CONDITION OF COLLIERIES.

It is gratifying to state that the condition of the mines in general is steadily being raised to a higher standard in point of safety, and more particularly in the sanitary condition, notwithstanding the deplorable increase in the loss of life during the year. Had it not been for the two disastrous occurrences that resulted in the deaths of eleven persons, the general accident list that usually makes up a very large proportion of our mining casualities, would have made a much more favorable showing.

As is frequently shown in these reports, a very large percentage of the accidents are due to the recklessness of the employes themselves, which is true without any question of doubt, but the eleven victims above referred to do not come under that category, for I am of the opinion that neither one of the victims had contributed toward the occurrence that cost the unfortunate men and boys their lives.

It would be much more gratifying to us if we could without any conscientious scruples make the same assertion in the defense of those who had the direct charge of the colliery wherein the accidents happened, but the facts and testimony in the case where the seven lives were lost, indicated that there had been a lack of vigilance on the part of those who had charge of the underground workings of the colliery, and I regret very much to say that the coroner's jury that investigated the cause of the sad disaster, were justified in their verdict to some extent in censuring those who had the direct and daily charge of the colliery. It was my opinion at the time of the occurrence, and I have had no reason since to change it, that had there been a reasonable quantity of material retained in the breast it would have given sufficient protection to the battery, so that when the fall of coal occurred it would have pre vented the coal from rushing into the gangway in the manner it did, shutting the seven victims in and leaving them no way of escape.

Richardson Colliery Disaster.

This was one of the many deplorable accidents that occur from time to time throughout the mining world. This is however one of the most disastrous that has occurred in this section of the southern coal field in many years, because of there having been the greatest number of lives sacrificed by a single accident. Seven persons lost their lives and three others were seriously injured.

This accident occurred on the twenty-third of October and resulted from a fall of coal in a breast that had been worked up about forty feet and was drawn empty or nearly so on the day of the accident. A large body of coal fell, forcing the battery and timbers out of the chute, knocking five sets of timber out in the gangway, closing it, and shutting the seven unfortunate victims in between the face of the gangway and the outer world, there to be suffocated by the large volume of gas displaced by the fall of coal. The other three unfortunates luckily were on the outside of the fall. The injuries they sustained resulted from the force of the air and gas being suddenly displaced by the fall.

According to the testimony of Mr. Martin Kelley, the inside foreman of the colliery, this breast No. 7 had been driven by the miners only forty feet, when the face of the coal commenced to fall, or what is more generally known among the mining community of the anthracite coal region, where the veins of coal stand on high angles, the face of the coal had run by its own weight or its gravity, which is not an unusual occurrence in large, steep pitching veins.

In fact all of the breasts up to No. 7 after being driven a short distance, ran and continued to run as the coal was loaded out, until the openings fell through to the old gangway on the lift above. This, as a natural consequence, relieved that part of the workings from a great source of danger, because it made an exit for any explosive gas that might have existed in the breast previous to running through, to escape, relieving both officials and workmen of more or less anxiety.

Mr. Kelley stated that when the face of No. 7 breast ran away the place was practically sealed against any further examination, and in accordance with the custom that had hitherto been carried out in the colliery he ordered his subordinates to load coal from breast No. 7. He also stated that they continued to load coal from No. 7 until the day of the accident, and that up to that time four hundred and twelve cars of coal had been loaded out, when it was reported to him that the breast was empty, which Mr. Kelley subsequently qualified by stating that there remained from ten to fourteen feet of loose coal on the battery, but he was not positive on that point. One thing however he was sure of, that the breast had not run through to the old gangway as the outside breast had done previously. He was also aware, that the place was filled with gas, and that the face of the coal was liable at any moment to fall away in large bodies thereby suddenly displacing the large volume of gas with the probability of an explosion, inasmuch as the velocities of the elements so displaced would very probably force the flame through the gauze of the safety lamp.

Mr. Kelley also stated that he was standing at the tunnel, about two hundred yards from where the accident occurred, and his first impression was, that the gas had been exploded in the manner above mentioned, and he reported such to be the case in a telegram which he sent to the Pottsville office.

In this he was undoubtedly mistaken from the fact that none of the victims of the disaster showed any sign whatever that there had been an explosion of gas, but the source of danger from that element under the circumstances, knowing that the empty breast was charged with gas, and knowing that if a fall occurred, a large quantity of gas would

be suddenly forced down out of the opening to the section of the mine where the men were engaged, it would be quite natural for him to come to such a conclusion, because his past experience in similar cases, together with experiments made by scientific men, have demonstrated the fact that when an inflammable body travels at the rate of eight feet per second the Davy lamp is unsafe, because the high velocity is sufficient to force the flame through the gauze of the lamp.

The officials of the colliery were not the only persons who entertained an apprehension of danger from that source, in fact it was quite evident that the workmen themselves were more or less apprehensive, as it was seldom that a sufficient force could be had to run the colliery to anything near its full capacity.

It is true beyond question that there are many difficulties to contend with in collieries of this character and to cope with them requires more than ordinary care and forethought on the part of the workmen, as well as the colliery officials. It is true that accidents are liable to happen, even when the greatest diligence and the best of judgment are being displayed, and a lack of either is sure to bring about disaster sooner or later. That this accident resulted in consequence of an error cannot be doubted, but we are fully convinced that neither the officials nor the workmen ever for a moment anticipated the closing of the gangway as it was.

Another accident occurred at No. 10 colliery operated by the Lehigh Coal and Navigation Company, resulting in fatally injuring four persons and injuring four others who recovered.

This accident was also the result of a fall of coal which displaced a body of gas, forcing it out of the main gangway for several hundred feet to a lamp station. Beyond that point, the use of naked lights was forbidden, and from the indications it was quite evident that it was at that point the gas was ignited. It was the opinion of the mine officials that one of the victims, James Haggerty, had fired the gas at the bottom of the breast where the fall of coal occurred, they believed that he had been guilty of using an open light in place of his safety lamp. It was however quite evident in my opinion that Haggerty did not fire the gas, from the fact that the effect of the explosion indicated the contrary, Haggerty was not burned, but was killed by the force of the displaced body of gas and air. There was also another person in close proximity to Haggerty who was not burned, and in fact I could find nothing in my examination to indicate that there had been any flame whatever in or about the point where Haggerty was killed. It did not require any close examination to discover that there had been fire at the lamp station, for at this point both men and timbers were scorehed.

There had been the usual examination made that morning, as far as was practicable, but in this part of the mine the vein is of an unusual thickness, varying from one hundred to one hundred and fifty feet, consequently there are always large cavities that cannot be examined. Hence in fiery mines it is to be anticipated that there is an unknown quantity of explosive mixture stored up, to be displaced at any time a fall of coal or rock may occur. Notwithstanding the best of discipline may exist, and the most improved safety lamp be in use, the danger still exists, for if an explosive body is displaced by a fall, it is more than probable that the high velocity given to the body of gas would be sufficient to force the flame through the gauze of the lamp, thereby igniting the inflammable body that had been displaced by the fall.

The third accident, which probably requires some little explanation, occurred at the York Farm colliery. It caused the death of one wan and severely burned three. Fortunately twelve other persons who were either in the tunnel or about the bottom of the slope, escaped with very slight injuries. The explosion occurred in a tunnel that was being driven. The day before the explosion I had visited the colliery, and in examining the tunnel at the face found indications that they were in close proximity to a vein of coal, to which fact I called the attention of the foreman and the workmen, at the same time telling them not to go into the tunnel with an open light after firing a shot. I told them that in all probability the vein of coal, when they cut it, would suddenly give off a large volume of gas and probably fill the tunnel back to the slope. In fact I took the foreman of the tunnel and interrogated him as to his experience with gas, and I soon found that he had worked for several years in one of the most gaseous mines in the region. \mathbf{I} told him that was satisfactory, and repeated in substance what I had already told him, viz., not to go into the tunnel with an open light after firing a shot.

Notwithstanding this, the accident occurred the next day. It is true according to the evidence that the foreman and one of the workmen, after firing a round of shots, went back to the face of the tunnel with a safety lamp and found that gas had been liberated and that the roof at the face showed indications that a fall was about to occur. They came back to the mouth of the tunnel and reported to the balance of the workmen the result of their examination.

In the meantime another party of workmen who were engaged in drawing another branch tunnel from the main tunnel were sent in to prepare a round of holes, and as they were approaching their working place they came in contact with the gas with their open lights, causing an explosion with the result before mentioned.

COLLIERY IMPROVEMENTS MADE DURING THE YEAR.

The new breaker at the York Farm colliery is about completed and ready for the preparation of coal. This new structure is of a very substantial character, fitted out with all of the modern improvements for cleaning and handling a large quantity of coal. In fact the whole of the