THE TWIN SHAFT DISASTER.

About three o'clock on the morning of June 28, 1896, a dreadful disaster occurred in the workings of the "Twin shaft," located in Upper Pittston, and operated by the Newton Coal Mining Company. A general caving-in of the overlying strata took place, which caused the death of fifty-eight persons who were at work in the mine at the time. No other disaster in the Anthracite coal field, since the accident in the Avondale mine in 1869, has resulted in so great a loss of life as this.

In 1887 the Twin shaft was sunk from the Marcy seam to the Red Ash, the latter being a total distance from the surface of four hundred and thirty-four feet. When the hoisting shaft was approaching the Red Ash seam, an anticlinal was encountered, one side of the shaft passing through the same. (See map.) The headings were opened eastward and driven to the boundary line between them and the Phoenix mine workings. At about one hundred and fifty feet from the shaft the head of No. 1 slope was located, the total length of the slope being two hundred feet. At the head of this slope was placed a pair of small engines that hauled the coal from the foot of No. 1 slope to the shaft level. The distance from the foot of No. 1 slope to the head of No. 3 slope is 300 feet. No. 3 slope was driven down on what is called the "Bank Farm" property, owned by the Lehigh Valley Coal Company and leased to the Newton Coal Mining Company. The slope was driven a distance of one thousand feet to the basin. (See C on map.) The continuation of the slope was driven up the opposite pitch a distance of twelve hundred feet. At J on the map, the fifth vein or top split of the Red Ash vein was opened, the thickness of rock between the two veins being eleven feet, and the thickness of coal in the upper split being about four and one half feet. About ten acres of this vein or split had been worked, which workings are shown on the map in red. The vein being low, it was necessary for the miners to take up a part of the rock on the bottom to make room for the height of the cars. It was frequently found, in doing this, that the blasts would weaken the rock so much that it would break down into the chamber beneath. The rock overhanging the fifth seam was of such a hard character that the miners could not drill it with their tools. Hence it was that the bottom was taken up instead.

In February, 1896, a fissure was struck in the roof, which gave off considerable water and soft coal, which opening was six inches wide. On account of striking this fissure, mining in that locality was stopped and a bore hole was put down from the surface to test the

thickness of the rock. The bore hole showed one hundred and forty-six feet of sand and two hundred and fifty-seven feet of rock, making the total depth from the surface of the sixth seam four hundred and three feet. The bore hole showing ample covering, the work of mining in the vicinity of the fissure was resumed. At my visit on March 26th, I went around the faces of the workings with Mine Boss Lynott and Fire Boss McCormack. I examined the fissure and saw some water coming down from it, but not sufficient to create any anxiety or apprehension of danger. I visited it again on April 15, and went through the workings of the fifth and sixth seams. I did not see or hear any unusual disturbance of the overlying strata or the pillars. Everything was quiet. I talked with Mr. Lynott and Mr. McCormack in regard to the bad roof in some of the chambers of the sixth vein, but they did not mention anything to me about a squeeze in the mine, or of any indications of one.

On Sunday morning, June 28, 1896, at about four o'clock, I was notified that an explosion had occurred in the Twin Shaft. I immediately proceeded to the shaft and went down. I was surprised to find that a large cave-in had occurred, instead of an explosion, and that a large gang of men had been at work all night timbering to stop a squeeze, and that while doing so they had been entombed. Upon arriving at the foot of the shaft, I secured John McCormack, a brother of Fire Boss McCormack. We started down No. 2 slope, in the direction of the men, but were driven back by reason of the caving in of the roof. We then tried to go down No. 3 slope, but failed to get any farther than where the cars were standing on the slope, on account of falling roof. We next tried the barrier pillar, inside of No. 3 slope, but came in contact with a large body of explosive gas and were driven back. Returning to the foot of the shaft, I realized that the return air-bridge to the fan would have to be attended to, or it would be broken down and we should be driven from the shaft.

Getting the men organized with competent leaders, the work of standing props and building "cog" pillars was started, the men advancing as rapidly as possible, only to be driven back again and again. By perseverance and the use of all the precaution possible, the roof was in a measure secured about the foot of the shaft. And let me say here, that a more courageous set of men than those who volunteered that morning to work for the rescue of their fellow workmen it has not been my lot to meet. It would be impossible for me to give an adequate idea of the danger which attended the work. The pillars were crushing within fifty feet of the bottom of the shaft. In half an hour after "cog" pillars were built, it was impossible to get near them, owing to the crushing in of the roof all around them.

However, perseverance and pluck accomplished much even under such dangerous conditions. It would not be compatible for me to give credit to one workman more than another. All who took part in the work of staying the crush and opening the slope in the effort to recover the bodies of the entombed men were heroes and proved the heroic material of which underground workers are composed.

On the afternoon of the accident, when all hope of rescuing the entombed men from the Twin Shaft, even if they were alive, was abandoned, it was ordered that a bore hole should be drilled through the barrier pillar between the Clear Spring and Twin workings, to determine, if possible, the condition of the atmosphere inside of the fall. After two failures, a hole was drilled successfully through the pillar. (See map for location of hole.) The thickness of the barrier pillar, as shown on the map, was ninety feet, and the drill reaching the twin workings at a distance of ninety feet, the correctness of the survey is proven. The bore hole was drilled in the return airway of the Clear Spring Colliery. There was a current of sixty thousand cubic feet of air per minute returning to the fan at the point in question, and by means of brattices, this was directed on the mouth of the hole. The gas was found coming from the Twin workings under such a pressure that it could be detected by the safety lamp at a distance of ten feet from the mouth of the hole.

After a careful consideration of the situation, it was decided that the only feasible way to reach the bodies was to proceed down No. 3 slope, it being by this time apparent to those in charge that all of the men who had been at work in No. 3 slope at the time of the accident had been crushed to death by the cave-in. Accordingly, on July 6th, the work of opening a passage through the fallen rock in the slope was commenced. The undertaking was fraught with the greatest danger, and it was necessary to forbid the use of explosives on account of the surrounding atmosphere being filled with a mixture of explosive gas. The fallen rock was broken by means of hammers and wedges then loaded upon trucks and taken along the road at the head of the slope to be used as packing for the support of the pillars. Work in the slope was pushed vigorously day and night until July 29, the opening having been driven a distance of 553 feet from the head of the slope. The workmen then refused to continue work, as their danger was continually increasing. The timbers in the slope were constantly settling, and there was great danger that the rock above the timbers might give way, crush the timbers and close the opening thus making it impossible for the rescuers to escape. The officials of the Newton Coal Mining Company therefore deemed it advisable to ask all of the Mine Inspectors in the Anthracite Coal

region, and all of the superintendents of the neighboring coal companies to meet in Pittston on July 24th, 1896, and confer in regard to the advisability of continuing the work in No. 3 slope.

The following gentlemen responded to the call:

I. A. Stearns, general manager of the Pennsylvania Railroad Collieries; W. A. Lathrop general superintendent of the Lehigh Valley Coal Company; Mine Inspectors Stein, Brennan, Davis, McDonald and Roderick; J. L. Cake, general manager of the Clear Spring Coal Company; James B. Davies, superintendent of the Dodson and Black Diamond Collieries; E. H. Lawall, superintendent of the Lehigh and Wilkes-Barre Coal Company; W. J. Richards, mining engineer of the Lehigh and Wilkes-Barre Coal Company; George T. Morgan, general superintendent of the Susquehanna Coal Company; C. D. Simpson, of Simpson & Watkins; Andrew Bryden, consulting engineer, Pennsylvania Coal Company; Isaac R. Moister, division superintendent, Lehigh Valley Coal Company; S. B. Bennett, general superintendent, Butler Mine Company; Alexander Bryden, superintendent, Pennsylvania Coal Company; W. D. Owens, district superintendent, Lehigh Valley Coal Company; W. G. Thomas, superintendent, Laflin Coal Company; Henry T. McMillan, foreman, Pennsylvania Coal Company; Colonel Brown, division superintendent, Lehigh Valley Coal Company; David W. Evans, superintendent, Stevens Coal Company; Geo. O. Thomas, foreman, Clear Spring Coal Company; E. D. Jenkins, general manager, Stevens Coal Company; James Young, assistant superintendent, Pennsylvania Coal Company.

The conclusion reached at the conference was as follows:

"After a thorough examination of the mines and maps of the property mined from the Twin Shaft, the unanimous expression of opinion by the above mentioned gentleman was that they were surprised at the progress which had been made, taking into account the condition of the mines, the continuance of the squeeze, the presence of an enormous quantity of gas, and the fact that no explosives could be used in prosecuting the work. No suggestions were made that any better method of working could have been adopted. Their judgment was that everything possible had been done, and is being done, to reach the bodies of the entombed men.

"The officials of the Newton Coal Mining Company stated that they were desirous of receiving from these gentlemen any suggestions concerning the matter, and expressed a willingness to expend any amount of money that might be necessary to recover the bodies. Deep regret was expressed by all present at the apparent impossibility of ever finding the bodies.

"The question of driving from the Clear Spring workings through the pillar of coal between their mines and the Twin Shaft workings

was taken up and fully discussed; and it was decided that it was not only impracticable, but useless, and the indications all showed that the squeeze commenced in that locality, or near the Susquehanna river, and the gas which necessarily accumulated in the Twin Shaft workings near the Clear Spring line would make it impossible for the entombed men to retreat in that direction, even had the fall not extended that far.

"It was also shown that the point where the work of rescue commenced in the slope, was nearly sixteen hundred feet by actual measurement, in a straight line, to where the entombed men are supposed to be, than if an opening had been made from the Clear Spring mines at the point where the bore hole was put through; and that the facilities for prosecuting the work rapidly were much better at the No. 3 slope than from the Clear Spring mines. The indications as shown in the mines and on the surface demonstrated beyond a question that the fall was general over the entire territory between the No. 3 slope and the Clear Spring colliery."

On July 27th, the officials of the Newton Coal Mining Company sent to each of the gentlemen participating in the above-mentioned conference the following letter:

Dear Sir: Inasmuch as you have made a careful examination of the workings of the Twin Shaft, as per maps of the Newton Coal Mining Company and the Lehigh Valley Coal Company, as well as having visited the mine since the late accident, we would be pleased in view of your long experience in mining, if you would answer the following questions:

First. Were the mining operations, as far as you can determine from a careful examination of our maps, conducted with due regard for the safety of the mine and the men employed?

Second. From what you have been able to learn from your visit to the mine, from maps, and from the known thickness of the overlying strata as taken from the shaft and bore holes, as per section shown, do you think it possible for the most competent to have foreseen any danger from a sudden cave such as you are satisfied must have occurred?

Third. Has the Newton Coal Mining Company in your opinion, through its surviving officers, used all possible diligence in its efforts to rescue the imprisoned men; and is it your opinion that these efforts have been made at such points as would be considered most practicable and advantageous for an early rescue?

Fourth. From what you know of the present condition of the mine as to water rising in the lower workings, and the immense body of

gas in the mine, which cannot be removed during the progress of the search, do you not consider that a continuance of the work can only go on with risk to the lives of the men thus employed?

Respectfully yours,

JNO. B. LAW,
General Manager.

As the result of the responses received to these letters, the officials of the Newton Coal Mining Company decided to abandon as useless the effort to recover the bodies of the entombed men.

On July 1st, 1896, Honorable Daniel H. Hastings, Governor of the State of Pennsylvania, appointed William Stein, Edward Roderick and Edward Brennan, Inspectors of Mines in the Anthracite Coal Field, as a commission to meet in Pittston on as early a day as possible, to investigate into the cause of the disaster in Twin Shaft on the morning of June 28th, 1896, and report the result to him without delay.

The commission met in Pittston on July 9th, 1896, its session being with open doors. Any person who knew anything concerning the workings of the mine or the cause of the disaster was courteously requested to come forward and testify.

The report of the commission was sent to the Governor and published. I shall not, therefore, include in this report any of the testimony taken by the commission.

I must say that in all my experience with underground caves, I have never failed before to know of any crush or squeeze that did not give ample warning, which, if heeded, would enable all to escape before the general collapse took place. In this case, however, it appears from the testimony of some of the witnesses—men who came out of the mine a short time before the cave and said that they would not have been afraid to go to sleep at the foot of No. 3 slope then, without fear of the roof coming down—that they did not hear any pillars crushing, any unusual sounds coming from the roof, or any other indications of a cave while they were at the foot of No. 3 slope. This is the sworn testimony of John Riker, who failed to reach the top of the slope before the cave took place and who saw Superintendent Langan at the foot of the slope not ten minutes before the cave. My opinion is that Superintendent Langan and Mine Boss Lynott were deceived in the location of the crush or squeeze, which, I believe, was taking place along the faces of the chambers in proximity to the fissure and about twelve hundred feet from where the men were working at the pump. It is my opinion that if, when the body of gas was discovered at nine o'clock on Saturday evening, an examination had been made around the face of the workings, it would have been found that a general crushing of the pillars was going on and unmistakable sign that a cave was about to take place.

I have no doubt they thought the squeeze was only local in the vicinity of the pump, which was located in the sixth vein, and that there was no particular danger to them even if a cave should occur from the breaking down of the divided rock between the veins, so that very little attention was given to the squeeze up the pitch from where they were. There, however, the disintegration of the pillars was going on rapidly until a sufficient area was so robbed of its support as to cause a sudden thrust of the overlying strata down upon the pillars in the basin; these failed to stand the extra weight thus thrown upon them, and from all the indications they gave way, instantly entombing the men.