purpose.

A short rock tunnel for ventilating purposes, 43 feet long and 7×12 feet area from the top to the bottom split of the Red Ash seam, was driven.

At the No. 8 Jersey colliery two new tunnels were driven from the Baltimore to the Ross seam, one in each of the two lower lifts of the new slope, and they are continued to tap the Red Ash seam. Size of each is 7×12 feet, and their lengths will probably be 600 feet each when completed. They are now at work driving second openings for the Ross seam.

At the No. 9 colliery, Sugar Notch, the underground slope is being extended, and a traveling way has been completed 900 feet in length on a grade of 20 degrees.

At the No. 11 Lance colliery a new air shaft is in progress of sinking, 12×30 feet area, and it will be about 600 feet in depth when completed. At the close of the year it was at a depth of 40 feet. Three new gravity planes of various lengths were completed, to run coal down from elevated workings. A new Guibal fan thirty-five feet diameter was erected as an auxiliary to the old one. It exhausts 229,630 cubic feet of air per minute when running fifty revolutions. This also has a self-recording pressure meter connected to the return air and an automatic alarm attached to give alarm in case the ventilation is reduced.

At the Nottingham colliery a new air shaft has been sunk to the Ross seam. It has an area of 12×30 feet and a depth of 175 feet.

A new fan 24 feet in diameter is in progress of erection and will be operated by a horizontal direct-acting engine 20×36 inches.

At **Wanamie** Nos. 18 and 19 two new tunnels have been driven at different points from the Baltimore to the Cooper seam. Each is 165 feet in length and 7×12 feet area.

The No. 19 slope is being extended to open another lift.

Beside improvements recorded above, a number of new steam boilers were added to the plants of several of the collieries, and several other minor improvements were effected.

Improvements by the Delaware and Hudson Canal Company.

At the Baltimore Tunnel colliery, the underground slope on the Red Ash seam was extended a distance of 500 feet, making the total length of the slope equal 900 feet. The average grade is 18 degrees. At the Boston colliery a new fan has been erected on the foundation of the old one which was torn down. This is 20 feet diameter and running 100 revolutions exhausts 50,000 cubic feet of air per minute under a pressure of 0.75 inch water gauge. The size of the engine is 14×48 inches, running the fan by a belt transmission.

At the No. 2 colliery, Plymouth, an underground slope has been sunk to a length of 500 feet on a grade of 12 degrees, which is the inclination of the seam. It opens a lift of excellent Baltimore vein coal. The engine to hoist from this, is located on the surface.

and at the end of the year it was driven to a length of 440 feet on grade of 20 degrees.

This will also open some coal for the Maxwell breaker in addition to the production of the shaft.

The woodwork of the Maxwell breaker is completed ready to be equipped with machinery. It will be ready to prepare coal for the market by the time the shaft is completed.

At the No. 9 colliery, Sugar Notch, the underground slope was extended a distance of 300 feet where a new lift was opened. A rock tunnel was driven on a rise of 45 degrees, having an area of $12\frac{1}{2} \times 8\frac{1}{2}$ feet, and a length of 104 feet, for the purpose of improving the ventilation.

At the Lance No. 11 colliery important improvements are in progress and some were completed. A new underground slope was sunk, extending farther south than the bottom of the old slope. It is 800 feet long on a grade of 8 degrees and opens a considerable area of coal which has been hitherto unavailable.

An air passage was driven, also, through rock a distance of 200 feet, having a sectional area of 84 square feet.

A new air shaft is in progress of sinking for this colliery for the purpose of enlarging the volume of air. Its size is 12x30 feet, and it was at a depth of 300 feet at the end of the year.

At the Nottingham colliery a great improvement has been made by the introduction of compressed air to run the underground pumps, instead of steam. There are 8 pumps used in this mine, and the steam necessary to run them heated the air to an almost intolerable degree. The two duplex Ingersoll air compressors, with Corliss engines, were located on the surface. Their size is 28x34 $\frac{1}{4}$ x48 inches, having a capacity for producing 11,000 cubic feet of free air per minute. One pair furnishes sufficient air to run the 8 pumps and one is operated during the day and the other during the night. The farthest pump is at a distance of 7,200 feet from the compressors. The air pipe to the first pumps is 14 inches diameter, and from there to the other pumps 12 inches. They are working satisfactorily, and the temperature of the mine ventilation has been greatly reduced.

At the **Wanamie**, No. 18, colliery a short tunnel was driven from the Baltimore to work the Cooper seam. Its size is 7x12 feet, and its length 175 feet.

Improvements by the Delaware and Hudson Canal Company.

At the No. 2 Baltimore colliery a new underground slope was driven a distance of 450 feet on a dip of 20 degrees to work the coal of the red ash seam below the level of the shaft.

At the No. 3 Baltimore they are sinking an underground slope on the red ash seam and it was down a depth of 600 feet at the end of

Lehigh and Wilkes-Barre Coal Company.

Hellenback No. 2 Colliery—

Return airway in rock from the Diamond basin; 12x8x400 feet.

No. 2 Red Ash slope being sunk in coal in the bottom split vein.

Annex on east and west side of breaker for the preparation of stove and chestnut coal.

South Wilkes-Barre No. 5 Colliery—

No. 1 airshaft has reached the vein; 37x12x650 feet.

Tunnel has been driven from Stanton to Hillman vein.

Rock slope finished from Hillman to Baltimore veins and second openings in rock finished to same.

New fan, 35 feet diameter, has been erected at No. 5 shaft.

Erected 250 horse power Stirling boilers.

Erected 500 horse power National boilers.

Erected 470 feet of 8-inch steam line to fans.

Sugar Notch No. 9 Colliery—

Main airway enlarged to 90 square feet; 1,050 feet in length.

Ross slope extended in rock 120 yards.

Tunnel, Twin to Ross veins.

Lance No. 11 Colliery—

Rock slope to Ross veins finished; sunk a distance of 400 feet this year.

No. 2 airshaft completed to Ross vein, and second openings are now being driven to connect with the rock slope workings.

No. 12 plane partly in coal and partly in rock has been finished.

No. 2 slope in coal has been finished.

Erected 250 horse power National boilers.

Erected 430 feet extra steam line to fans.

Nottingham No. 15 Colliery—

The Ross slope is being extended in rock through the anticlinal.

The Red Ash No. 3 slope is being extended in coal.

Erected one 24 feet by 8 feet Guibal fan on No. 1 airshaft.

Erected 300 horse power Stirling boilers.

Erected 4,000 feet 8-inch steam lines to fans.

Wanamie No. 18 Colliery—

No. 5 slope is being sunk in coal in the Ross vein.

Two bore holes, 200 feet deep each, have been put down for hoisting and pumping purposes.

No. 19 slope has been sunk in coal almost to the basin.

Erected one pair geared engines, 18x30-inch, with 8x10-foot drums.

Rock airway, Baltimore to Five Foot, 20 yards. Tunnel from bottom to top split red ash, 10 yards. Steel head frame at shaft.

Jersey Colliery.—Rebuilt Jersey breaker to screen culm banks of collieries No. 6 and No. 8.

Sugar Notch Colliery.—Steel head frame at shaft. New trestle from head frame to breaker.

Lance Colliery.—Tunnel from Cooper to Five Foot, 55 yards. Tunnel from Baltimore to Cooper, 35 yards. Rock airway, Baltimore to Cooper, 35 yards. Pair of 18x30-inch engines erected at No. 2 airshaft for operation of Red Ash plane.

Wanamie Colliery.—Tunnel, Baltimore to Cooper, 20 yards. Annex to breaker to secure better preparation and increase output. Two hundred and fifty horse-power Babcock & Wilcox boilers.

Maxwell Colliery.—Rock airway, Ross to Baltimore, 50 yards; 30x48-inch Corliss engines for Red Ash shaft. Two hundred and fifty horse-power Babcock & Wilcox boilers.

Improvements by the Delaware and Hudson Company, 1899.

Baltimore No. 2 Colliery.—No. 5 slope in Red Ash vein now down 1,300 feet and probably in basin; 820 feet driven in 1899. No. 1 tunnel from bottom split, Red Ash to top split, 307 feet long. Rock return airway for No. 1 tunnel, 87 feet long. One Ingersoll air compressor 20x18x30 inches. Air used for 10x12-inch engines on plane in Red Ash vein carried down bore hole 630 feet long at Pine street.

Baltimore Tunnel, No. 4 Shaft.—Completion of No. 5 slope in Red Ash vein, 1,600 feet long. Now in operation. Engines, pair 18x36-inch on surface, in stone engine house, 20x40 feet. Rope runs through bore hole. Boiler plant, three locomotive type boilers, 60x23 feet 3 inches in brick boiler house, 46x60 feet. This plant displaces the twelve cylinder boilers at mouth of tunnel and one locomotive boiler at Pine street. No. 6 slope, Red Ash vein, now down 1,000 feet.

Baltimore Slope.—No. 3 slope in Red Ash vein extended. Now down 1,700 feet and in basin; 300 feet driven in 1899. Endless rope haulage, 900 feet long, transporting coal from head of slope to foot of shaft. Engines, 10x10 inches, located at head of shaft. Ropes carried down pump shaft. The track gauge was changed in July, 1899, from 4 feet 8½ inches to 3 feet.

Conyngham.—No. 6 plane, Abbott vein, now up 1,400 feet, still driving. No. 7 plane, Kidney vein, now up 1,020 feet, completed. No. 2 slope, in Baltimore vein, down 900 feet in basin. The air shaft at main shaft has been retimbered and relined, as has the one at Hillman shaft. One Ingersoll air compressor, 20x18x30 feet. Air pipes passes down shaft to Hillman vein, where the air is used to operate two hoisting engines, 10x12 feet, and one pump, 24x10x24 feet.

Wanamie Colliery.—Tunnel top to bottom split, Baltimore, 44 yards. Tunnel Red Ash to Ross, 85 yards.

Maxwell Colliery.—Opening Red Ash vein in deep shaft. Two tunnels from bottom to top split Red Ash vein, each 30 yards. Remodelled portion of breaker and installed jigs. Two hundred and fifty horse-power Babcock & Wilcox boilers installed.

Improvements by the Delaware and Hudson Company During the Year 1900.

Baltimore Slope—Sinking No. 5 shaft, which is the old Meadow shaft, enlarged from 9 feet 6 inches x 19 feet to 12x28 feet from surface to Baltimore vein, 385 feet. This shaft will be continued in solid, same size to Red Ash vein.

Baltimore No. 2.—No. 6 slope, in Red Ash vein, sunk 700 feet, operated by 10x12 inch engines, with air, only temporary.

Washery relieving breaker and saving small sizes. Refuse is taken down a new 10-inch bore hole 530 feet deep to Red Ash vein.

Baltimore Tunnel.—No. 6 slope, Red Ash vein, extended 800 feet, with a total depth of 1,400 feet.

No. 10 plane completed 3,300 feet, and is operated by pair of 16x36 inch engines, the rope running through bore hole 132 feet deep. New engine house, brick, 20x40 feet, for No. 10 plane engines.

Conyngham.—No. 6 plane, in Abbott vein, now up 1,450 feet.

No. 2 slope, in Baltimore vein, down 900 feet, completed.

Rope haulage operating No. 6 Abbott and No. 7 Kidney planes and delivering coal to foot of No. 1 Hillman slope. Operated by 14x30 inch engines, located on surface, ropes running through 8-inch bore hole, 477 feet deep, to Hillman vein. Haulage is 4,750 feet long.

Plymouth No. 1.—This shaft is completed to the Bennett vein. Plymouth pumping plant.

Another pump room, 22x54 feet, stone side walls and brick arch, is completed.

A compound pump steam cylinder, one 26-inch and two 38-inch, with three plungers 11x48 inches, built by the Dickson Manufacturing Co., has been set up, and will soon be in running order. This pump has a capacity of 3,000 gallons per minute.

New fan 10x28 feet, brick house 48x48 feet.

Fan driven by two engines, 16x36 inches, to ventilate Plymouth No. 2, Red Ash vein.

Plymouth No. 2.—New set hoisting engines, 26x48 inches, with half cone drums. Engine house brick, 42x38 feet.

Washery, relieving breaker and saving small sizes; refuse is taken down a new 10-inch bore hole, 600 feet long, to Bennett vein. No. 13 tunnel to top split in 200 feet; still driving.

A second opening from the Five Foot to the Stanton seam, for the purpose of ventilation.

Wanamie No. 18.—Erection of ten double blocks of houses for the use of employes.

A return airway from the Red Ash to the Ross seam at No. 19 Slope, for the purpose of ventilation.

Maxwell No. 20.—Erection of a forced fan draft system in shaft boiler house.

Erection of new engine house, and installation of one pair of 24"x48" double drum friction engines for operating No. 6 Baltimore Slope and No. 7 Red Ash Slope.

Improvement by the Lehigh Valley Coal Company During 1902.

Dorrance Colliery.—An 18 degree rock plane, 375 feet in length, for haulage, has been driven from the Baltimore to the Five Foot seam. Also, a 30 degree rock plane, 225 feet long, for a second opening.

A slope has been extended in the Hillman 300 feet from the crown of the Cemetery anticlinal into the North basin.

A battery of six return tubular boilers of 150 horse power each. The boiler house has been equipped with duplicate feed pumps and forced draught fans.

The tower over the main hoisting shaft was rebuilt.

Franklin Colliery.—No. 8 Slope in top split of Red Ash seam was extended 310 feet, and a rope bore hole, 340 feet in length, completed from the surface to the head of the slope.

The bottom lift, Red Ash gangway, has been reopened for the extension of the unfinished tunnel to the Ross seam.

The head frame and fan at Red Ash second opening have been rebuilt.

A washery is under construction for the preparation of coal from the culm banks.

Conyngham.—No. 4 tunnel, 348 feet long, driven from Abbott to Snake Island seam.

No. 5 tunnel, 108 feet long, driven from Abbott to Snake Island seam.

Three-inch drainage bore hole, 314 feet deep, from Hillman sump to Baltimore seam, to drain water to shaft sump.

Baltimore No. 5.—An entirely new colliery plant, known as Baltimore No. 5, including a 2,000-ton breaker, was built during 1901, and began operations January 1, 1902. This plant prepares the coal from Baltimore tunnel and Baltimore No. 2 workings, which latter breaker was burned on January 26, 1901. The coal is transported overland to the breaker, on a surface railroad, also built

LEHIGH AND WILKES-BARRE COAL COMPANY

Lance Colliery

Outside.—Duplex air compressor, simple steam, compound air; forced fan draft system for boilers, and addition to new boiler house.

Inside.—No. 18 tunnel, Red Ash to top Red Ash, 15 yards. No. 19 tunnel, Red Ash to top Red Ash, 15 yards. No. 20 tunnel, Red Ash to top Red Ash, 15 yards. No. 21 tunnel, Cooper to Five Foot, 50 yards.

Nottingham Colliery

Outside.—Started erection of new breaker; shaft hoisting engines; No. 1 slope engines and No. 2 slope engines placed on new foundations, and new houses erected for the same; colliery supply store; colliery shop; extended brick compressor house, for accommodation of three stage air compressors.

Inside.—Eighteen inch by 30 inch hoisting engines and engine room in rock, on No. 2 slope anticlinal. Pumping plants on 5th, 7th and 9th, Red Ash levels, remodeled with the addition of two simple duplex pumps and two bore holes for water from Ross to Red Ash, thereby concentrating all pumping in Red Ash vein.

Reynolds Colliery

Outside.—Five hundred H. P. battery B. & W. boilers.

Inside.—No. 8 Rock plane, through Red Ash fault, 125 yards.

Wanamie

Outside.—Five hundred H. P. battery B. & W. boilers.

Inside.—Pumping plant No. 6 Red Ash slope; extending No. 6 slope through rock, 100 yards; No. 11 tunnel, Baltimore to Red Ash across basin No. 2 drift, 190 yards.

PARRISH COAL COMPANY

Parrish Colliery

One 8 inch bore hole for flushing; one crusher for crushing slate and bone, for flushing; one pair breaker engines; No. 6 slope extended 300 feet; intake air shaft, concreted from surface to rock; one 30,000 gallon water tank; one 20,000 gallon water tank.

Buttonwood

Tunnel driven from Kidney to Abbot vein about 560 feet; one 35 foot fan, also fan engine 22x36; one saw engine, etc., for cutting prop timber, etc.; outside railroad, plane and engine, for handling timber, etc., from railroad to head of shaft; concrete wall erected around coal shaft head, also around boiler house; one 30,000 gallon water tank.

high water in the Susquehanna river, which has resulted so disastrously to this colliery heretofore.

Woodward Colliery

New steel tower over No. 1 shaft, installation of endless rope haulage on breaker trestle and to convey empty cars to No. 2 shaft, new brick and concrete pump room, lamp room and fire-boss shanty near the entrance of No. 1 shaft.

Breaker repairs consist of the installation of mechanical pickers, elevators, rollers, etc., together with a new 12 foot dust fan, which has been quite an improvement in this breaker.

Haulage roads and return airways were enlarged and widened, increasing the area of some of these openings from 48 square feet to 90 square feet.

No. 2 shaft was retimbered during the year to within 250 feet of the surface. A brick partition has also been erected between the air shaft and hoistways in this shaft for a distance of 212 feet from the bottom. This work will be completed as weather conditions will permit.

LEHIGH AND WILKES-BARRE COAL COMPANY

Lance No. 11 Colliery

Outside.—Colliery shop.

Inside.—Rock plane airway Cooper to Five Foot for No. 21 tunnel return, 20 yards; 10 inch bore hole Stanton to Red Ash for pumping plant; No. 22 tunnel Cooper to Cooper, 26 yards; rock plane airway Stanton to Hillman for No. 14 tunnel return, 40 yards; No. 11 tunnel extended to Cooper, 95 yards.

Nottingham No. 15 Colliery

Outside.—Oil house; three stage air compressor; 2,000 H. P. water tube boilers; fuel conveyor.

Inside.—Compressed air haulage motor for shaft level haulage.

Reynolds No. 16 Colliery

Inside.—Tunnel turnout on No. 8 plane, 36 yards.

Wanamie No. 18 Colliery

Outside.—Supply store; 24 foot ventilating fan No. 2; locomotive house; 24x48 inch hoisting engines, No. 6 slope; 10 double dwellings.

Inside.—Rock plane airway Red Ash to surface, 175 yards; No. 12 tunnel Ross to Baltimore, 105 yards; No. 13 tunnel Ross to Ross.

Inside.—Two bore holes from surface for steam pipes, two car hoists at foot of shaft, two compressed air motors for haulage.

Wanimie No. 18 Colliery

Inside.—No. 7 rock slope Baltimore to Ross, No. 12 tunnel extended, Baltimore to Cooper.

DELAWARE AND HUDSON COMPANY

Plymouth No. 2

No. 10 plane, Top split Red Ash, extended 800 feet.

No. 6 slope, Stanton, extended 300 feet.

No. 8 slope, Hillman vein, extended 150 feet.

No. 12 Rock plane, Stanton to Kidney vein, driven 330 feet.

Eight inch rope hole for No. 7 Stanton vein plane, 246 feet deep, and 12½ inch x 15 inch engines installed.

Eight inch culm hole and crusher plant for flushing refuse into the mines.

Plymouth No. 3

Crusher plant installed, to break up refuse from breaker to be flushed into the mines.

Plymouth No. 4

No. 10 plane, Ross vein, extended 150 feet, and 10 inch x 12 inch engines installed for operation of same.

No. 9 plane, Bennett vein, driven through old workings 600 feet, and pair of 10 inch x 13 inch engines installed for operation of same.

Crusher plant installed for flushing purposes.

Boston

No. 12 Rock plane, from Upper to Lower Ross, 250 feet.

No. 9 plane, Top split extended 315 feet.

No. 10 plane, Top split extended 100 feet.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Avondale

Extensive breaker improvements made at this colliery. When repair work was begun on this structure it almost became necessary to rebuild the entire building, costing a large amount of money, with the result that the company has what might be considered a modern breaker on a small scale.

The work of changing the location of steam boilers from the Ross shaft to the main shaft will be completed early during the year 1906.

Connection is being made with the colliery to the Nanticoke Power Station, which will generate electric current for operating locomotives and hoists in this mine.

A 7x12 rock tunnel connecting Red Ash and Ross vein, 743 feet long on a 5 per cent. grade has been completed.

Wanimie

With the intention of preventing mine fires this company has erected in its inside pump rooms and engine rooms, brick and concrete walls with iron I-beams.

Truesdale Colliery

A 12 foot ventilating fan has been erected on Truesdale tunnel. This fan is driven by a 30 H. P. induction electric motor and gives very good satisfaction.

LEHIGH AND WILKES-BARRE COAL COMPANY

Sugar Notch No. 9., Outside

Brick power house, Colliery shop, brick oil house, new breaker finished, 24 inch by 42 inch hoisting engines and brick house. Brick locomotive house.

Inside

Number 17 Tunnel extended to Baltimore Tunnel, Ross to Twin. Compound duplex pump and room.

Wanamie No. 18., Outside

Addition to mule barn at No. 19, new mule barn at No. 18. Brick oil house.

Inside

Number 15 Tunnel Baltimore to Cooper. Number 16 Tunnel Baltimore to Cooper. Number 17 Tunnel Baltimore to Red Ash to Top Red Ash. Number 18 Tunnel Red Ash to Top Red Ash.

LEHIGH VALLEY COAL COMPANY

Warrior Run Colliery

A new Washery was completed, capacity 800 tons per day. It was built for the purpose of reclaiming the old culm banks, also as an addition to the breaker to handle the wet or mud screen coal from the mines. The washery is complete with conveyors, elevators, shakers and mechanical pickers, with Williams crusher and silt outfit for handling the refuse to the mines.

A 12 inch steam pipe bore hole completed from the surface to the inside pump, and new steam line from boiler house down said hole. This dispenses with the old steam pipe line down to No. 1 Slope.

Several air bridges have also been erected to improve the ventilation.

WEST END COAL COMPANY

West End Colliery.—One 7 x 12 foot tunnel at Lee 200 feet long, from No. 3 to No. 2 vein.

One 7 x 12 foot tunnel, Sand drift, 275 feet long from Ross to Red Ash.

One 7 x 12 foot tunnel on No. 1 slope, Long drift, 400 feet long, through fault.

One 7 x 12 foot tunnel, Long drift, 100 feet long, Ross to Ross split.

One 5 x 5 foot drainage tunnel, in Sand drift basin, 500 feet; not finished.

The Red Ash vein was opened in the extreme west end of Pricilla Lee basin.

LEHIGH AND WILKES-BARRE COAL COMPANY.

Wanamie No. 18 Colliery, Inside.—No. 21 Tunnel, Bottom Red Ash to Top Red Ash.

No. 22 Tunnel, Bottom Red Ash to Top Red Ash.

No. 23 Tunnel, Bottom Red Ash to Top Red Ash.

ALDEN COAL COMPANY

Alden Colliery.—During the year a rock slope has been driven from the Bennett to the Red Ash vein, 740 feet. This slope will be the second opening for the lower workings in No. 2 shaft.

A 24,000 gallon concrete tank for hot water boiler feed has been erected at No. 2 shaft boiler house.

An Ames Multipolar generator has been installed for lighting the various buildings around the colliery.

A ten-foot fan has been put in the breaker for removing dust, and five spiral pickers have been added to the breaker equipment.

A 1,200-gallon centrifugal pump installed on the wagon road near water dam, in a brick and concrete building, to furnish water for coal washing purposes.

Rock crusher installed to pulverize the refuse coming from the breaker, so that it can be flushed into the old workings.

A new 30 x 60 concrete and brick wash-house was erected.

A brick and concrete engine house for electric hoist on No. 6 slope was also completed.

A combination lamp room, mine foreman and fire boss office, was completed during the year.

A 1,000-gallon fire pump was installed.

Brick and concrete locomotive house was erected and the original wooden building removed.

One 300 H. P. Babcock and Wilcox boiler has been added to the boiler plant.

The work of installing a 500 KW Rotary converter in Sub-station is under way. This machine will furnish power for additional locomotives that are to be installed during the year, all of which was authorized in 1909.

Inside.—Rock tunnel driven from Ross to Twin vein, No. 2 slope, Truesdale tunnel; also one short rock tunnel on 30 degrees pitch for second opening and ventilation.

New concrete and steel mule barn is under way and will soon be completed.

The following rock tunnels have been driven inside for development, second opening and ventilation purposes.

Tunnel No. 2 slope, Ross to Twin vein, 7 x 12 by 455 feet long.

Tunnel No. 1 shaft, Ross to Forge vein, 7 x 12 by 350 feet long.

No. 1 slope and airway Mills to George has been completed, 7 x 12 by 350 feet long.

Tunnel Forge to Baltimore for second opening, 7 x 12 by 150 feet long.

Tunnel No. 2 slope, Ross to Red Ash, 7 x 12 by 260 feet long.

In addition, eight concrete and steel air bridges have been erected to provide for the proper ventilation of the workings.

The following electrical operating pumps have been installed to drain the various parts of the workings:

One 800 gallon centrifugal pump.

One 300 triplex pump for 300 horse power motor.

One 700 gallon centrifugal as an auxiliary to pump at foot of shaft.

Four small 250 portable truck pumps have also been installed at various points.

LEHIGH AND WILKES-BARRE COAL COMPANY

Wanamie Colliery.—Two tunnels, one from the Baltimore to the Cooper vein, and one from the Ross to the Baltimore vein, were completed, and No. 19 tunnel was extended from Ross to Ross vein.

ALDEN COAL COMPANY

Alden Colliery.—At No. 2 shaft a concrete block wash-house 18 x 22 feet, with hot and cold water shower baths, equipped with steel lockers, was erected.

their position when the fan is exhausting air from the mine. When changed to the position indicated by the dotted lines the fan then becomes a blow fan. This is the first and only fan of its kind in this district.

- One 26 by 24-inch Ridgway side crank engine.
- One 350 K. W. D. C. generator.
- One 4-panel slate switchboard.
- One double drum Vulcan electric shaft hoist, with solenoid brake, automatic control and overwind switch.
- Two 8-inch by 12-inch cement-lined Aldrich triplex pumps.
- Two 7-ton electric locomotives.
- One Ingersoll-Rand compound air compressor.
- One 8-foot Jeffrey fan, driven by a 100-H. P. Crocker-Wheeler motor, double inlet exhaust reversible.
- One 54-inch booster fan, electric-driven, direct on line.
- One hundred steel mine cars.
- One rope haul and car hoist, electric-driven, Lee shaft.
- The following tunnels have been driven.
- No. 10 tunnel, 500 feet, Lee No. 1 to No. 4 vein across south rise.
- No. 11 tunnel, 400 feet, Lee No. 1 to No. 4 vein across north rise.
- No. 21 tunnel, 250 feet, Long drift, Red Ash split to Ross.
- No. 22 tunnel, 50 feet, Long drift, Ross to Ross Split.
- No. 23 tunnel, 50 feet, Long drift, Ross to Ross Split.
- No. 24 tunnel, 150 feet, Long drift, R. A. Split. Built a concrete supply house 20 by 40 feet and a concrete boiler house 30 by 70 feet at No. 2 plant.

LEHIGH AND WILKES-BARRE COAL COMPANY

Wanamie Colliery.—Outside: Gasoline locomotive house. Wash house at No. 19.
 Inside: No. 8 tunnel extended to Hillman.
 Started remodeling pumping plants in Nos. 3 and 6 slopes.
 Gasoline locomotives installed.
 No. 27 tunnel, Red Ash to Ross.

MINE FOREMEN'S EXAMINATIONS

The examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held April 4 and 5 in the High School Building, Nanticoke. The Board of Examiners was composed of Joseph J. Walsh, Mine Inspector; F. H. Kohlbraker, Superintendent; Frank Kettle and Joseph Dzialdowski, Miners.

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

Mine Foremen

Daniel Davis, Jenkin Evans and James M. Williams, Nanticoke; Peter Murphy, Glen Lyon; Peter F. Mitchell, Shickshinny.

Assistant Mine Foremen

Charles Adamski, Thomas J. Arnott, Michael Gzemski, Albert R. Lewis and John W. Jones, Nanticoke; Michael Chebro, Rhone; Nelson N. Nichols, Scranton; Edward Speary, West Nanticoke; William R. Talbot, Shickshinny.

The parallel tunnel being driven from the Twin to Red Ash vein is about completed. It will serve as a second opening and return for the seams intervening between this vein and the Bottom Red Ash split.

The surface improvements consist of a brick and concrete powder house, a brick and concrete oil house, and a brick and concrete foreman and assistant foreman's office and lamp-room, all of which are considered fireproof.

Installed in the outcrop of Red Ash vein a 12-foot open-end running fan, electrically driven by belt connection.

LEHIGH AND WILKES-BARRE COAL COMPANY

Wanamie Colliery.—Completed Nos. 3 and 6 slope pumping plants.
No. 12 tunnel extended to Stanton.
No. 29 tunnel driven Baltimore to Cooper.
No. 28 tunnel driven and outside plane.

ALDEN COAL COMPANY

Alden Colliery.—One set 300 horsepower Harrisburg boilers.
New boiler house at No. 2 shaft.
One 20 by 12½ by 20 by 24 inch Norwalk air compressor.
One 7 ton Milwaukee gasoline locomotive.
One 12 by 6 by 12 inch Goyne pump.
Two 8½ by 12 inch Webster, Camp and Lane friction hoists.

PROSECUTIONS FOR VIOLATIONS OF THE MINE LAWS

December 18. Joe Wintergrass was prosecuted for swearing falsely to the age of his son. He entered a plea of guilty and was sentenced to pay the costs.

December 18. Frank Lavopis was prosecuted for swearing falsely to the age of his son. He entered a plea of guilty and was sentenced to pay the costs.

Commonwealth of Pennsylvania vs. Stackhouse Coal Company

The Stackhouse Coal Company erected a new breaker in Shickshinny, and, in violation of Section 2, Article 5, Act of June 2, 1891, were erecting a steam heat plant with boilers for the generation of steam less than 50 feet from said breaker. Under the law I served the required notice on the Company and notified them not to proceed with the erection of said steam plant, as, when operated, it would be a direct violation of the law.

I petitioned the court to issue an injunction to restrain the Stackhouse Coal Company from erecting said steam plant and generating steam therein nearer than 100 feet from said breaker. The Company in their answer to bill of complaint denied "that the steam plant in question when erected less than 50 feet from said breaker would be a violation of Section 2, Article 5, Act of June 2, 1891."

The plaintiff and the defendant agreed "that the Bill of Complaint and the Answer thereto should be submitted to the Court of Common Pleas of Luzerne County for judgment thereon, and that they would be bound by the decision of the court.

LEHIGH AND WILKES-BARRE COAL COMPANY

Wanamie Colliery. Inside: Extended No. 26 tunnel from Ross to Baltimore; No. 30 tunnel from Cooper to Hillman; No. 35 tunnel from top to bottom Baltimore; tunnel from Kidney to Kidney, No. 8 tunnel west; No. 34 tunnel from Hillman to Kidney; No. 31 tunnel from Kidney to Abbott; Nos. 32 and 33 tunnels from top to bottom Baltimore; No. 36 tunnel from Ross to Baltimore.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in the High School Building, Nanticoke, April 22 and 23. The Board of Examiners was composed of Joseph J. Walsh, Mine Inspector; F. H. Kohlbraker, Superintendent; Frank Kettle and Joseph Dzialdowski, Miners.

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

MINE FOREMEN

Frank Kettrick, Robert C. Davis, Benjamin Davies, Edwin C. Curtis, Nanticoke; James Bryan, Alden; David M. Phillips, Glen Lyon; Gaza F. Kaiser, Shickshinny.

ASSISTANT MINE FOREMEN

Rhys Evans, Thomas J. Evans, Murray S. Grant, Francis Higgins, David G. Jones, Edgar Jones, John Joseph Gruyger, Matthew Lacey, Thomas Millington, Thomas Murphy, Joseph Maza, John Palenchar, Herbert Swales, James Thompson, Albert Turley, Ernest E. Turner, John Wadzinski, Nanticoke; Edward C. Barrett, William H. Craig, Frank Bizenski, Fred Horlacher, John J. McGeady, Thomas W. Morgan, Thomas Ira Morris, James Phillips, **Wanamie**; John W. Bryan, James G. Jeffries, Fred Morgan, Alden; Martin Considine, Wilkes-Barre; Thomas Farrall, Richard Gill, Parsons; Hertz H. Harter, Mocanaqua; John Matusavage, Bolish Mashinski, Glen Lyon; George W. Reng, Shickshinny; Thomas Thomas, Shamokin; David J. Williams, Warrior Run.

under way for the development of this property. This colliery is the only one in operation in the Anthracite Coal Fields that has shipped to market over one million tons of coal in two successive years.

SUSQUEHANNA COAL COMPANY

Colliery No. 5.—Placed in No. 8 tunnel 50 sets of steel timber. Placed in No. 6 lift, No. 4 slope, 25 sets of steel timber.

Colliery No. 6.—Installed a shortwall electric mining machine. At the head of No. 7 shaft a new steel head frame was built to replace the wooden structure. A wash-house was built during the year and a new fire alarm system was installed in the breaker.

Colliery No. 7.—A rock airway, for the purpose of ventilation, from the lower workings of the south shaft to the surface, was driven 259 yards during the year.

LEHIGH AND WILKES-BARRE COAL COMPANY

Wanamie Colliery.—Tunnel for ventilation driven from Top to Bottom Baltimore, No. 24 tunnel east. No. 37 tunnel driven from Top Baltimore to Hillman. Tunnel driven from Hillman to Hillman, No. 12 tunnel west. No. 13 slope extended Top Baltimore to Baltimore.

LEHIGH AND WILKES-BARRE COAL COMPANY

Wanamie Colliery.—No. 36 tunnel extended from the Baltimore No. 12 tunnel extended from the Hillman seam. No. 38 tunnel driven from Ross to Ross. No. 40 tunnel driven from Red Ash to Red Ash. No. 39 tunnel driven from Hillman to Kidney.

ALDEN COAL COMPANY

Alden Colliery.—A tunnel 410 feet long has been driven from the Red Ash to the Ross vein in No. 2 shaft workings. One 10 inch by 14 inch Vulcan hoist has been installed on Red Ash slope. A Chambersburg steam hammer and a Wiley and Russell bolt machine have been added to the shop equipment.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in the Susquehanna Coal Company Building, Nanticoke, May 18 and 19. The Board of Examiners was composed of Joseph J. Walsh, Mine Inspector; F. H. Kohlbraker, Superintendent; John Keating and Albon Gonsoski, Miners.

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

MINE FOREMEN

Thomas J. Arnott, Daniel P. Bolton, John W. Jones and Mark Lloyd, Nanticoke; Martin Burns, Evan T. Jones, Charles R. Price, Glen Lyon; George Hutchinson, William L. James, Concrete City; Edward Dearing, Kingston; Thomas Fenton, Dorranceton; Lewis Keating, Edwardsville; Thomas Murphy, Wanamie.

ASSISTANT MINE FOREMEN

Daniel Blackwell, John Clark, John T. Davies, Joseph Hocken, James H. Jenkins, Daniel Jones, Reese Jones, Thomas Klugo, Thomas X. Palmer, Louis Ramlow, Thomas H. Roberts, William H. Ruck, George Ruck, John H. Thomas, Jr., Charles B. Trenery, Henry L. Watkins, Nanticoke; James Connor, Larkesville; David Jones, Concrete City; John E. Richards, Warrior Run; Martin Zawatzki, Glen Lyon.

Installed 25 new steel body mine cars at colliery.

Placed 139 sets of steel timber in the North shaft.

No. 59 tunnel, from Middle Ross to Top Ross seam, South shaft, was driven 45 1-3 yards during the year.

No. 62 tunnel from Mills to Hillman seam, North shaft, was driven 35 yards.

Installed in the North shaft 3 Westinghouse 8-ton locomotives.

At No. 8 shaft, electric sub-station was erected.

An air compressor 14 by 9 by 12 was installed.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Auchincloss Colliery.—Outside: Renewed cross-arms carrying high tension lines. Installed two 27-ton steam locomotives to transport coal from Auchincloss to Loomis.

Inside: Rock tunnel, Baltimore to Mills vein, 72 feet long, was driven.

Installed electric hoist, No. 24 tunnel, Baltimore vein, No. 2 shaft.

Rock tunnel from Hillman to Mills vein, 150 feet long, was driven.

Installed one 7-ton reel locomotive, Ross vein, No. 2 shaft.

Installed one 7-ton locomotive, No. 23 tunnel.

Bliss Colliery.—Outside: A new sprinkling system was installed in the breaker.

Air shaft from the surface to Mills seam was enlarged and provided with iron stairway.

Inside: No. 15 slope was driven from Ross to Ross vein through fault, 159 feet long.

New pump station at Baltimore landing was completed, and one Scranton pump, size 28 by 12 by 36, capacity 1,200 gallons per minute, was installed.

LEHIGH AND WILKES-BARRE COAL COMPANY

Wanamie No. 18 Colliery.—Outside: Completed during the year, 18 by 30 inch tower hoisting engines and brick house. Brick colliery shop. 24 by 42 inch hoisting engines and brick house, No. 2 slope.

Inside: No. 36 tunnel extended Baltimore to Baltimore; No. 26 tunnel extended Baltimore to Kidney; No. 38 tunnel extended to Ross; No. 6 slope extended Bottom to Top Red Ash; tunnel driven Hillman to Top Hillman.

ALDEN COAL COMPANY

Alden Colliery.—Rock plane driven from Cooper to Hillman; air shaft driven from Cooper to Hillman; rock slope driven from Cooper to Bennett in the North basin.

One pair 15 by 18 inch geared Vulcan engines installed for a tower hoist, at the breaker.

An 18 by 30 by 10 by 36 compound duplex Goyne pump, with a 10 by 14 by 18 condenser, has been installed at the bottom of No. 1 shaft.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Nanticoke, June 6 and 7. The Board of Examiners was composed of Joseph J. Walsh, Mine Inspector; F. H. Kohlbraker, Superintendent; John H. Keating and Albon Gonsoski, Miners.