

SENECA COLLIERY.

This colliery is located in Pittston borough, and situated one-fourth of a mile south-east of the Susquehanna river. The opening consists of a slope three hundred and thirty feet long, driven at an angle of 19° ; the opening is 6 by 8 feet; it is operated by the Pittston and Elmira coal company. Jos. Cool is general mine superintendent and Israel Watkins is mining boss.

Description.—There is a breaker connected with these mines, situated about three hundred feet away; they mine and prepare about three hundred and twenty-five tons of coal per day; they employ 33 miners, 33 laborers, 23 drivers, 6 door-boys and 22 company men in the mines; 27 slate pickers, 4 head and plate men, 3 drivers, 11 company men, 4 mechanics and 1 boss outside: in all 167 men and boys; there is a plane in operation in the mines; length 220 feet. They are working the Pittston and Checkered veins; average thickness of the Pittston 10 feet, and of the Checkered $6\frac{1}{2}$ feet; they work headings 10, air-ways from 12 to 15, and chambers 24 feet wide; they leave pillars in each vein about 15 feet wide to sustain the roof; they leave cross-entrances in the Pittston about 30 feet, and in the Checkered vein about 25 feet apart, for the purpose of ventilation; the roof is 3 feet of slate next the coal and the rest is good rock. The mines are in a good working condition.

Ventilation.—Ventilation in the Checkered vein is produced by means of a furnace, and in the Pittston vein it is produced by the action of the atmosphere; the intake for both veins is located in main opening; the outcast for the Checkered vein is located in furnace air shaft; the outcast for the Pittston vein is located in Ravine shaft; the area of the intake is forty-eight feet and the area of the outcast is twenty-six feet; the amount of pure air is 25,000 cubic feet per minute; there is some inflammable gas evolved in the mines; the mines are examined every morning before men go to work and every evening to see that the main doors are all closed; the main doors are hung so that they will close of their own accord: they have attendants at the main doors; they have double doors on main traveled roads and an extra one in case of an accident to any of the others; the air is circulated to the face of the workings in one volume in both veins; the amount of ventilation has been measured and reported; ventilation is good.

Machinery.—They use one breaker engine of 30-horse power and one hoisting engine at the slope of 40-horse power; they have flanges of sufficient strength and dimensions attached to their hoisting drums; the boilers have been cleaned and examined and reported in good condition; they have a steam-gauge to indicate the pressure of steam.

Remarks.—They have furnished a map of the mines; in the Pittston vein they are connected with Ravine shaft, which can be used as a second opening, and the second opening for the Checkered vein is located sixteen hundred feet from the main opening; they have no house for men to wash or change their clothes in; the mining boss seems to be a practical and competent man; there are no boys working in the mines under twelve years of age; the engineers seem to be experienced, competent and sober men; they do not allow any person to ride on loaded cars in the mines; the parties having charge know their duty in case of death or serious accident; the breaker machinery is fenced and boxed off so that operatives are safe.

RAVINE COLLIERY.

This colliery is located in Pittston borough, and is situated one thousand feet south-east of the Susquehanna river; the opening consists of a shaft; it is eighty feet deep to the Checkered and one hundred and fifty feet deep to the Pittston vein; the opening is ten by sixteen feet; it is operated by the Pittston and Elmira coal company. Jos. Cool is general mining superintendent and Israel Watkins is mining boss.

Description.—There is a breaker over the shaft; they mine and prepare about three hundred tons of coal per day; they employ in the Pittston vein 10 miners, 10 laborers, 7 drivers, 2 door-boys and 6 company men, and in the Checkered vein 18 miners, 18 laborers, 7 drivers, 4 door-boys and 8 company men; 27 slate pickers, 6 head and plate men, 6 drivers, 12 company men, 5 mechanics and 1 boss outside: in all 147 men and boys; they are working a slope in the Checkered vein 250 feet long; they are working the Pittston and Checkered veins; average thickness of

the Pittston 10 feet, of the Checkered vein $6\frac{1}{2}$ feet; they work headings 10, airways 12 and chambers about 24 feet wide; they leave pillars about 15 feet wide to sustain the roof; they leave cross entrances twenty-five feet apart in the Pittston vein and thirty feet in the Checkered vein, for the purpose of ventilation; the roof contains about three feet of slate and the rest is solid rock; the mines are in a good working condition.

Ventilation.—Ventilation in the Checkered vein is produced by a furnace and in the Pittston vein by the action of the atmosphere. The intake is located on the main shaft for both veins; the area of intake is 160 feet; the upcast for the Checkered vein is in Furnace air shaft; the Pittston vein is connected with the Seneca slope; when the Seneca slope is the intake the main shaft is outcast; it reverses according to the temperature outside; the amount of pure fresh air is 18,000 cubic feet per minute; there is a little noxious gas evolved in the mines; the mines are examined every morning before men go to work and every evening to see that the main doors are all closed; the main doors are hung so that they will close of their own accord; they have attendants at main doors; they have double doors on main traveled roads and an extra one in case of an accident to any of the others; the air is circulated to the face of the workings in one split in each vein; the amount of ventilation has been measured and reported; ventilation is good.

Machinery.—They use one hoisting engine of 60-horse power and one breaker engine of 20-horse power; they have a metal speaking tube in the shaft; they have flanges of sufficient strength and dimensions for safety attached to the hoisting drums; the ropes, links, chains and connections are in good condition; the boilers have been cleaned and examined, and reported in good condition; they have a steam-gauge to indicate the pressure of steam.

Remarks.—They have furnished a map of the mines; the second opening for the Checkered vein is located about 200 feet from the main opening; they have a house for men to wash and change clothes in; the mining boss seems to be a practical and competent man; he has a fire boss to assist him; there are no boys working in the mines under twelve years of age; the engineers seem to be experienced, competent and sober men; the men walk in and out Seneca slope; the parties having charge know their duty in case of death or serious accident; the shaft landings are protected by safety gates; the breaker machinery is fenced and boxed off so that operatives are safe.

BEAVER MINES OR MORGAN'S SLOPE.

This colliery is located in Pittston borough, and situated about 2,000 feet south-east of the Susquehanna river. It was once a slope but is now a tunnel; it is operated by Beaver & Co., Danville. Daniel Edwards is general superintendent, Fred. Burget is mining boss and D. Davis is outside foreman.

Description.—There is a small breaker located about 150 feet from the mouth of the tunnel; they mine and prepare about 80 tons of coal per day; they employ 9 miners, 9 laborers, 5 drivers, 3 door boys and one company man in the mine; 2 slate pickers, 5 company men, 1 mechanic and 1 boss, outside; in all 36 men and boys; this mine is worked by one plane inside about 350 feet long; they are working the Checkered vein; average thickness $6\frac{1}{2}$ feet; they work headings 15, airways 18 and chambers 24 feet wide; they leave pillars about 12 feet wide to sustain the roof; they leave cross-entrances about 15 feet apart for the purpose of ventilation; the roof is good; the mine is in a good working condition; this mine is nearly worked out; they are getting coal wherever they can without any reference to system.

Ventilation is produced by the action of the atmosphere; ventilation is tolerably good.

Machinery.—There is no machinery required except for running the screens, &c. They use one breaker engine of 20-horse power.

was erected thereon. The engine is seventy horse power, connected directly to the shaft of fan. It is used to ventilate the slope workings which were opened the year before.

The Maltby shaft of this company resumed operations in December, 1888, after being idle for four years.

Delaware and Hudson Canal Company.—This company has erected a new breaker at the Delaware shaft, located at Mill Creek. It was started to prepare and ship coal in August, 1888. It is one of the largest and best equipped, with the most improved machinery for the cleaning and preparing of coal that there is in the valley. The shaft workings are ventilated by the old twenty-foot fan that was formerly in operation at Pine Ridge shaft.

At the Laurel Run mines of this company an underground tunnel was driven from the bottom to the top split of the Baltimore seam a distance of eighty feet, likewise an air shaft to ventilate the same a depth of twenty-four feet, which will give good ventilation to this portion of the workings.

Butler Colliery Company.—The Mosier shaft of this company has been sunk from the Marcy to the Powder Mill seam, a distance of three hundred and eighty feet. The air shaft was sunk the year previous, so that the both shafts are now connected in the bottom seam, and the ventilation restored in the proper direction.

The Twin main and air shafts of this company have been sunk to the Powder Mill seam, a distance of two hundred and sixty-three feet. A new fan fourteen feet in diameter was erected on the air shaft, connected directly with a horizontal engine of forty horse power.

The **Ravine shaft** of this company was sunk to the Powder Mill seam, a distance of five hundred and seven feet, which opens up a large field of good coal for this colliery. A new fan twenty feet in diameter was erected on this shaft, connected directly by a horizontal engine of seventy-five horse power to ventilate this seam. A new air shaft was started from the surface and sunk to the Marcy seam connecting both shafts in this vein, the air shaft not having reached the Powder Mill seam yet, the second opening has not been completed in this vein. This company has likewise built a new breaker to prepare and ship the coal mined in the Twin and Ravine shafts. It is situated close to the Susquehanna river, in the borough of Pittston. It is the largest breaker in the district, and has a capacity of fifteen hundred tons of coal per day, having the latest improved machinery for the preparing of coal for market. All the machinery is covered or fenced off according to law. The coal is taken from the shafts, by two locomotives to the breaker, over a trestling one mile long.

Hillside Coal and Iron Company.—At the Consolidated slope a new fan was erected on a new air shaft, sunk for the purpose of ventilation. It is a closed fan twelve feet in diameter, connected with a horizontal engine by belt gearing. This slope was ventilated by a fur-