

WHISTON. Whiston, Lancashire. 17th. February, 1878.

The explosion occurred at 1 p.m. on a Sunday afternoon at the colliery owned by the Wigan and Whiston Colliery Company and caused the death of seven people and injury to others. It was caused by spontaneous combustion and the seam had been liable to fires from this cause for some years and the management of the colliery dealt with them by isolating the area where they broke out by brick stoppings. Mr. Henry Hall was the Inspector for the district and three years before he had asked how to deal with the situation at the colliery and he had suggested that the management should get advice from mining engineers. Twenty or so such men had been consulted by the management and it was determined that the best method to deal with the situation was by stoppings.

Mr. Makinson was the certificated manager of the collier and had been in that position for ten years. Abel Wall, one of the firemen reported to him that there had been an explosion in the Main Delf Mine No.1 Pit. The manager consulted the plans of the colliery with Wall to try to find the best way to shut off the air and three men started the work. The manager went down but returned to the surface to get the required materials for the work. He went down again at 2.30 p.m. with William Jones, the furnaceman.

The men were at work at the stopping and he continued bringing sand to them. There was delay in clearing some roads but after they got the first two boxes of sand up the jigger brow using full boxes of coal as a balance, the explosion occurred. He saw no fire but was knocked down by the blast coming down the brow and his lamp went out. He got a light from the office at the pit bottom and asked the firemen, Corrighan and Clough to go with him to the top of the brow. In the jigger brow he met Howard coming out, he was burned and some others took him to the pit top. Makinson went forward and met three others coming out without lights and a little higher up, he met three more who he took to the pit eye.

He saw the fire of another explosion apparently coming from the stopping and he found himself under a lot of timber. He got himself free and with difficulty, made his way to the pit eye from there he was taken to the surface. The other injured had been taken up before him.

Those who lost their lives were-
Abel Wall aged 44 years, fireman,
James Briscoe aged 40 years, dataller,
Isaac Anders aged 40 years, dataller,
John Macdonald aged 20 years, dataller,
James William aged 25 years, dataller,
Henry Heyes aged 33 years, dataller and
James Mullaney aged 30 years, dataller.

At the inquest, which was held at Huyton Quarry before Mr. Driffield, Coroner, Mr. Makinson told the court about the burning in the mine.

“The fire had been burning for about three years in various places. There had been five or six different districts on fire slightly and those had been stopped off effectually.”

John Howard, the chief fireman attributed the disaster to gas collecting in the stoppings and due to imperfect sealing, air had got in and made an explosive mixture.

Mr. Hall said he knew the colliery well and the situation had been dealt with in the past without loss of life and continued-

“The question that seemed to arise was whether proper care was taken to put the stoppings as near to the face as they could be got. if the jury were satisfied with

what had been done in this respect I am content. The manager knew and every official must have known that it was extremely dangerous work.”

The jury returned the following verdict-

“That the deaths were caused by accident and they considered the manger and all connected with the colliery were serving of praise for the efforts they made to put out the fire and save life.”

The Inspector thought that there had been no breach of the Act of Parliament and no prosecution or inquiry into the conduct of the manger were called for. The owners abandoned the working of the mine rather than run the risk of a similar accident.

BLANTYRE. Blantyre, Lanarkshire, 5th. March, 1878.

The colliery was the property of William Dixon Limited and six men and boys were killed in an overwinding accident.

The men who died were:

Pat. Houghnie, collier aged 36 years.

Martin Houghnie, collier, aged 16 years.

Pat. Hopkins, collier, collier, aged 20 years.

Thomas Murdoch, collier, aged 50 years.

Robert Murdoch, colier, aged 20 years.

Michael Currie, collier, aged 40 years.

BARWOOD. Kilsyth, Fifeshire. 8th. March, 1878.

The colliery was on the rising ground near the village of Kilsyth and had two pits, Nos.1 and 2. No.1 was the upcast shaft and was about 400 yards to the south east of the No.2. and was the property of William Baid and Company. The No.1 was 121 fathoms deep to the coking coal that was well known in the district and the No.2 shaft was 142 fathoms deep to the same seam. Fourteen fathoms above the coking coal lay the ‘Bantone’ ironstone and sixty three fathoms above this lay the ‘Gartshore’ ironstone. Both the ironstone seams had been worked from the No.2 pit and the Gartshore had been abandoned for a number of years. The coking coal was about three feet seven inches thick on average and was worked by the log wall system. The roof was of cross grained freestone. The Bantone ironstone was twelve inches thick and the working height was two feet.

The ventilation was from two furnaces at the bottom of the No.1 pit. Each was four and a half feet wide with six feet bars which produced 40,000 cubic feet of air per minute. Mr. Rolandson, the assistant Inspector, had visited the colliery on the 29th. January 1878 and found the air distributed as follows-

“15,550 cubic feet passed down the main dook and a certain amount of leakage was permitted to pass through the screens placed in the various branch roads leading off on each side of it. the air, on reaching the bottom, split to the left and to the right and passed up the working places. that on the north east side, after ventilating places there, was joined by a split of 6,300 feet going in the north east level from the pit bottom and had only to supply one working place immediately to the rise of the level before passing along the range of abandoned workings lying between the level and the upcast. The other half of the split, after serving the south west side, was joined by a scale of air from the pit bottom the two combined amounting to 7,430 feet, went to ventilate the present ironstone workings. The small coal was ventilated by an independent split of 5,230 feet. The remaining air, 9,000 feet, was used to keep the pit in a safe state the abandoned section of the ‘Bantone’ ironstone working north of the 17-fathom dislocation the return from

which was the 'blind' pit, into the main air courses in the coal and thence direct to the No.1 pit."

The coal seam was known to be fiery but naked lamps were used and safety lamps only under special circumstance. At 8 p.m. on the night before the accident, the fireman descended and examined the workings before the brushers (night workers) were allowed to commence work and again on the following morning about 3 a.m. before the day shift came down. He reported to the day fireman at the pithead and signed the book that all was well. Eighty workmen were allowed down by the day fireman at 6.15 a.m. and worked for about two hours with no indication of danger.

The first indication that anything was wrong, as reported by the survivors, was that there was a slight blast and others experienced a stoppage, check or reversal of the air. Almost immediately the bottom of the downcast shaft was enveloped in flames and a strong current of air rushed up it. The pit head man described the scene at the surface as-

'A small emission that might come from gunpowder and was immediately followed by a discharge of steam up the dip end of the shaft and then by steam and smoke from both ends.'

The miners below had rushed to the bottom of the pit when they realised something was wrong. Those in the ironstone and small dook workings found that they could not get up the No.2 shaft and after some delay they were taken by an overman up the south west air course to the No.1 pit and reached the surface in safety. Some men in the main coal dook ran from their working places to the dook road and attempted to get to the pit bottom, but finding the fire raging, they proceeded in the dark up the face. There were about twelve of these men.

At the surface there was no lack of willing volunteers to go down the pit, some reached the No.1 pit and were lowered down a very short time after the disaster. Their efforts were directed at the main dook but any attempt to go forward were difficult and dangerous. Because of the fire that was raging at the bottom of the No.2 pit, the air had reversed and was carrying the products of combustion from the furnaces along with it. The men, finding that the entrance to the No.2 pit bottom closed advanced by Crawfords' dook and met the twelve men who were making their way in the dark but they did not go any further. They retraced their steps, taking the men with them. They met the boy Fleming, who later died. He worked the donkey engine at the bottom of the pit and in trying to escape, had had his clothes burned off him. The party went to the surface but two remained down until further assistance arrived.

After about fifteen minutes an explosion took place which put out their lights and they went to the bottom of the No.1 pit where they met others who would help. After putting out the furnaces, the party lead by a man who knew the mine, set off down the dook but were driven back by gas. The air was almost stagnant in the mine and to try to get it to circulate, water was forced down to try to get the air to go to the No.2 shaft. They returned to the bottom of the No.1 pit and attempted to approach the south west level and down the south west air course but yet another explosion took place and they returned to the No.1 pit.

Other parties went down but the air was getting worse and although rescue attempts were not abandoned hope of finding anyone alive dwindled. Mr. Moore, an Inspector and his assistant Mr. Ronaldson talked with the management of the mine and it was realised that there was no hope for the men left below ground.

Various schemes were devised to get into the No.2 pit. water was poured down the shaft and steam jets were introduced in the No.1 shaft. There was a mid wall in each of the shafts and it was found that the air was going down one division and up the other. The mouth of the downcast division of the No.1 and the upcast division of the No.2 were boarded over and after about three quarters of an hour an air current between the

two shafts was established. There was little improvement for two or three hours and smoke continued to come from the downcast division of the No.2 shaft.

Explorations were made on the condition of the No.2 shaft by lowering a weighted rope. It was found that the weight could not be lowered to the bottom. On the 9th., a descent was made in a 'kettle' to within 17 fathoms of the bottom. It was found that the arriving was insecure and the midwall was burned out and repair work started.

An attempt was made to reach the workings from the Bantone'ironstone and then into the coal but the air was stagnant and the attempt had to be abandoned and the efforts were stepped up to repair the No.2 shaft. At the No.1 pit, parties were trying to get into the workings but the work was stopped when further explosion occurred on the 14th. and it was realised that the pit was on fire. A meeting of engineers was called at which the Inspector, Mr. Alexander, was present and the situation was considered. They issued the following statement-

"In attempting to enter the Barwood pits it had been found that the mines are filled with foul air and that the workings are burning as indicated by the explosion which have taken place since an early hour this morning. We having carefully and anxiously considered the state of matters, have come to the conclusion that none of the imprisoned miners can now be alive, and that and a farther attempt to enter the workings would in every probability result in a greater loss of life. We resolved that the only course left is to shut up the mines until the burning is extinguished, and we have arrived at the conclusion with a full appreciation of the painful feeling which will no doubt awaken in the minds of the suffering relatives."

The mine was closed six days after the disaster and it took four weeks to flood it to 17 or 18 fathoms above the bottom of the No.2 pit. On the 5th. April it was hoped that the fire was extinguished and pumping operations were started to clear the pit of water. As these operations continued, it was found that shaft was badly damaged but was repaired and the working entered. These were also found to be in a very dangerous condition with swollen roof, walls and pavement but there were made safe and the bodies found and recovered. The last body was recovered on the 10th. September, 1878.

Those who lost their lives were-

Alexander Burns aged 34 years, bottomer.

James Wardrope aged 52 years, collier.

James Wardrope aged 16 years, collier.

David Wardrope aged 20 years, collier.

David Gould aged 19 years, collier.

Alexander Ross aged 40 years, collier.

James Ross aged 15 years, collier.

John Miller aged 35 years, collier.

William Cameron aged 44 years, collier.

James Cameron aged 15 years, collier.

James Gould aged 45 years, collier.

George Young aged 34 years, collier.

Robert White aged 24 years, collier.

Walter Ralston aged 30 years, collier.

Edward Hardie aged 38 years, collier.

Walter Cowan aged 32 years, incline man.

David Fleming aged 17 years engine boy.

A fund was started for the benefit of the nine widows and twenty nine children by the gentlemen of the district which provided 5/- a week for each widow and 2/- for each child. The fund was regarded '*as ample to meet all their future requirements.*'

At the inquest into the disaster little light was thrown on the cause. Evidence was taken from the survivors and after the mine had been flooded for several months, there was little to be learned from the inspection of the workings. It was clear that a small explosion took place at the at the bottom of the dook and of the twenty seven men who were in the place, twelve escaped and of them, six were slightly burned. Some of the bodies were found to have died from suffocation at their places of work and others were found in places where they must have been for about an hour after the first explosion.

One of the survivors said-

“We felt two blasts the last of which out our lights. We went to our bench and afterwards to the pit bottom where we found flames extending round it. There was no way of getting out in that direction. We returned to the bench and after remaining there a little, we went to the pit bottom again we endeavoured to get a light at some burning wood but failed. We went back and along the face with others here we met some explorers. None of us thought of proceeding down the dook. The air was tolerably good all the time we were moving about but we had no light.”

So as was known there was no standing gas in the mine and the ironstone waste was the only place where gas could have accumulated but an hour before the accident some bottomers had entered and found none.

One of the bottomers who was raised just before the explosion said-

“I observed a reversal of the air just as the cage was approaching the bottom, and on reaching it, I found myself surrounded by flames. It seemed to fill the mouth of the north east level from roof to pavement. Down at the low side of the of the level near the entrance to the dook, the flame rushed over men and into the shaft. Upon seeing a sort of lull in the flame I ran and lay down at the foot of the heading in the fresh air which was blowing strong up the No.2 shaft, a door being partly open.”

The Inspector it unlikely that the gas originated there bit was burning there and it was thought that the withdrawl of the waste space would allow gas to collect there. These would go to the upper strata and be liberated at a break produced by natural subsidence to which long wall mining was subject.

The Inspector commented-

“This is a somewhat unsatisfactory finding but the investigation and inquiries made by Mr. Moore and myself did not warrant us to arrive at a more definite conclusion. since the accident the mine has been worked by safety lamps.”

UNITY BROOK. Kersley, Lancashire. 12th. March, 1878.

The colliery was near Bolton and was the property of Messrs. James Stott and Company. Two seams were worked at the collier near Manchester, the Trencherbone at about 300 yards down and the Cannel at about 360 yards. There were two shafts with a winding engine at each and the downcast was the winding shaft for both seams. The workings were not extensive being some 350 yards on the level and 200 yards wide and dipped about 1 in 4 on the dip side of the shafts. Open lights were used to work both seams and safety lamps used only for examinations.

The explosion took place in the lower Cannel mine where the workings were divided into an east and a west side by an engine plane or downbrow. There were five levels at each side, each of which had been driven to the boundary where the cut-throughs were completed from one level to another and work had commenced on the pillars to be worked back to the shaft. The pillar work on the east side had suffered a sinking of the ground and a fall of roof a month before the explosion but this had not happened on the west side.

Early in the morning of the day of the explosion, Mr. James Holt, the underlooker, found a small fall of roof on the west pillar work when he was making his inspection before the men went down. During the morning he was called back to the fall by his assistant, William Mayoh, and he found that the fall had increased. It had come down about three or four feet over an area of seven by ten yards and the roof was settling on the gob walling which had been left for its support. Holt was an experienced miner and accustomed to firedamp and he was aware of the old rule and practice in this district that when the roof is falling, especially if it was the first fall in the district, open lights should be excluded but neither of these pints seem to have occurred to him nor any of the other experienced colliers that were in the place.

Holt went to the top of the fallen material and found that there was a good ventilation current passing through and arranged with his assistant to have a strong prop set under one part of the fall, he went away to other duties leaving the men working with naked candles. He finished with the Cannel Mines and went to the Trencherbone, spent about an hour or two there and then went to the surface at 1 p.m. He usually came to the surface an hour or two later but the manager of the colliery, Mr. Isaiah Johnson was away on business that day and he had to see to matters at the surface.

On entering the cage to come up from the Trencherbone mouthing, he found a miner, Ralph Welsby, coming out of the east side of the Cannel Mine. It was before Welsby's time for going out but he had made arrangements to go to visit a sick child. Another forty men came up from the Cannel mine just before the explosion. Ten minutes later, the explosion took place. The cage had just reached the pit bank with tubs and the blast lifted the heavy iron plates at the top and blew the cage to fragments, some of which fell down the shaft.

All the men in the Cannel Mine lost their lives as did the onsetter at the Trencherbone mouthing. This was a total of forty three dead. Both shafts were damaged and some of the brick lining was blown out, timber broken and landing plates torn up. One of the cages at the top was not severely damaged as the blast vented to an opening underneath. No time was lost on repairing things and the rope that was down the shaft was fast but was disconnected. Holt and two men named Teesdale were lowered carefully down the shaft. They descended to within five yards of the Trencherbone mouthing but further descent was stopped by debris in the shaft. Holt got out and climbed down the conducting ropes to get to the mouthing and there he found men alive.

Mr. Dickinson, the Inspector got a telegram informing of the disaster and he arrived at the colliery at 3 p.m., two hour after the explosion. By that time a hoppet had been slung instead of the cage and this was able to pas the debris in the shaft. Holt was bringing men up from the Trencherbone by this method. The inspector found that the air coming from the upcast shaft was rich in afterdamp and there was a smell that indicted that the mine was on fire. There was fresh air going down the downcast shaft but the men as they came to the surface were suffering from the effects of the afterdamp. They stated that they heard no signs of life from the Cannel Mine and that the fresh air was going to the Trencherbone only where it mixed with the afterdamp which was coming from the Cannel Mine.

Mining engineers from neighbouring collieries arrived to offer their help. They included Mr. Edward Pilkington and Mr. Simon Horrocks and a consultation took place on the pit bank on the Inspector. It was decided to get all the men that were alive in the pit out as quickly as possible and thirty men were rescued.

Dickinson and Holt descended the shaft to see if anything could be done about the Cannel Mine. This was hazardous as the indicator on the winding engine was not working and no one to signal the engine man to stop but the hoppet was lowered a few feet below the mouthing. Arriving at the Trencherbone mouthing, they found that the ventilation had corrected itself. They saw that the air doors were in tact and the furnace

had gone out. They then tried to get into the Cannel mine but found the way barred with broken timber and rubbish and they needed workmen to clear it away. They shouted but got no reply and returned to the surface to let the pit carpenters clear the debris.

They were down for about an hour and they returned with the body of the onsetter. Five hours had passed since the explosion and Mr. Dickinson, Mr. Holt, Mr. Grimshaw and Mr. Woodward went down into the mine again in the hoppet. Avoiding the debris at the bottom, they managed to get into the Cannel Mine and found it very hot and afterdamp was present. They tried to go up the west level where the roof was falling in the morning but were driven back by gas. They then went down the engine brow and through those parts of the mine that were safe for them to do so. They found considerable destruction and the bodies of the dead who appeared to have been killed where they were working at the time of the explosion. Eventually they managed to get into the west level and found that there had been an extensive fall and that this was still continuing a little. They then went to the surface having been down the mine for about two hours.

On the surface they found the manager had returned to the pit with Mr. James Stott, the managing partner of the colliery. Mr. Dickinson went home and returned the following day where he found that much of the damage had been repaired and the fall could be further examined. It extended 25 yards by 20 and was about seven times the area it was before the explosion. Firedamp was coming from the cavity in large quantities and it was considered that the fall was the centre of the explosion.

The men who died were-

Alfred Isherwood aged 32 years.
William Leach aged 24 years.
James Byrom aged 32 years.
George Lindley aged 47 years.
Thomas Byrom aged 28 years.
Ellis Lord Lindley aged 15 years.
John Tickle Lomax aged 31 years.
William Morris aged 15 years.
John Hamblet aged 31 years.
John Harrison aged 40 years.
George Jackson aged 28 years.
Charles Tong aged 16 years.
Amos Lomax aged 17 years.
Thomas Mace aged 19 years.
Richard Feartherstone aged 18 years.
Robert Clarke aged 18 years.
Joseph Welsby aged 18 years.
Richard Wallwork aged 25 years.
John Greenhalgh aged 26 years.
Peter Fogg aged 26 years.
James Partington aged 44 years.
James Hobson aged unknown.
Joseph Hobson aged 26 years.
James Chadwick aged 38 years.
Robert Enion aged 39 years.
David Enion aged 13 years.
Thomas Lever aged 18 years.
Absalom Barnes aged 14 years.
Andrew Walker aged 22 years.
William Barnes aged 38 years.

Wright Lomax aged 26 years.
Thomas Lomax aged 28 years.
George Booth aged 21 years.
Thomas Wolstenholme aged 41 years.
John Haynes aged 21 years.
Christopher Moore aged 26 years.
James Beattie aged 19 years.
Johnathan Enion aged 12 years.
Thomas Peake aged 17 years.
William Maych aged 33 years.
Thomas Hilton aged 20 years.
Samuel Wolstenholme aged 47 years.
William Wolstenholme aged 21 years.

The inquest was held by Mr. J. Broughton Edge, Coroner, where Isaiah Johnson, the manager, told the court that the Cannel mine had been worked from the previous January. He explored the mine after the disaster with Mr. Dickinson and they found the bodies burnt and badly mutilated. Nos. 1, 2 and 3 levels were badly affected and a crack was discovered in James Partington's place from which gas was issuing from the state of the bodies it looked as if the men were just getting ready to have their dinner.

Mr. Dickinson thought that a fall of roof had liberated gas which ignited at the naked lights. James Stott, one of the colliery proprietors said the mine was well ventilated and justified in allowing the men to stay after it was known that the roof was falling and allowing the men to use candles. He stated-

'A good man with a candle is better than an bad one with a lamp as greater precautions are used.'

After the Coroner summed up, the jury brought in a verdict of 'Accidental Death'. They also stated that-

"We are satisfied with the working of the pit and we also do not think any one to blame. We believe everything has been done which could tend to the safety of the men."

Mr. Dickinson commented-

"Safety lamps are now used in both seams although against the expressed wish of many of the miners who have to undergo the risks. Their fear is that the poor light of the Davy lamp more accidents will happen from falls of roof and coal.

Twelve years ago on the 10th. December, 1866 a similar outburst of firedamp accompanying a first break of roof occurred in the same seam at the Bank Colliery Little Lever when eight lives were lost and fourteen others including the underlooker and fireman were burnt. On that occasion only safety lamps were allowed to be used but some of the miners thinking that precaution was unnecessary had opened them."

Mr. Dickinson visited the mine on the 18th. March and the 2nd. May and found gas still coming from the cavity left by the fall. On the 15th. January, 1879, the anniversary of the explosion he visited the colliery again and the pillaring had advanced about 100 yards past the fall but still there was gas coming from new breaks.

APEDALE. Newcastle, Staffordshire. 27th. March, 1878.

The colliery was owned by Messrs. Stainer of Apedale and the explosion which claimed the lives of twenty three men and boys took place at the No.1 Burley Pit. There were two shafts at the colliery and the ventilation was by a furnace. The book which recorded the quantity of ventilation passing through the mine was destroyed in the

explosion. A fan was being contemplated to ventilate the mine and it arrived at the colliery the day after the explosion.

The shaft was 484 yards deep and several seams were worked at the colliery, the Bullhurst, the Eight Foot, the Seven Foot and the Ten Foot. The seams were distinct and worked separately with lamps used in all the seams. The manager of the pit was Mr. James Henry Price and William Scott was the assistant manager of the Apedale Collieries but did not manager the Burley Pit. Mr. Price had been at the pit for two and a half years and was partly responsible for laying out the pit. Before he was the manager, he had been assistant to the previous manager, Mr. Bostock. Mr. Price visited the pit two or three times a week and his last visit to the Eight Foot Seam had been on the 20th. March when he found everything satisfactory.

The head butty tried the lamps in the morning and the fireman, John Whalley, went down the pit at 5.30 a.m. every morning to inspect the pit. This he did on the morning of the disaster and found no gas at all. Neither did the fireman in the Eight Foot Seam. During the day both firemen made inspections and found no traces of gas. The firemen had to be present when shots were fired and three shots were fired in the Seven Foot Seam, that morning.

John Whalley who was the fireman in the Seven Foot Seam of the Burley Pit was at work at the time of the explosion which took place at about twenty minutes to two in the south level. He felt the effects and then he heard it. There were several men working with him and they all went at once to the pit bottom.

A short time before the disaster, John Shenton, the head butty in the Burley Pit, was talking to Caleb Whalley and he heard no complaints of gas in the mine. He had worked in the mines since he was a boy and knew fiery seams. In his opinion, there were none better managed than the Burley Pit. It was his duty to examine all the lamps before they were taken into the pit. He saw the lamps and they were all in good order,. No one in the mine was allowed a lamp key except the fireman and all the lamps were locked on the morning of the explosion. He was knocked unconscious by the explosion but he took part in the rescue operations and remained down the pit all the afternoon. They found timbers blown down on the South Side and there was a fire which, when discovered, caused the men to be withdrawn from the mine

Mr. Gilroy, Inspector of Mines, went to the colliery when he received a telegram telling him of the disaster and on his arrival, went down the pit where he found that there was a fire in the south side workings and the upcast shaft. There was still firedamp in the pit and it was sure that there was no hope of the men being alive. He considered that it was useless to run the risk of further lives by sending men down the shaft and a consultation took place where he advised that the mine be flooded to extinguish the fire. The managers replied that there was not enough water to do that so the next best thing was done and that was to plug the bottom of the upcast shaft with rubbish and try to starve the fir of air. About noon the following day when Mr. Gilroy had been at the colliery all night, it was considered that the connection between the shafts had been closed when a second explosion took place. Steam pumps and other appliances were put in pace and the flooding of the mine carried out.

The men who died from Apedale were-
Caleb Whalley aged 29 years, and
Frederick Whalley aged 13 years.

Those from Silverdale were-
Edward Smith aged 16 years.
William Bostock aged 15 years.
Joseph Braddock aged 28 years.
William Baggalley aged 14 years.

James Higginson aged 35 years.
Thomas Dale aged 26 years.
Henry Yarwood aged 17 years.
John Sanders aged 26 years.
John Edwards aged 28 years.
John Stockton aged 15 years.
William Baggalley aged 25 years.
Albert Handy aged 15 years.
Henry Piper aged 28 years of Halmerend.
Abraham Riley aged 43 years of Boon Hill.
John Taylor aged 16 years of Newcastle.
Joseph Baggalley aged 35 years of Newcastle.
James Mayer aged 60 years of Chesterton.
Thomas Hughes aged 28 years of Chesterton.
Richard Fowler aged 60 years of Chesterton.
James Cork aged 21 years of Wood Lane.

There was great distress in the district due to the time it took to recover the bodies and the Colliery Company provided for the widows and orphans of the disaster along with an allowance from The Hartley Fund.

The inquest into the explosion was held at the George and Dragon Hotel, Chesterton before Mr. Booth the coroner. Mr Maule Q.C. watched the proceedings on behalf of the Treasury, Mr Wynne and Mr. Gilroy, both Government Inspectors. Mr. Strick represented Messrs Stainer and Company and Mr. W. Brown, the Miners' Agent were present.

Mr. James Cope Cadman produced plans of the colliery and workings to the court and the evidence was taken from the witnesses. John Whalley, who was the fireman in the Seven Foot Seam, was down the pit at the time of the explosion and went to the surface. He went down the pit again half an hour after the accident but he did not go into the workings. Whalley thought the Burley pit was the best he had worked in his twenty years experience in the mines.

Henry Viggers gave evidence to the inquiry. He had worked in the Burley Pit before the accident but was now working as a railway porter. The workings were free from gas and there was plenty of air. He had been a collier all his life and when he heard of the disaster he thought it a mistake as the mine was one of the safest he had known. John Dale was the next witness. He had been a fireman in the Burley Pit up to a month before the explosions and he agreed with John Vigger's view of the state of the colliery.

The manager of the colliery, James Henry Price, produced the Report books of the colliery for examination and he said that he thought that it might be possible for the furnace flames to get high enough to ignite the return air.

Frederick Cook, the lampman, said he gave out 94 lamps on the morning of the disaster and all were locked and in good condition but there was no record kept to which seam the lamps went. Thomas Moore, another lampman, said 69 lamps were returned to him and all were locked and in good condition. There were 12 lamps missing 11 of which were recovered from the Eight Foot Seam and were damaged, probably as a result of the explosion. The colliers always left their matches and pipes with him before they went down the pit and slips of paper were used to show which lamp every man had and these could not be changed without the fact being known.

William Scott, the assistant manager of the Apedale Collieries, said he was one of the first to go down the pit after the explosion. They found a small fire on the south side which was extinguished. When he was questioned by Mr. Wynne as to the cause of the disaster he said-

"I examined the workings and went down the air dip where there were traces of fire. I found places where the coal had been on fire and the inference I drew was that the air was fired at the furnace and trailed up."

The acting manager for Messrs. Stainer at the Silverdale Colliery, James Lucas, stated that he had been down the pit with Mr. Stainer and from the charred condition of certain places he thought that the explosion had occurred where a shot had been fired 40 yards up the dip, on a level with the furnace. he found the seam very dusty and commented 'the dust would catch fire before the gas'. He was uncertain as to the exact cause of the explosion, the gas could have fired at the furnace or by the shot but the shot had done it's work. Mr. Strick, the manager of the Silverdale Colliery had made several inspections of the mine with the Government Inspectors, Messrs. Wynne and Gilroy and he thought the explosion started at the furnace.

The Inspectors Mr. Gilroy and Mr Wynne made examinations of the mine on 7th. June and again on the 12th. July and Mr. Gilroy thought the explosion could have originated from one of three causes. First, the shot in the furnace dip, second the return air over the ventilating furnace and third at a defective lamp.

Mr. Wynne said-

"It appears a few days previous a 'thirling' was made out of the straight rise heading into the workings above, so that any gas that was given off in the higher workings had then a straight run to the furnace, instead of having, as before, to travel some distance round and have to mix with the other returns before reaching the furnace. It appears that door was put near this 'cut-through' and at the very time of the explosion some further alteration was being made to the at the spot, and although these changes would no doubt improve the ventilation in the upper workings, it was a grave mistake to make a material change to the return air courses until the fan was erected and the furnace abandoned, as a slight increase in the quantity of gasses either from a small blower or from the fault would necessarily float directly onto the fire and cause an explosion. From the position in which the coal getters clothes and tools were found, there can be little doubt that a shot had been fired in the return air course, and the general opinion at first was that the gas had fired at that shot but however reprehensible it was to fire a shot in such a place, all appearances were against the theory, for the whole force of the explosion took the direction from the pit and not towards it and past the place where the shot was fired. when this colliery was laid out it escaped the notice of the manager that the rise workings would be 170 yards higher than the bottom of the shaft and consequently would require a strong pull in the upcast shaft but the experience having taught him that lesson, a very powerful Guibal Fan was ordered, and the foundations actually commenced before this calamity happened."

The Coroner asked the jury to retire to consider the verdict and they returned the following verdict-

"The men lost their lives through an explosion of gas but how and where it accumulated or where it was exploded, we have no positive evidence to show. We find also that there does not appear to be any blame to be attached to the management of the pit."

Following the Inspector's Report, an inquiry under the 32nd. Section of the Coal Mines Regulation Act as to- '*whether James Henry Price was a fit and proper person to hold a certificate of competency under the said Act*' was held before William Spooner, Esq., County Court Judge and Thomas Evans as assessor.

The inquiry is instituted under the 32nd. section of the Coal Mines Regulation Act, 1872 upon the following circumstances namely,

"1. That you, the said James Henry Price, are a person holding a certificate under the above-mentioned Act, and that under such certificate as manager you had the

daily supervision of the Burley Colliery, situate in the Parish of Wolstanton, in the County of Stafford, the owners of the said colliery being Messrs. Stanier and Company.

2. That on the 27th. day of March last you, the said James Henry Price, as such manager as aforesaid did not cause an adequate amount of ventilation to be constantly produced in the mine of the said colliery to dilute and render harmless noxious gasses to such an extent that the working places of the shafts, levels, stables and workings of such mine, and the travelling roads to and from such working places should be in a fit state of working, and passing therein contrary to the 1st. General Rule set forth in the 51st. section of the said Act.

3. That you the said James Henry Price, did permit the return air to be used for the ventilation of the said colliery to pass up a dumb drift and over the furnace of the upcast shaft of the said colliery. The outlet of such a dumb drift into the upcast shaft being near the fire issuing from the said furnace that there was at all times a danger of an explosion happening, if from any cause whatever, the return air used for ventilating the said colliery should become so charged with gas as to be explosive.

4. That you, the said James Henry Price, did on the 26th. day of said month of March last having such daily supervision of the said colliery permit a thirling or air passage to be cut through the north dips of the said colliery into a brow called the furnace dip by means of which the air of the north dips had its course shortened by a considerable distance, and was taken more directly up such dumb drift as aforesaid to the upcast shaft. The effect thereof being to increase the opportunity for the gas which is carried away in the current of the ventilation of becoming so thoroughly diluted by mixing with the air as it could do when its passage with the air was during a longer time throughout the greater distance.

5. That in consequence of such neglect and mismanagement of the said colliery by you, the said James Henry Price, an explosion occurred at the said colliery on the said 27th. day of March last whereby 23 of the workmen at the said colliery were killed namely, Caleb Whalley, Frederick Whalley, Edward Smith, William Bostock, Joseph Braddock, William Baggalley, James Higginson, Thomas Dale, Henry Yarwood, John Sanders, John Edwards, John Stockton, William Baggalley, Albert Handy, Henry Piper, Abraham Riley, John Taylor, Joseph Baggalley, James Mayer, Thomas Hughes, Richard Fowler, James Cork, and the lives of the other workmen at the said colliery were seriously endangered.

Dated this 10th. day of September, 1878.”

When it was proved that Price was only the assistant manager to a previous manager, Mr. Bostock, who was responsible for layout out the workings of the mine there was considered no evidence to withdraw Price's certificate.

PENDWLL. Wrexham, Denbighshire. 30th. May, 1878.

There was an explosion of gas at the colliery owned by Thomas Clayton which claimed the lives of six colliers. The pit was known as the No.6 Forsygo pit, Brynmally colliery.

The men who died were:-

Joseph Millington aged 34 years,

David Edwards aged 29 years,

Richard Powell aged, 56 years,

Ishmael Davies aged 28 years.

John Powell aged 18 years and

John Davies aged 20 years.

WOOD PIT. Haydock, Lancashire. 7th. June, 1878.

In 1878 the village of Haydock was described in contemporary accounts as small, neat and clean, considering the nature of the employment of most of the village which was coal mining and all the collieries in the village were owned by Messrs. Richard Evans and Company. On the morning of the 7th. June 1878, men started out at four and five in the morning to be at work at the coalface by six. A cyclone was approaching the British Isles from the Atlantic. Many of the newspapers of the time in mining areas around the country published articles about the dangers of mine explosions in these conditions. The Sheffield Telegraph published '*A Warning to Colliers*' and went on to say that they should take great care at work and not use any naked lights in the mines and great care should be taken with the ventilation of the mines.

As the men arrived at the pit, they went to the lamp-house for their lamps and then made their way to the pit bank to descend and start their work. The Redford family, father and three sons entered the cage when one of the bays found that he had left his tea can behind so he hurried off home to get it. He would have been annoyed at the time, but in the light of events relieved, to find that when he returned to the pit bank, the officials would not let him go down the mine as he was late. He was sent home without pay. Once at the bottom, the men made their way to their workplaces in the Upper Florida Mine.

From the pit eye, the roads to the Florida Mine sloped about one in five. The workings were reached at a depth of about two hundred yards by a road two hundred yards long that had been cut through the Red Rock Fault that caused a down throw of about fifty feet in the coal seam. the workings consisted of two short jig brows, one a little to the west of the second. there was a returning gallery leading to the head of the second jig brow and a working parallel to the first and leading to a ventilation tunnel which led into a drop-pit in the upcast shaft.

They made their way up the steep one in three roadway to the workings, ready to start work at six in the morning. During the morning there were two reports of men making their way to the surface. One had trouble with his lamp, the other with his clog. Both later reported that they had a great fear of returning down the pit, a feeling that undoubtedly saved their lives.

The day began in such a normal and routine way that no one realised that the stage was set, for what is still on record as the worst disaster in a Haydock pit and one of the worst in the Lancashire coalfield as a whole. As the work got under way, Roger Banks, of Vista Cottages, Earlestown, began his inspection of the workings. He was the deputy overlooker and he was responsible for this part of the mine.

During the morning the mine manager, Mr. John Turton, who was a well qualified and experienced man, descended the pit to make his inspection. at about ten thirty the two men met in a large brick lined tunnel which was the main haulage road and Mr. Banks made his report to Mr. Turton. It was routine and there was nothing out of the ordinary. the two men parted, Mr. Banks making his way to the workings and Mr. Turton to the pit eye.

At a little after eleven o'clock in the morning, Mr Turton had reached the surface and as he walked away from the pit he saw, to his horror, plumes of dust and smoke coming from both the upcast and the downcast shafts. to a well qualified and experienced man that he was, this could mean only one thing, there had been an underground explosion.

With total disregard for his safety. he at once ran back to the cage and ordered the engineman, Arnold Shufflebotham, to lower him into the pit leaving instructions that runners should be sent to seek out help. Once at the pit bottom he started to do what he could to improve the ventilation by adjusting the air doors. With his understanding of

the ventilation system of the mine he closed doors that had been blown open by the explosion to get the best possible supply of air to the workings.

His experience told him that there was little he could do for those caught in the initial blast, but he would know that after an underground explosion there was a more deadly danger, that of afterdamp which is mainly deadly carbon dioxide, that is formed as a result of the explosion. It says much for the courage and the steel nerves of this man that he worked so steadfastly in a desperate attempt to save as many men as he could that had survived the blast. The men he found lying near the shaft he turned on their backs so that they could breathe more easily although they were unconscious from the effects of the afterdamp. The stories of the survivors paint a vivid picture of the conditions underground and as with so many disaster stories, they are little short of miraculous.

One of the survivors, George Whitley, was exceptionally lucky because this was the third explosion that he had survived. He had worked in the mines for twenty years and at the time of the explosion was in the Lower Florida Mine but on the other side of the pit when he heard the all too familiar sound of an underground explosion. He immediately made his way down the tunnel which he took every day and which he knew well, but he had gone no more than ten yards when he was overcome by the afterdamp which he related later was 'the worst I have ever known'. He passed out twice more before he reached the pit eye where he passed out for a third time but he was found and sent to the surface, probably by Mr. Turton. He realised only too well, how lucky he had been and that in just a few more minutes he would have been a dead man.

William Green and Peter Monohan were both working at the bottom of the downcast shaft and were both knocked down by the force of the explosion and had their lamps blown out. Both were rescued by the actions of Mr. Turton.

A graphic account was given to the press by Edward Edwards, a collier. He was saying his grace prior to eating his dinner, something that he always did, when he heard the explosion. He heard a voice say, '*Lads, there's been an explosion.*' Everyone in the area rushed out and made for the bottom of the pit for they all knew and feared the afterdamp. Edwards went past an unconscious man, whose name is not recorded, and dragged him out by his feet. The man later recovered. Later Edwards related to the press, '*All the men prayed to God to help them and we prayed to. You never heard such praying in all your life. The force of the blast was terrific and I have no doubt that all those in the workings have perished.*'

Richard Bate, a dataller of Park Road Parr, was working at the top of the downbrow tunnel at the time of the explosion and was in the act of making a signal to the haulage engine. He heard a noise which was followed by a lot of smoke and dust but he did not see any fire although his face was burnt. He made his way to the side of a brick built arch but before he could get away he was overcome by the afterdamp. When he came to he was in a cart at the surface.

Thomas Sutton lived in Crow Lane, Newton, and was working as a dataller in the Ravenhead Mine, about fifteen yards from the furnace getting out coal and dirt. He was knocked off his feet by the force of the explosion but remembers getting to the bottom of the winding shaft by passing through two ventilation doors that were open. After that he remembers nothing until he was at home.

Matthew Chorley, of Earlestown, was the furnace tender and felt a strong blast of air. He was not affected by the afterdamp and made his way to the pit eye and then to the surface without incident. Matthew was the only man to get out of the pit unaided and came to the surface in the cage in which John Turton descended into the fatal pit.

Patrick Melia, of Earlestown, was a metalman working in the Ravenhead Top Delf Mine. He remembered the explosion and tried to run the two hundred yards to the shaft bottom and remembered nothing until Mr. Turton got him out and he recovered at

the pit bank. John Williams, also of Earlestown, was working as a hooker-on when he saw dust coming up the shaft and felt himself *'going to sleep.'* He fell near the knocker and came to on the pit brow suffering a little from the effects of the gas.

Martin King, of Haydock was hooking-on on the top deck in the Ravenhead Main Delf Mine when he heard a loud report and immediately lost consciousness. When he came to, he was on the pit brow. Just before the explosion he was talking to William Wilcox, one of the victims, who had told him it was just before eleven o'clock. William Howard, a dataller of Haydock was in the Higher Ravenhead Mine. He heard the report and tried to get the one hundred yards to the pit eye but was overcome by the gas. He recovered on the put bank after Mr. Turton's efforts got him out of the mine.

John Leyland, who was in the Higher Florida Mine, was rescued by his brother James who was working at the nearby Ram pit and made his way to the pit as soon as he heard of the accident. He descended the pit, found his brother and carried him on his back. He was reported to be seriously injured and not expected to recover but his name does not appear on the list of victims so it may be assumed that he lived. Thomas Wood was working with his father at the time of the explosion, inspecting a brick framework. He had a desperate struggle to get out of the pit with the afterdamp but he made it to the surface. His father's body was found near the bottom of the shaft.

As well as these thirteen a further fourteen were listed in the contemporary accounts giving a total of twenty seven men getting out of the pit after the explosion and a further ten were reported to have been got out of the pit injured.

Meanwhile the runners that Mr. Turton had dispatched for help made their way through the village. officials of the Company and a ready army of volunteer workmen began to assemble at the pit bank. Mr. C. Pilkington, one of the company's assistant surveyors and other officials on Richard Evans & Company were soon on the scene and Mr. Chadwick, The general manager of Mines for the company took charge of the underground operations.

Several local doctors arrive and one, Dr. Watkins of Earlestown, went down the pit to help the rescuers that were overcome by the gas. He later reported to the press that, *'some of the men, were too eager with their work. Many of them are searching for missing relatives and place little value on their own lives in a very dangerous situation.'* No one could work in the conditions underground for longer than ten minutes and then they had to go to the surface, often in a semiconscious state to be revived by the doctors who had now arrived at the colliery. Tea and other sustenance was provided at the pit bank.

The damage to the workings and the roadways was soon evident and about one hundred men were engaged in clearing the roadways and trying to improve the ventilation so that they could get into the workings and get the bodies out. Even at this early stage in the operations it was realised that there was little hope of anyone in the workings being alive.

By all accounts this was a dreadfully dangerous and grizzly job. Broken tubs and mutilated ponies littered the loads and had to be moved. The first of the victims that were encountered were badly mutilated with limbs and heads missing and all burnt and black. Two miners who were found at this early stage were brought out alive but badly injured. Their names are not recorded but they died soon after they were got to the surface despite the medical attention that they received at the pit bank.

As the bodies were found they were placed at the side of the road with a ticket attached to them giving them a number and saying where they were found. Since there was a great deal of difficulty and danger in removing them from the pit they were left at the side of the road. Mr. Chadwick lead the working parties and they brought in fresh air as they went along.

Many of the local colliers arrived at the pit to offer help. Richard Evans was there and Mr. Smethurst of Messrs. Dewhurst, Hoyle and Smethurst went down the pit to

give practical assistance and advice. together they inspected the mouth of the return tunnel, at the entrance to which was the ventilation furnace which, by some quirk of circumstance, was still alight. As the mine was full of methane gas, it was considered prudent to extinguish the furnace so as to remove any cause of a second explosion and this was done at once.

As Mr. Smethurst ascended the pit, he met Mr. Crippen of the Bryn Hall Collieries and Mr. C. F. Clarke of Garswood Iron and Coal Co. who had just arrived to offer their services but it was seen that Mr. Chadwick was capable and fully in charge of the underground operations. When Mr. Chadwick had organised the work below ground and he was satisfied that all was going well, he returned to the surface.

Periodically, men engaged in the search party were brought to the surface suffering from the effects of the afterdamp. They were attended to by the doctors that had arrived on the scene, Dr. Simpson of Haydock, Drs. Twyford, Jameson, Tatham and Martyn of St. Helens and Dr. Mather of Ashton were all there.

The news of the disaster spread slowly through the village. the villagers were aware of the flurry of activity as the runners went back and forth with messages but few realised the reason for all this activity but as they became aware that something was wrong a small crowd began to gather round the pit bank. Due to the fact that the workmen's homes were scattered over a large area, Earlestown, Ashton and Haydock in the main, it was only late in the afternoon that the news reached the houses and expected loved ones did not return home from work.

A large crowd began to gather at the colliery and the all too familiar scene that had been repeated at colliery accidents up to modern times began to unfold. A scene of a crowd of silent anxious men and women, mainly women standing around feeling so helpless the strain of the awaiting showing on their faces. Sergeant Gardiner, the local policeman had little trouble with the crowd who were stunned with shock. There was little external evidence of the carnage underground. The pit gear which stood over the downcast shaft and was used for winding men and coal was intact and usable to wind men and materials. The upcast shaft had the furnace light at the bottom and could not be used to wind men and materials.

Underground rescue teams were beginning to see the scale of the destruction. All the stoppings had been destroyed and this had put an end to the ventilation of the mine. There was still a lot of afterdamp but increasing amounts of methane were issuing from the workings. The presence of gas, of course, posed a serious problem to the rescue teams and according to contemporary prints, a primitive form of breathing apparatus was used by the teams although there are no accounts of its use in the surviving records.

The work continued throughout Friday evening. By this time it was realised that there was no hope of finding anyone alive in the workings and the main objective was to get the bodies out as quickly as possible. At this time it was thought that there were as many as two hundred and thirty victims but this was only an estimated number and there was confusion over the exact figure.

There had been about two hundred and thirty lamps given out at the beginning of the shift but the exact figure could not be given. The lames were issued to the men from the lamp house when they had been cleaned and serviced by women and boys. They were issued by Mr. Millington who was killed in the explosion so the exact total could not be ascertained. As Friday drew to a close, men were still working underground, having found twenty bodies and the silent waiting crowd on the surface gradually lost hope of seeing their loved ones alive again.

Early on Saturday, Mr. Hedley, the Assistant Government Inspector of Mines arrived at the colliery. The district Inspector of Mines, Mr. Henry Hall was away at a conference in France at the time but he came back as soon as he heard of the disaster to arrive at the colliery a week later. His deputy was investigating an explosion at Mold in North

Wales at the time and so it fell to Mr. Hedley to be the first Government representative at the scene. At about six o'clock on Saturday, the first jig brow was reached but the ventilation was poor and the presence of methane showed in the miners lamps on the exploring party. With the possibility of another explosion it was decided to withdraw. For two hours working parties tried to improve the ventilation but all they had to show for their efforts was the recovery of two more bodies believed to be Edward Waterworth, a married man with six children and his son Henry aged twenty one who worked as his drawer both of New Boston, Haydock.

As the furnace had been extinguished, it was realised that there would not be enough ventilation for the teams working in the mine. To try and increase the ventilation a bucket chain was formed to pour cold water down the downcast shaft and a steam jet was installed in the upcast shaft. Even so it was found that three thousand cubic feet of air a minute was being lost and the underground teams were unable to cope with the large volumes of gas that they encountered.

An underground meeting of engineers was held at the furnace in the High Delf Mine. Present were Messrs Hedley, Chadwick and Pickard, the Miner's Agent and managers from Pemberton and Bickershaw collieries and Cross Tetley & Co.. Three possibilities were considered at the meeting. One to relight the furnace, secondly to put in additional steam jets to those already being used and thirdly to fit a powerful fan to try to clear the gas from the workings. At about four on Saturday afternoon the meeting was adjourned to the surface. The first was considered too dangerous with so much gas in the mine and if a fan was erected, then all the underground work would have to stop. The decision was taken to introduce more steam jets in the upcast shaft and the work was completed by eight on Sunday morning.

The work of clearing the roads and recovering the bodies could then continue and the exploring parties under the direction of Mr. Chadwick, Mr Dickenson, another Mines inspector that had arrived at the colliery to offer assistance, Isaac Billinge the manager of Leigh Pit in Haydock and had lived through two other explosions at that pit and Messrs. Hedley and Pickard went below. The conditions were appalling and extremely dangerous and the morale of the men took a serious set back when one of the rescue teams, James Callaghan of Ashton, was buried under a sudden fall of roof. He was working at the entrance of a tunnel to the Florida Mine and was completely buried by the fall. He was quickly dug out and found to have sustained two broken legs and to be severely crushed about the body. He was taken to the Cottage Hospital in Sutton St, Helens where he died later that night. He was aged twenty seven years and lived in Lodge Lane. Ashton with his wife who did not enjoy good health and a ten year old son who was on the pit bank when his injured father was brought out of the pit.

On the Saturday morning the Inspector of mines received a telegram from Mr. Cross, the Home Secretary which read:-

"Make all efforts to save survivors, if any, at risk. I await particulars with deep anxiety. Express deep sympathy for me. You will of course, communicate with me fully."

Mr. Hedley replied:-

"We have done our best to save life, but unfortunately, all hope was lost from the first. We have had consultations with the engineers as to the best means to recover the bodies, the owners and all interested thank you for your sympathy."

The men were still working below, building brick stoppings to cut off the ventilation to the other mines so that all the available air could pass through the workings of the Florida Mine and during the night, under the direction of Mr. Hedley and Mr. Pickard, the stopping of nine inch brickwork were put in. By these efforts the flow of air passing thorough the workings rose to twelve thousand cubic feet per minute.

Mr. Chadwick was pleased with the progress and considered a fourth steam jet. He went home at ten o'clock at night leaving instructions for the upcast shaft to be covered

with three inch planks so that the cold night air would not condense the steam from the jets and all the return air to be sent up the upcast chimney.

The Reverend Sherlock, the Vicar of Haydock, had spent most of the day at the colliery and visiting the men who had survived, in their homes. His sermon on the Whit Sunday captured the sombre mood that prevailed in the village. The tone was simple and sympathetic as he spoke to his flock as one who shared their grief and desolation.

At the morning service at St. Thomas's in Ashton, Rev H. Siddall also spoke of the disaster. Two of the survivors were in the church. Aaron Marsh and James Heaton gave public thanks to almighty God for their deliverances. the congregation was deeply affected by the tragedy and the Rev, Siddall had great difficulty in getting through the service. He spoke of the trials and tribulations of life.

Both Rev. Sherlock and Rev. Siddall knew that the death of a collier caused great hardship within the family but, as we shall see, later the disaster caused such a great deal of public sympathy that many donations were made to the Relief fund for the victim's families.

Monday 10th. June brought developments at the pit. During the night a forth steam jet had been rigged in the upcast shaft and this was successful in drawing in more air through the pit. Steady progress was made with the brickwork stoppings. Mr Hall the government Inspector for the area had now arrived at the colliery and he and Mr Chadwick supervised the work with the Inspector for the Manchester area, Mr Dickenson. The work went well but proceeded with great caution as there was still a very large amount of gas flowing into the workings.

The top of the jig brown on the working side of the mine was reached on Monday morning and it was possible to start the recovery of the majority of the bodies. the scene that met the rescuers was one of utter devastation and destruction. stoppings, Bratticing and large sections of roof which had fallen due to the supports being blown out. The bodies of the men and horses were scorched, blackened and mangled, many had had their clothes burned off, some had been blown round the workings, coming to rest on the top of the large falls of roof. these large falls were left even though it was thought that there might be a body under them and only the bodies that were easily reached were taken to the pit bottom. They each had a ticket attached to them to say where they were found and assigned a number. The position where the body was found was marked on a plan of the mine.

By eight on the Monday morning, nineteen corpses were at the pit bottom and they had been removed to the surface by eight thirty. Great care was taken so as not to cause the waiting families any undue suffering. a minimum of activity was made as they arrived at the pit head and once on the surface they were carefully hidden and taken to a waiting railway truck, to a point south of the winding apparatus and from there by colliery carts and wagons were waiting to take their sad burdens across the fields to the stable yard near the main colliery offices of Richard Evans & Co. which was used as an emergency mortuary. The more usual route through the village was avoided.

At the temporary mortuary in the stable yard, women of the village volunteered to clean the bodies and lay them out on wooden trestle tables that had been erected. Men made the coffins in the workshop across the yard and the cleaned bodies, after being made presentable as possible, were place in them. The clothes that had been found with the body were place at the foot of the coffins.

This sad task was completed by noon and by this time a dense crowd had gathered round the doorway waiting until they were told to enter and try to identify their husbands, sons and friends. They had waited along time and not even a heavy thunder storm had dispersed them. the men stood silent with downcast eyes that seemed glazed with grief and the women rocked themselves back and forth as they walked around aimlessly.

As the bodies were brought out of the mine and identified the County Coroner, Mr. Driffield opened the inquest into the disaster at the Rams Head hotel in Haydock. Evidence of identification of the victims was taken from the person who had made the identification and an order for the interment was then made by the coroner, the family were then allowed to take the body home and make the funeral arrangements. Within two hours only three coffins remained unclaimed. Some coffins were taken away on a hearse but the majority were borne on spring carts with sad eyed men and women around them as they made their way to Earlestown, Ashton or the scattered rows of cottages in Haydock.

More sad tales were emerging. The drawers were in many cases, known only by their nick names such as 'Slop', 'Canary' and 'Jo' and their real names were known only to the collier with whom they lodged so they could be identified only by a surviving member of the household. It was realised that the Boon family had lost five members and probably six. A woman who lost two sons in this explosion, had three sons in the Queen pit explosion, two of which were killed but the third escaped and died later of smallpox.

Many of the victims came from the Mold area of North Wales and a young woman is reported to have arrived at the railway station at Earlestown and started making enquiries about the fate of her husband. Some of the dead from this area were sent home in a special train.

It became clear the Edward Sutton of Ashton, who was in the Main Delf Mine at the time of the explosion, took the wrong way out of the pit, got lost and became a victim of the afterdamp. All the men that were working with him at the time escaped safely. When his body was discovered he was described as a 'noble figure with a calm face that was so striking' in a report in the Wigan Observer and Advertiser.

As the day drew to a close, twenty four bodies had been recovered and only three remained in the mortuary as yet unidentified. The only good news to reach the village that day was that Queen Victoria had heard of the disaster and instructed the Home Secretary to send a telegram to Mr Hall. The telegram read:-

"Her Majesty, has, through the Home Secretary, made inquiries and expressed Her sympathy with the sufferers of the calamity."

The telegram was posted outside the colliery offices and the text of the message was soon passed round the village by word of mouth.

The roads of the parish were lined with women and men dressed in black standing in silent tribute to the victims as they made their last journey. The Newcastle Chronicle reported that :-

"The Lancashire workman is always anxious that due respect should be rendered to the remains of the dead, and the clergy and the philanthropists of the district have continually protested against the ceremonial indulged in on such occasions but with little result in causing its discontinuance."

The majority of the funerals were conducted in true local style with a gathering of friends and relations. Not even very heavy thunderstorms could prevent the living giving the dead a 'reet gud send off'. The funeral of William Wilcock aged sixty one, was typical and took place on the Tuesday afternoon. The oak coffin was laced in a plumed hearse drawn by two black horses and the mourners were carried in five coaches the three miles Ashton for the interment at St. Thomas'. Many coaches and carts passed about the village carrying men and women dressed in black and a sombre and hectic day it must have been with eleven being buried at St. Thomas' and two at Ashton St. Oswald's. At each service some two or three hundred joined in the hymns with their heads uncovered to the pouring rain, but there was little wailing. The Newcastle Chronicle reporter puts this down to the fact that:- *'miners are undemonstrative and it appears 'soft' to show signs of grief but their self restraint is marvellous but it could well*

have been the effect of mass, numbing shock in the minds of all those present at the services.'

Thomas Skidmore, who was a member of the Haydock Colliery Brass Band, was buried at St. James', Haydock and the band played the Dead March from Saul. As the coffin was being lowered into the grave, one of the band stepped forward and placed Thomas's instrument on top of the coffin to be buried with him.

At the colliery the teams had passed the gob and were making their way towards the workings with caution as there was still a lot of gas present. The engineers present had a hurried consultation and it was deemed too dangerous to proceed as it would take only one faulty lamp to cause another explosion. It was resolved at the meeting that the mine should, for the time being be evacuated. This was done, leaving one or two volunteers below who would monitor the gas.

Above ground, the engineers decided to add yet another steam jet to the ones already working and it was decided to add a fan. The extra steam jet was fitted during the night and Mr Barnes of the Atherton Collieries, who was a former manager of Wood pit. He was put in charge of procuring a suitable fan. He obtained a large centrifugal Schiele fan of the type that had been used in British mines since about 1860 from a Manchester manufacturer. It was brought to Wigan by train but in the meantime another fan had been found in a local colliery and the installation of this was well advanced when the fan arrived from Manchester. More steam had to be raised to keep the extra jets working and all available boilers were fired to do this even the locomotives in the colliery yard were used to supply extra steam.

Reports of the men underground said that the air flow was increasing and the gas was being cleared from the workings and the parties went down the mine to continue the work of recovering the bodies. Mr. Chadwick had been taken ill and he did not return to the pit until the 21st. June when about one hundred and sixty bodies had been recovered and taken out of the mine but tragedy and danger were not very far away.

The process of identification was going on in front of Mr. Driffield at the Rams Head hotel and as the bodies came out of the mine the problems grew. Most of the bodies had been under large falls of roof for some time and identification was difficult.

The awful job of cleaning the victims and laying them out in the makeshift mortuary continued but the conditions were becoming dreadful. A strong solution of carbolic acid had to be used as a disinfectant and the smell of this mixed with the smell of death made the atmosphere heavy and stagnant. Many of the victims were burnt and blackened, limbs were missing and many had their hands stiffened and burnt in front of their faces as if in the last act, they were trying to protect themselves against the fire that they must have seen sweeping towards them.

The volunteers did their best to spare their friends and relations by doing the best they could in the circumstances, but the identification was often by some mark on the body or from the pile of clothing nearby.

One young woman told the police that she hoped to find her husband by a mark on his left hand that always stayed white, even when he returned from the pit. Some people, although grief stricken, were calm and composed as they looked at the bodies but others were overwhelmed by the gruesome sights of their dead loved ones. One woman, a baby clasped to her, fell onto the body of her husband and could not be pacified.

When the last body had been recovered, hundreds of men had spent thousands of hours in the work and the workings were sealed. The rescue work had cost the life of one man and all that now remained was for the inquest to determine the cause of the explosion.

The men who died were-

John Molyneaux, aged 20 years, dataller who lived in Old Boston, Haydock.

James Higson, aged 19 years, waggoner of Dig Nook, Ashton.
William Jameson, aged 15 years, pony driver of Derby. St. Earlestown.
Edward Sutton, aged 46 years, dataller of Town Green Ashton who left a wife and four children.
William Winstanley, aged 12 years, coupler of Battersby Row, Haydock.
William Wilcock, aged 61 years, dataller of Kenyons Lane Haydock who left a wife and four children.
Thomas Winstanley, aged 13 years, pony driver of Mill Lane, Ashton.
Thomas Shaw, aged 22 years, dataller of Earlestown. His brother James was also killed.
William Unsworth, aged 23 years. He worked as a jigger.
James Leyland, aged 40 years, collier of Newton Common, Newton. John Jones was his drawer.
Joseph Hindley, aged 13 years, drawer of Old Boston, Haydock who left a wife. He was identified by his mother, Mary who lost two other sons, John and James in the explosion and another son and her husband in the Queen Pit explosion a few years before.
Henry Waterworth, aged 23 years, drawer of New Boston, Haydock. He was buried with his father and his brother.
Thomas Dixon, aged 48 years, jigger of Twenty Eight Row, Haydock who left a wife and two children.
William Smith (snr.), aged 33 years, dataller of Heath Road, Ashton, who left a wife and three children.
William Smith (jnr.), aged 19 years. He was identified by his father Henry, a spinner from Golborne.
John Evans, aged 23 years, collier of Regents Road, Earlestown. He left a widow and four children.
William Hindley, aged 12 years. He is listed as a pony driver.
James Griffiths, aged 14 years. He was identified by his brother John who was a waggoner at Wood Pit but had not gone to work because of a festering finger. James was a hooker-on.
James Barnes, aged 30 years, dataller from Cross Street, Earlestown who was identified by James Livesley.
John Evans, aged 14 years. Hooker-on of Viaduct Street.
Henry Waterworth, aged 23 years, dataller of New Boston, Haydock who left a wife and child.
Edward Waterworth, aged 50 years, collier of New Boston, Haydock who left a wife and six children. His sons Thomas and Henry were also killed in the disaster.
Robert Rowland, aged 20 years, drawer of Viaduct Street, Earlestown.
Evan Meredith, aged 36 years, collier of Newton Common who left a wife and four children.
John Hindley, aged 12 years, jigger of Haydock who was identified by his mother, Mary and buried with his two brothers James and Joseph.
Jonathan Rowley, aged 35 years, collier of Lyme Street, Haydock who left a wife and six children one of whom, Henry was killed in the explosion.
Enoch Booth, aged 25 years, collier of Haydock.
John Hughes, aged 40 years, drawer of Regents road, Newton who left a wife and six children.
Thomas Pilkington, aged 26 years, collier of Kenyons Lane, Haydock. He left a wife and two children.
Daniel Wilson, aged 26 years, drawer of Lime Kiln Lane, Ashton.
James Whittle, aged 62 years, dataller of Old Boston, Haydock who left a wife and two children.

Richard Evans, aged 20 years, collier of Abbots Houses, Haydock.
Thomas Clare, aged 37 years, collier of Gibraltar Row, Newton. He left a wife and five children.
John Blinstone, aged 20 years, drawer of Newton who was a single man.
John Knowles, aged 23 years. a collier of Barnes Row, Haydock.
James Wild, aged 23 years, collier of Penny Lane, Haydock. He left a wife and two children.
John Pilling, aged 24 years, collier of Greenall Row, Haydock.
James Pierpoint, aged 28 years, drawer of Penny Lane, Haydock for James Wild.
William Turncock, aged 28 years, collier of Twenty Eight Row, Haydock. He left a wife and four children.
Thomas Skidmore, aged 24 years, collier of Twenty Eight Row, Haydock.
Edward Evans, aged 40 years, collier of 30, Viaduct St., Earlestown who left a wife and five children.
Thomas Reed, aged 36 years, dataller of Gibraltar Row Newton. He left a widow and two children.
James Fairhurst, aged 41 years, collier of Rams Head Row, Haydock who left a widow.
William Fairhurst, aged 27 years, dataller of Crow Lane, Newton.
Thomas Whittle, aged 20 years, collier of Old Boston, Haydock.
Joseph Norbury, aged 44 years, collier of Old Boston, Haydock who left a wife and two children.
Thomas Waterworth, aged 12 years. Of New Boston, Haydock who was employed as a balancer.
Martin Roach, aged 22 years, dataller of Leigh St., New Boston, Haydock.
John Murphy, aged 17 years, drawer of Robins Row, Newton, who was drawer to Richard Evans.
Thomas Arnold, aged 25 years, drawer of Market Street, Earlestown. He left a widow and one child.
James Hindley, aged 19 years, drawer of Old Boston, Haydock who left a wife.
Peter Millington, aged 32 years, collier of Earlestown who left a wife and two children. His brother George was also lost on the explosion.
William Cunnah, aged 20 years, drawer who lodged in Viaduct St, Earlestown with Charles Evans whose wife identified William from his features and a shilling and half an ounce of tobacco that she gave him to go to work that morning and was still in his pockets.
Peter Nolan, aged 19 years, drawer of New Boston, Haydock.
George Hales, aged 32 years, dataller of Church Road, Haydock.
James Clifford, aged 21 years, drawer of Clipsley Row, Haydock.
William Dearden, aged 32 years, dataller of crow Lane , Newton who supported his aged mother.
James Dearden, aged 28 years, jigger of Clipsley Lane, Haydock who left a wife and three children.
William McGlynn, aged 16 years, drawer of Heath Lane, Ashton. He was identified by his father, Charles, who was able to make the identification from a clog which he mended for William with a piece of leather and some brattice nails two days before the explosion.
Peter Roach, aged 22 years, dataller Leigh St., New Boston, Haydock. His brother Michael was also killed.
Thomas Wood, aged 25 years, bricksetter of Dobbs Court, Ashton.
Thomas McCarty, aged 20 years, collier of Crow Lane, Newton. He left a wife and a child.
John Welding, aged 15 years, pony driver of 12, Lyme St., Haydock. His brother, William was also lost in the explosion.

Robert Hughes, aged 26 years, drawer of Earlestown. Robert was drawer to Thomas McCarty.

John Jones, aged 19 years, drawer of Viaduct St. Earlestown. His collier was James Leeward.

Llewellyn Lloyd, aged 29 years, collier of Regents Street, Earlestown who left a wife and two children.

James Thomas, aged 32 years, collier of Viaduct Street, Earlestown.

Daniel Gittens, aged 35 years, collier of America Lane, Haydock who left a wife and three children.

Michael Roach, aged 25 years, dataller of Robbins Row, Newton. Who left a wife and a child.

James Lloyd, aged 27 years, collier of Regents Street, Earlestown who was married with two children.

James Roberts, aged 15 years, pony tender of Heath Lane, Ashton.

John Evans, aged 37 years, collier of Leigh Street, Newton who left a wife and six children.

Henry Rowley, aged 13 years, jigger of Lyme Street, Haydock. His father Jonathan was also killed in the explosion.

John Jones, aged 28 years, collier of Viaduct Street, Earlestown.

John Edwards, aged 49 years, collier of Viaduct street, Earlestown who left a wife and two children.

George Cunliffe, aged 24 years. Of Old Road, Ashton who was drawer to William Roberts.

William Roberts, aged 35 years, collier of Heath Lane, Ashton who was a married man with five children.

William Boon, aged 15 years, drawer of Penny Lane, Haydock. He came from a family of four children all of whom were killed in the explosion. Isaac Boon, aged 18 years, collier of Penny Lane, Haydock. He left a wife and a child.

Thomas Boon, aged 18 years, drawer of Lodge Lane, Haydock.

Charles Redman, aged 26 years, dataller of new Boston, Haydock.

John Jones, aged 22 years, dataller of Williams Square, Newton.

James Peake, aged 14 years, pony driver of New Boston, Haydock.

Job Swain, aged 18 years, jigger of Clipsley Lane, Haydock.

John Boon (snr.), aged 42 years, collier of Lodge Lane, Haydock. John was brother to Nathan.

Edward Richardson, aged 39 years, collier of Heath Lane, Ashton. He left a wife. He worked with John Boon.

Thomas Thompson, aged 28 years. Of Lodge Lane, Haydock.

Hugh Wade, aged 21 years, drawer of New Boston, Haydock. He was a drawer for John Welding.

John Cusic, aged 18 years, drawer of New Boston, Haydock. John was John King's drawer.

James Fox, aged 27 years, drawer of Back-bridge Street, Earlestown. He was drawer to Thomas Thompson.

John King, aged 31 years, collier of Duke Street, Earlestown who left a wife and three children.

Thomas Melling, aged 22 years, dataller.

George Green, aged 15 years, pony driver of Leigh Street, Earlestown.

Peter Tyrer, aged 51 years, dataller of Old Whint Road, Haydock who left a wife and three children.

James Twiss, aged 27 years, collier of Toll Bar, Haydock who left a wife and three children.

Woodwin Jones, aged 21 years, drawer of Toll Bar, Haydock.

Peter Hughes, aged 37 years, collier of Old Whint Road, Haydock who left a wife and four children.

John Pimblett (Sen). A drawer of 27, Lyme Street, Haydock. His father, Edward was buried with him.

Peter Sharples, aged 35 years. Collier of 8, Kenyons Lane, Haydock.

Bernard Nolan, aged 27 years. Collier of New Boston. Haydock who left a wife and two children. His brother, Peter was also lost in the explosion.

William Leyland, aged 46 years. Collier of Abbotts Cottages, Haydock who left a wife.

Joseph Twiss, aged 22 years. He was a dataller of Clipsley Lane, Haydock who left a wife and three children.

James Owen. Aged 14 years, drawer of 8, Kenyons Lane, Haydock and buried with his brother, William.

George Danks, aged 24 years. He was listed as a dataller in the official list.

Matthew Fairhurst, aged 24 years, drawer of Lyme Street, Haydock. He was drawer to William Leyland.

Samuel Winstanley, aged 51 years, collier of Battersby Row, Haydock who left a wife and three sons. Two of the sons were killed in the explosion.

Joseph Cotterall, aged 27 years, dataller of Twenty Eight Row, Haydock.

Robert Ellis, aged 33 years. Dataller of Kenyons Lane, Haydock.

William Owen, aged 12 years, drawer of Kenyons Lane, Haydock.

Edward Byron. Aged 16 years, drawer of Old Fold, Haydock. He was drawer to Peter Hughes.

James Bibby. Aged 56 years, dataller of Haydock Green.

James Winstanley, aged 18 years, drawer of Battersby Row, Haydock. His brother, William and father Samuel were also lost.

John Green (jur.), aged 23 years, collier of Viaduct Street, Earlestown who left a wife.

Thomas Pimblett, aged 36 years, collier of Lyme Street, Haydock who left a wife and five children. He also lost his son John.

Thomas Sharples (jur), aged 41 years, collier of 52, Parr Road.

Ralph Ashcroft, aged 21 years, drawer of Twenty Eight Row. Haydock who left a wife and two children. His father and other brother, both named James were killed.

George Morton, aged 58 years, dataller of Clipsley Cottages, Haydock who left a wife and eight children.

James Ashcroft (snr), aged 53 years, collier of 2, Lyme Street, Haydock. He was father to Ralph and James (jnr).

James Ashcroft (jur). Aged 16 years, drawer of Lyme Street, Haydock. His brothers Ralph and his father James were also lost in the explosion.

James Whittle, aged 62 years, dataller of Old Boston, Haydock who left a wife and two children.

William Carey, aged 16 years, drawer of Toll Bar House, Burtonwood.

Joseph Green. Aged 23 years, drawer of Twenty Eight Row, Haydock who was a single man.

John Pimblett (jur). A aged 13 years, drawer of Lyme Street, Haydock. He was buried with his father Thomas.

William Welding, aged 21 years, dataller of Lyme Street, Haydock. He was employed by Hugh Wade. His brother, John was also lost.

John Redford, aged 15 years. a pony driver of Twenty Eight Row, Haydock.

James Greenall, aged 34 years, collier of viaduct Street, Earlestown.

James Dillon, aged 16 years, drawer from Lodge Lane, Haydock.

John Welding, aged 36 years, collier whose drawer was Hugh Wade.

John Conway, aged 20 years. Dataller of Derby Street, Earlestown.

George Powell, aged 35 years, dataller of 3, Alma cottages, Haydock who left a wife and three children.

Edward Pimblett, aged 43 years, collier of Lyme Street Haydock.

James Lyon, aged 44 years. A dataller of Kenyons Lane, Haydock who left a wife and six children.

Edward Rodgers, aged 37 years. a dataller of 8, Williamson Square, Haydock who left a wife and two children. His brother, Robert was also lost in the disaster.

Robert Rodgers, aged 45 years. Dataller of 57, Regents Street, Earlestown

Thomas Sharples (sen), aged 73 years, collier of Park Road Parr who was identified by James Sharples. He was the oldest casualty.

James McGovern, aged 42 years, dataller of Crow lane, Earlestown.

John Jones, aged 22 years. Of 47, Viaduct Street, Earlestown who left a wife and a child.

James Winstanley, aged 57 years, dataller of Crow Lane, Earlestown.

Michael King, aged 37 years, dataller of New Boston, Haydock who was a widower with four children.

William Walpole, aged 48 years, collier of Clipsley Lane, Haydock.

Michael Kelly, aged 27 years, collier of Barbers Square, Ashton.

Benjamin Pilling, aged 27 years, dataller of Greenall's Row, Haydock.

Thomas Harrison, aged 53 years, dataller of Mercers Cottages, Haydock who left a wife and three children.

George Millington, aged 37 years, fireman of Crow Lane, Newton who left a wife. His brother Peter was also lost in the explosion.

Thomas Stillwell, aged 19 years. A drawer of Bridge street, Earlestown. He was drawer to John Turton.

John Turton, aged 30 years, collier of Workhouse Row, Earlestown who left a wife. His drawer was Thomas Stillwell.

Richard Green, aged 48 years, collier of Leigh Street, Earlestown who left a wife and four children.

William Hughes, aged 20 years, collier of Viaduct Street Earlestown. William Smith, aged 36 years, collier of Crow lane, Earlestown who left a wife and three children.

George Swift, aged 31 years, collier of Old Nook Row, Haydock who left a wife.

John Swift, aged 29 years. He was drawer to George, his brother.

Edward Evans, aged 40 years, collier if Viaduct Street, Earlestown who was identified by his wife, Sarah who lost her husband and two boys Robert and John in the explosion.

Robert Evans. Aged 19 years, A drawer of 30, Viaduct Street, Earlestown who drew for his father.

Thomas Edwards, aged 18 years, drawer of 63 Viaduct Street, Earlestown. He was drawer to George Evans.

George Evans, aged 29 years, collier of 29, Viaduct Street, Earlestown who left a wife and four children.

Joseph Johnson, aged 14 years. Drawer of New House, Haydock.

Jonathan Johnson, aged 41 years, collier of New House, Haydock. He left a wife and seven children.

John Jordan, aged 25 years, drawer of Market Street, Newton.

John Williams. Aged 28 years, collier of Booth street, Earlestown who left a wife and three children.

George Whittley, aged 20 years. He was drawer to Thomas Downs.

Thomas Downs, aged 43 years. Collier of Viaduct street, Earlestown. George Whittley was his drawer.

Nathan Boon, aged 45 years, collier of Penny Lane, Haydock who left a wife and nine children.

William Connah, aged 47 years, collier of Viaduct Street, Earlestown. A widower who left a child. He was blown to pieces in the explosion and was recognised by a piece of rope that he used as a belt.

James Robinson, aged 36 years, collier of Twenty Eight Row, Haydock who left a wife and three children.

Richard Chorley, aged 36 years, collier of Church Row, Haydock who left a wife and three children.

William Baines, aged 35 years, collier of Old Fold Cottages, Haydock who left a wife and five children.

John Baines, aged 20 years, drawer of Old Fold Cottages, Haydock and drawer to William who was his cousin.

Thomas Burrows, aged 19 years. Drawer of Ebenezer Street, Haydock. He drew for Thomas Tyrer.

James Gerard, aged 27 years, collier of New Houses, Burtonwood who left a wife and four children. He was drawer for James Clifford.

Roger Banks, aged 41 years. The deputy overlooker at the colliery who lived at Vista Court Cottages, Haydock. He left a wife and four children.

Charles Hughes, aged 29 years, drawer of 8, Earle Street, Earlestown. He was drawer to Thomas Crawley.

Thomas Cawley, aged 30 years, collier of Pig Lane, Ashton who left a wife and two children.

Brian Lynch, aged 22 years, dataller of Garswood Lane, Ashton who left a wife and four children.

John Heyes. Aged 38 years, collier of Church Row, Haydock. Michael Whalin was his drawer.

Michael Whalin, aged 21 years, drawer of Bridge Street, Earlestown who drew for John Heyes.

Thomas Rowley, aged 15 years, drawer of 37, Lyme Street, Haydock.

Robert Kay, aged 30 years, collier of Stone Row, Haydock who left a wife and four children. His drawer was Edward Twiss.

Joseph Boon, aged 14 years, drawer of Penny Lane, Haydock. He was drawer for his brother Isaac.

Edward Twiss, aged 18 years. Thomas who was drawer for Robert Kay.

Francis Molyneaux, aged 51 years, dataller of Haydock who left a wife and five children.

John Roberts, aged 20 years. Collier of Viaduct street, Earlestown who left a wife.

Edward Manley, aged 21 years. He was a dataller and lived in Viaduct Street, Earlestown.

Ellis Roberts, aged 21 years, dataller of 147, Viaduct Street, Earlestown.

Charles Green, aged 21 years, collier of 61, Viaduct Street, Earlestown.

William Barnes, aged 51 years, collier of Blackbrook Road, Parr who left a wife and six children.

Henry Banner, aged 47 years, dataller of Lyme cottages Haydock who left a wife and seven children.

James Shaw, aged 17 years, waggoner of Earlestown. His other brother Thomas was also killed.

Arthur Gore, aged 25 years, drawer of Chandon street, Earlestown. He was drawer to Peter Melling.

The explosion and the plight of the dependants caught the imagination of the Victorian Public and money flowed into the fund from all over the country. It reached a total of about £25,000 and provided for the widows and children left fatherless by the disaster. There were still payments being made from the Fund in 1911 when the

chairman of the Relief Committee was Sir Henry Hall, retired Chief Inspector of Mines. The fund was wound up in 1930 when the remaining funds were passed to the Federation of Lancashire and Cheshire Miners. It is ironic that in the week that the Fund was wound up disaster again visited the Haydock Collieries with the Lyme Pit disaster of 1930.

The inquest was opened on 10th. June by Mr Driffield the County Coroner at the Rams Head Hotel, Haydock and the examination of the witnesses as to the cause of the explosion was begun. Mr Maule Q.C. appeared for the Home Office and Mr. Maskell Peace represented the Colliery owners. The evidence of all the witnesses who had worked in the mine before the explosion was that there was gas in the pit but not enough to cause alarm. There had been no complaint about the ventilation and working conditions and on the day of the explosion it was said that the ventilation was '*as good as ever.*'

Joseph Waterworth was called and questioned about the ventilation of the workings. It emerged that the anemometer that he used to take the measurements was not in full working order and was rather stiff giving a lower readings than it should have. A plan of the mine was introduced and Mr. Turton gave the court a full and detailed description of the ventilation system. When he finished the inquiry adjourned until Tuesday 16th July at ten in the morning.

James Dickenson of Earlestown worked as a dataller in the down brow side of the tunnel and was at home at the time of the explosion after leaving the pit at seven in the morning. He said that he had never seen any gas in the place where he worked but he had heard others talking about it in the workings. He had no fear of gas in the mine.

Nathaniel Bryant of Lamberhead Green had worked as a dataller in the mine up the slant up to the morning of the explosion and he believed everything to be in good order when he left at seven. He had been working in Samuel Winstanley's place which was ten yards from the airway and he had found that there was a good supply of air, He had found a little gas but not enough to be reported to the fireman.

Mr. Hall, the Government Inspector of Mines, said that he would like to examine the man who had given put the lamps on the morning of the disaster, but Mr. Chadwick the manager of the colliery said that after giving out the lamps the man, Mr Millington, had gone down the mine and was one of the victims.

John Turton was recalled and the previous evidence on the ventilation of the mine was read. The jury heard that Mr. Turton had tested for gas in the return airway on the morning of the 7th. and had found no gas at all. The point where he did the test was some fifteen yards from the furnace. Two fireman in the pit, James Lyon and George Millington had had reports of large quantities of gas in the mine and that it was dangerous. Both had been killed in the disaster. There was a good supply of brattice cloth and an adequate workforce to erect it. During the day there was himself, the deputy Roger Banks and two firemen too look after the welfare and safety of the men and there was an additional night fireman.

Some of the brattice had been erected in Baines's place the night before and when he was questioned about this he said the place was four yards wide and there was no difficulty in getting the air round to clear the gas. The brattice ran for about eighty yards and he believed that this would have no effect on the ventilation of the mine since there was a good road for the air both in and out of the place.

The current of air going round the Florida Mine had to travel some four thousand yards from the top of the downcast shaft to the top of the upcast shaft and he thought that the ventilation was good for the forty eight working places that were in the mine. In answer to the questions about the gas in Wilson's and Evan's places he said that he thought that there was sufficient air to clear it.

The Coroner then turned to the exploration of the workings in which Mr. Turton took part. With all the workings explored it was thought that the explosion originated in

Holding's level at the top of the rise workings. It was thought that it had originated in or near Evan's place and that the blast had roared down the slant. There were no signs that the force of the blast had gone the other way and there was no indication of a second explosion. Holding's Level and the area around it was described by Mr. Turton as *'like the back of a cannon.'* The bodies of Thomas Clare, Richard Evans, Joseph Whittle and John Pilling was found twenty to thirty yards from their working places. They had all lost their clothing and Pilling's pick was left behind at the face, indicating that they left in a hurry. The ventilation from Evan's place went to Whittle's and Clare's and from the position and the state of the bodies it was possible to deduce that something had happened in Evan's place and that had caused them to leave in a great hurry and try to make their escapes. Most of the other victims were found at their working places.

Mr. Maule asked why he thought that this was the seat of the explosion to which Mr Turton replied that the brattice was knocked down but not burnt. The gas in Evan's place came from the goaf and on the Monday after the explosion, it was still coming out to a greater or lessor degree. Mr. Turton said he had never seen so much gas from a blower and there was enough to foul the whole of the airways. He thought it came from the fault but whether from the Florida Mine or from the unworked mine behind the fault he did not know but the Downall Green Fault was very broken and could give off large quantities of gas.

Having dealt with the source of the gas the Coroner now turned the attention of the jury to the means by which the gas was ignited. In reply to a question about the ignition of the gas Mr. Turton said that people were running away from an outburst of gas and when they met the current of air, it was possible that the flame would go thorough the gauze and ignite the gas but on examining the lamps that had been recovered none gave an indication that this had happened. It was possible that one of the lamps was damaged and that the collier did not know of the damage. However none of the lamps were missing and there was no evidence to support this. Many of the lamps had been crushed by falls of roof but none had holes in the gauzes and no unlocked lamps were found in the mine. One lamp was produced at the inquest that appeared to have a red upper gauze indicating that it had got very hot. This was opened and inspected and it was found that the red was rust and that it had not been hot.. the lamp belonged to Richard Evans and was found in Holding's level, the name of the tunnel to the workings.

The foreman of the jury said that there had been previous explosions in the Higher Florida Mine in collieries in Haydock, and on the day of the disaster, the fireman had not considered it necessary to erect gas warnings in the mine. It was also pointed out that the gas reported by a previous witness was not recorded in the fireman's book. It was his duty to do so and he could not say why this had not been done. It was Mr. Bank's job to report on the day shift and Mr. Waterworth's on the night shift. In the light of what had been revealed so far at the inquest, the foreman had altered his view as to the state of the pit and he would see that every precaution to avoid danger in the future would be taken. However, he did consider the pit safe at the time or else he would not have gone down.

Mr Turton said, if the gas was ignited by the flame passing through the gauze as the men ran away, then it could be assumed that there was a large outburst of gas. All the men seem to have got some distance from their working places before they were killed. He thought that the gas came from a large blower in Evan's place and it was stated at this point in the inquiry that there was no powder used in the mine. This practice had been stopped two and a half years previously.

Mr. Turton then went on to give his own account of what happened when he realised that there had been an explosion. He went down the pit straight away and opened two air doors which sent fresh air to the men who were near the bottom of the shaft, He

thought that if he had not done so, the men would have been dead in about five minutes. he thought that there were eight or ten men in the area.

Mr. Peace, representing the colliery owners summed up Mr Turton's evidence, *'There is no doubt that the explosion had arisen through a sudden outburst of gas from Evan's place, coming from the goaf but how the gas was ignited we can not say.'*

On the Monday after the explosion. Mr Billinge had gone with Mr Chadwick and some workmen, early in the morning to put up some brattice in the top places and when the work was done he was not satisfied with the conditions so that when Mr. Chadwick went away he stayed with a few men and went alone crawling on his hand and knees without his lamp and handkerchief over his face into the goaf near Evan's place. He heard a hissing noise and bearing his face, he distinctly felt gas blowing strongly against it from the fault side.

Although he had been a colliery manager for over thirty years he stated that he had never seen a blower so strong. It was still continuing to emit gas on the Thursday but not as strongly and by now it had exhausted itself. He was of the opinion that the men had been running away from this blower and that the gas had ignited at a lamp as they ran away.

Mr. John Chadwick, the general manager of the Richard Evans Collieries was the called and questioned on the reporting procedure that was used in the Company. He said that he had not got daily reports from the pits but if there was anything out of the ordinary had occurred he was made aware of it. Every week the mangers of the individual colliers met him either personally or by letter as to the conditions in the pit. It had been some months before the explosion that he had been down Wood pit but he did go down the pits regularly and on the morning of the explosion he was down Pewfall colliery. He was told the news when he got to the surface and was at Wood pit within half an hour.

At the same time that Evans and Clare found the gas, Whittle and Blinstone had found some in their places. About a quarter of a minute would have elapsed for the gas to get to Whittle's place from Evan's so he and his drawer ran out at about the same time leaving their lamps and picks behind them leaning against the coal indicating that they were cutting at the time. They had travelled about twenty yards before the explosion. John Knowles and John Pilling who were working nearby, had a straight distance to run and had gone about twenty seven yards. All their lamps had been recovered and were in good condition but the gas mixed with the air from the ventilation would reach the level at which it would explode and the ignition could have been caused by any of these men running for their lives and having an accident with his lamp.

Mr. Chadwick then gave an account of the gas that he had encountered during the rescue attempts. Early in the morning of 10th. June he had found gas pouring out in torrents to such an extent that the work had to be suspended. On July 1st. twenty five days after the explosion gas was still flowing at a rate of 1,250 cubic feet per minute. This concluded the evidence given by Mr. Chadwick.

Mr. Joseph Dickenson, Senior Inspector of Mines, was the first expert witness to be called. He found that there was much that was not good in the layout of the mine but in his opinion there was one fatal mistake in the ventilation of the colliery. In the first place the air had to depend on too many doors and sheets through which it had to pass before it reached the workings. After reaching the working it had to sweep the workings which were being enlarged daily and as they worked, timber drawn and the roof dropped, it had to ventilate the goaf. The air then went onto the lower workings called the slants and then through the return to the upcast shaft. in his opinion the state of the workings and the ventilation were such as to make an explosion possible at any time without there being an outburst of gas.

Mr. Benjamin Bradshaw Glover. mining engineer to Mr. W.J. Leigh M.P. the lessor of the Haydock mines was the next to be called. In March he had spent four days down

the mine and was perfectly satisfied with the ventilation and thought that Wood pit was the safest in the village. He had been asked by Mr. Leigh to take his son, Viscount Vernon down a mine and he had no hesitation taking him down Wood pit. While he was down, Mr Leigh asked to see some coal gas and he had asked Mr. Banks to find some but the search was unsuccessful.

At the resumption, Mr. William Pickard the Miners' Agent was called. He had been in the mine after the explosion and was resent when most of the bodies had been recovered. Evidence was also taken from James Baines, manager of Lyme pit and from Walter Topping engineer to Cross Tetley Collieries. the evidence given by all these man corroborated that given by other witnesses.

The Coroner the declared that all the evidence was concluded and then asked Mr Peace, who was acting for the colliery proprietors to make his closing remarks. He began by saying that the proprietors and management of the colliery were distressed and appalled at the sad accident which had resulted in the loss of the lives of their workmen. He went on:-

"The disaster was entirely unexpected in a mine that gave off so little gas. it was all very well for the learned Inspector to come and say that the ventilation was conducted on an improper system. If the management had thought that the mine was unsafe, they would have withdrawn the workmen. Waterworth, the night fireman, and made his rounds and the mine was safe at six in the morning when the men started their work. With Mr Banks, the overlooker down the pit with two of the day firemen, do you not think, that if danger had been foreseen, they would have evacuated the pit? these were men on the spot and I draw the conclusion that there was a sudden outburst of gas from the fault behind Evan's place.

As to the question of the ventilation, it could not be denied that a much greater volume might have lead to clear the gas away safely. The greater volume could have been got by a different system of ventilation that was in use in other mines. The responsibility for the ventilation lay with Mr. John Turton, who you will recollect, had been in the pit on the day of the accident and had only just got up the shaft when the explosion occurred, and you the jury might fairly judge what he would have done if there had been the slightest suspicion of danger. Turton had d hardly got from the pit shaft when a shower of dust and smoke vomited from the pit mouth indicating that there had been an explosion. what did the man do? why, he descended into the very jaws of death. He went down the pit alone, unaided, in the discharge of his duty to save a many as he could of the valuable lives of his fellow workmen, and by his promptitude and energy in opening the doors in the dark, thus sending supply of air upon the faces of those nearest the bottom of the shaft, he succeeded in saving the lives of several men. Do you suppose that had man could do his duty like that, would not, had he thought that was any danger in the pit from inadequate ventilation, immediately have stopped the ventilation to the two other mines and turned all available air into the Florida Mine? If the responsible manager of the mine had known and believed that more ventilation was necessary, do you think that a man of his energy, firmness and decision would have hesitated to put more air into the mine?

This again should be contrasted with the evidence of people who had experience of what the mine was liked and what, Gentlemen, could give a more important testimony that Mr. Glover, the mining agent for the lessor. It was Mr Glover's duty to see that the coal was got in a workmanlike manner. he had been in the habit of making repeated visits to the mine, and what did he say as a person of experience and careful training. There you have proof of what the witness thought if the mine. What would carry greater weight in your minds? Did it nit show conclusively that a man of learning, experience and a man of standing and scientific practice believed it to be perfectly safe? This, I and sure, you will come

to no other conclusion, if you attach any weight to the evidence of the people acquainted with the mine with regard to the management and the desire there was on their part to render it safe for the men. Had these men believed that the ventilation was inadequate, I have no doubt that they would have done their best to secure the well being of every person employed. I will ask you now, if you would, to resist the evidence, the reported evidence, that had been tendered over and over again, that there was an enormous volume of gas given off at the fault and that it came through Evan's place and the unfortunate men lying in their death places gave testimony to what had happened. They heard some rush or felt some sudden influx of gas, rushed from their places and in their anxiety to get away, hurried along and possibly, in their haste, caused a flame to pass through the gauze of a lamp. Whether ignition was brought about in this way or by a defective lamp, or by some other means, I do not think I can ignore the force of the evidence given by people employed in the mine and the people engaged in it since, that there was an enormous outburst of gas and that had caused the explosion. Those peepholes who are not disposed to attribute the explosion to this cause, do not deny the possibility of it, and I trust, you, the jury when you come to give your verdict, will find that the explosion had come from unexpected circumstances."

After this passionate address to the jury, Mr Peace stepped down and Mr Maule, Q.C. who appeared for the Home Office took the floor to make his final summing up. He addressed the jury-

"Your duties are to ascertain the causes of the explosion and the cause of the explosion would account for the deaths of the one hundred and ninety men.

Your position corresponds with my own, you have nothing to do with the subject except the truth. The inquiry, I need not tell you, is not for the benefit of those who have gone, for those we cannot help but for the state of those who are still live and might be exposed to similar catastrophes. The value of this inquiry consists in asserting the truth which this dreadful explosion may tell us."

The jury returned the following verdict after an hour-

"We believe that there had been a fouling of the air connected by an outburst of gas or a fall of roof, but by whom the gas was ignited there is no evidence to show. The explosion was caused by faulty ventilation and by an accumulation of gas near Evan's place, which had been expelled from thence by a fall of roof, assisted by fouling, which was known to exist previous to the explosion by the firemen and others."

The Government Inspector of Mines, Mr. Henry Hall, thought the ventilation of the mine was defective. He instituted charges to be answered by Mr. John Turton the manager of the Wood pit. Mr. Turton's Manager's Certificate was suspended while the proceedings were in progress at the Liverpool Magistrates Court. All the witnesses spoke highly of John Turton and pointed out that he had not worked in any other mine except the Wood Pit. It emerged that the Inspector had not visited the pit for a long time and the proceedings against Turton were dropped and his manager's certificate reinstated.

MEADOW PIT. Cwnavon, Glamorganshire. 24th. June, 1878.

The colliery was the property of the Grovenor and Company's successors and was near Port Talbot. At the time of the accident it was listed as being the property of 'The Successors of the English Copper Company'. The wire rope broke and the men and boys went down the shaft to their deaths.

The shaft was 12 feet by 8 feet and 185 yards deep. It was fitted with wooden slides and two cages which were known as the east and the west cages and each carried six

men at a time. About seventy men and boys ascended and descended the shaft daily. On the day of the accident, no coal was raised and once in three or four weeks a little rubbish was raised in the cage. The shaft was also used for pumping water but this did not occupy more than eight hours out of twenty four and when the men were being wound pumping operations were stopped. It took about three quarters of an hour to raise and lower the men in a morning and evening. The winding engine was a second motion engine and was in good order supplied with all the proper appliances and the engineman was constantly in attendance. As well as the winding engine the engineman looked after the pumping engine.

There was a banksman at the top of the shaft to ensure that the men were safely placed in the cage and a man at the bottom with similar responsibilities. Each cage was attached to a wire rope four inches wide and five-eighths thick. The rope attached to the east cage was put on the 13th. May 1874 and the west rope in November of the same year.

At about 6.40 a.m. on the day of the disaster, the first batch of six people descended the shaft in the west cage, the second in the east cage and the third in the west cage. Up to that time eighteen had descended and all had gone well but as the fourth batch were being lowered in the east cage, the rope broke when the cage was about 85 yards from the bottom and the men went to their deaths. All of them died instantaneously.

All the dead were listed as colliers but some seem too young to be so.

Evan Parker aged 42 years,
William Lewis aged 62 years,
Thomas Jones aged 19 years,
David Williams aged 19 years,
Hugh Bennet aged 16 years and
Benjamin Roblyn aged 13 years.

The inquest was held at Cwnavon by the Coroner for Neath, Mr. H. Cuthbertson. Mr. Richard Jenkins was the colliery manager, Benjamin Jones the mechanical engineer and Thomas Jones acted in the capacity of banksman at the colliery. Mr. Thomas Wales, the Inspector directed the attention of the jury to the first and fourth special rules which applied to the manager and he thought, had a bearing on the accident. The rules stated that-

“1st. He has the responsible charge and direction of the mine, and shall strictly observe and fulfil the provisions of the Act and special rules, and cause whatever is necessary to be provided for the safety of the mine and all its parts, and for rendering those provisions and rules effective.

4th. He shall see that fit and adequate machinery, structures and materials are provided for that purpose for carrying on the mine with safety, and take care that such machinery and structures are kept in repair.’

No.50 special rule applies to the mechanical engineer as follows-

“He shall have the inspection and supervision of all machinery and structures belonging to the mine, and it shall be his duty to maintain the same at all times in good repair and order, and he shall every day (if no other ‘competent person’ is appointed by the manager under General Rule 29), carefully examine or appoint a person to carefully examine the machinery and structures used for lowering or raising of any person or thing in the mine, and he must also frequently examine or cause to be examined at proper intervals all other machinery and structures at the mine, and once at least in each week examine or cause to the pitman to examine the state of the shafts, and the bearers, curbs and landings therein, and remove all loose coals, stones, or things there from, and shall make the reports of all such examinations as the Act requires.”

No.76.Special Rule applies to the banksman and runs thus-

“He shall have full control of the persons employed at the pit head, and shall constantly during his turn observe the condition of the cages, ropes, chains, catches, and fans, and the gear used for lifting persons and things in the pit, and if he observe any defect or disorder therein, or any appearance of danger in the pit apparatus, he shall immediately stop the use thereof, and give instant notice to the engineman and mechanical engineer or other superior officer of such defect or disorder.’

Mr. Wales went to the pit and examined part of the broken rope which had not fallen down the shaft and found a large number of the wires broken and that if the rope had been examined the danger would have been found. he considered that the rope had been in use for over five years which was a time span which he considered too long for safety and commented-

“I attribute the sad loss of life to the rope having been allowed to work until it became too weak to carry the load, and to the gross negligence of the mechanical engineer and banksman in not discovering and reporting it’s dangerous condition.”

After listening to the evidence, the jury returned the following verdict-

“That the said Evan Parker on the 24th. June instant, in the parish aforesaid in the county aforesaid, was killed by falling down the Meadow Pit in consequence of the rope attached to the cage breaking. The jury further say that the officials of the colliery are deserving of censure.”

A charge of manslaughter of Evan Price, one of the dead, was preferred against Benjamin Jones, the mechanical engineer before magistrates at Swansea Assizes held on the 31st July. The trial took place before Mr. Justice Manisty on the 5th. August 1879 and resulted in an acquittal.

PRINCE OF WALES. Abercarne, Monmouthshire. 11th. September, 1878.

The colliery was about 12 miles from Newport in Monmouthshire and the property of the Ebbw Vale Company one of the largest coal and iron proprietors in South Wales. It was situated about a few hundred yards from the Abercarne Station in the Western Valley Section of the Monmouthshire Railway and worked the Black-vein Seam used in the Royal Mail Company’s service and was esteemed as one of the best coals for foreign service. It lay between two well wooded mountains Cwncarne in the east and Mynyddlesllyn in the west which rose to almost one thousand feet and produced about 1000 tons per day and about one thousand colliers were employed in three shifts.

The colliery was first sunk in 1837 and several attempts had been made to make it profitable but all had failed. The Ebbw Vale Company took over the colliery in 1859 and after introducing new machinery, the machinery from the winding and pumping was of the most perfect type and the mine was worked with locked lamps. The Black Vein Seam was struck in 1863. The present shaft was sunk in 1862 and on account of the marriage of the Prince of Wales it was named the Prince of Wales colliery and from that date the old shaft was abandoned and was used for ventilation.

The company has been free from accidents and it was considered that no human foresight could have prevented this one. The pit was worked on the pillar and stall method and it was only four months before the explosion that a downcast air shaft had been completed in the Cwyncumer at a cost of £60,000. It increased the air flow from 90,000 to 150,00 cubic feet per hour at a depth of 268 yards. A 1,000 yard drift was then made to connect it to the old workings.

The men descended the mine at Abercarne and rode and engine a mile east to the Black Vein seam in which the explosion occurred killing two hundred and sixty seven men and boys. The shaft descended at about 1 in 5 in a straight line. The shift entered the pit at 6 a.m. and should have left at 2 p.m. and there were about 350 men and boys

in the shift. The explosion occurred at 10 minutes past 12 with aloud rumbling sound, a flash of flame and a column of black smoke ascending high into the air. The winding cage was damaged and communication with the pit bottom was destroyed but work was quickly done and a party sent down. Approaches were made through the No.1 Pit which had been recently constructed at Cwmearn three miles distant. By these means it was concluded that the explosion had been general throughout the pit but there were no general indications of a particular spot where it occurred.

Eighty two men and boys who had been working near the shaft were brought out alive but the efforts to get into the workings proved that there was little hope for them. Four yards from the pit bottom were the stables and fourteen horses were found all dead but beyond this the afterdamp was too strong. The first party brought out twelve men who were terribly burnt and found seven bodies which were brought to the pit bank. Of the seven dead that had been brought out of the pit four had been identified one was the overman, Rees and three other men who had been employed in the roadways. Two men named Jenkins and Jones had been brought out alive but they died soon after from their serious injuries burns and the effects of the afterdamp. Three hundred and seventy men took lamps on the morning and a hundred had been accounted for including the dead leaving a possible two hundred and seventy dead. Dr. Rowbottom and his sons and other surgeons from the district were in attendance and gave all the aid within their power.

Mr. Cadman, the Inspector and his assistant inspector, Mr. Donald Bain, were in the vicinity of the colliery at the time and they hurried to the stricken pit. They conferred with Mr. Pond, the general manager of the colliery, and other mining engineers that speedily arrived from other collieries. Mr. Cadman descended the pit about an hour after the explosion with a party of volunteers which included Miles Mosley, Harris and Simmons. At the bottom of the shaft they found that timber and coal had caught fire and there was at least one fire some distance from the pit bottom. The roof had fallen heavily and many of the workings were filled with gas. Everything was done to extinguish the fires and get into the workings. The explorers were down the pit for five to six hours but were beaten back by gas and fire on all sides and there was no hope for anyone that was left alive in the colliery. The dilemma was of a most painful nature and the anxious crowds on the pit bank waited for their decision. There was still communication with the pit bottom and a little distance beyond this. The conference of mining engineers came to the conclusion that the mine should be flooded. The mine was flooded from the Monmouth canal with wooden shutters and fifteen inch pipes to the pit mouth and water run into the pit. The canal was on the upper side of the colliery and was separated by a wall three feet thick and the task of opening the wall was speedily accomplished. It took months before the pit was reopened and until then there was no hope of reaching the bodies.

The explosion caused national interest and letters appeared in the press. This was a letter to the Editor of *'The Colliery Guardian'*.

"Sir,

Again there is fearful loss of life caused by another explosion. No class of men, I am sure, regret these occurrences more than do mine managers and mining engineers. I have no intentions of saying anything as to how this accident took place. All discussion before the verdict of the jury is known should be avoided but what I do wish to do is, to say a few words upon the advisability of flooding a colliery to extinguish a fire.

It is well known that water is a great enemy of fire, and the face of things, it seems when brooks or canals are near at hand, flooding the mine is the most easy, certain and most inexpensive method. I have not enquired into the nature of the "loor" and "roof" at Abercarne colliery and I am but little aquatinted with the South Wales coalfield, so I am ignorant of the damage that might be caused by flooding

the workings. Many of your readers, however, might remember, after an explosion at one large colliery, the destruction caused by the water (which had been previously pumped) running into deep workings.

If continued long enough, water as now turned into the shaft at Abercarne must extinguish fire in deep workings. The questions uppermost in my mind are - (1) Are all the workings to the deep of the shaft? (2) What is the nature of the 'roof' and the 'floor'? (3) Has the great delay in re-opening the works and recovering the bodies of the men, and also the cost entailed by the present process, been taken into account?

No doubt the manager had the advice from the Inspector and others, who have held council together, but it is still the question of an underground fire, no matter what it's extent, may not be put out as effectively by other means than drowning the mine and, if so, can the workings be opened as so or sooner? The time taken to extinguish a fire by water can easily be calculated but not so that required to pump the water back from the shafts and workings, and unless there be an exceptionally good roof, the falling in of the roads and working is very large.

It was proved in the Oaks in 1866 that if the whole of the colliery had been flooded, a portion of it's deep workings were, nine-tenths of the works never have been re-opened or the bodies recovered. Indeed this had not been done in the extreme deep to this day, the bodies remaining where they fell in 1866. In case of fire, the best thing I hold to be done is to seal hermetically all the entrances to the mine.

The colliery just mentioned was on fire in several places. No less than seventeen explosions took place, some of which were of terrific violence. Instead of turning water (which was within 150 yards of the pit mouth, two of the shafts, the upcast and the down cast, were filled with rubbish for 100 yards, after which clay was thrown down, and proved to have made the shaft air-tight by water accumulating on the top. The third shaft, No.2, was left open for several days, after which a large scaffold, made to fit the shaft and constructed of oak and iron, was lowered down for 100 yards. Into the scaffold an escape-pipe 10 inches in diameter was fitted and on this boughs of trees were thrown, and on these clay again on the top, and lastly, water, to thoroughly seal the shaft. Thermometers were from time to time lowered down the shaft to test the temperature, and an anemometer was also used to measure the escape gas. These were the means take to extinguish the fires at the Oaks colliery. The effect is well known, as no signs of fire were seen at the re-opening. I do not know if the workings of this colliery were of a less extent than those of Abercarne, but places were found where three-quarters of a mile from the shafts coal had been burnt and coked five feet into the solid sides. The above proves what can be done to put out fires without water, and so guard against the roof being washed down and burying the bodies in the mine.

That is still the question which should be the method used to extinguish such fires in proved by the caution taken in the present disaster, though the experience gained at the Oaks points to the method of choking as the best suited for an underground fire.

Yours &c.,

GEO. BARKER

Bedworth, 17th September 1878."

At the time of the explosion there were three hundred and fifty men below ground and almost one hundred came out of the pit alive. Of the two hundred and fifty seven that were killed, one hundred and thirty one were married, sixty seven single, fifty nine were boys under eighteen years of age and four were widowers.

Those who lost their lives were-

The colliers from No. 21 District who were killed-

James Lovell
William Lagg
William Lewis
Edwin Davies
Thomas Davies
Henry Davies
Henry Owens
George Abams
John Lee.
James Hancock
George Watts
John Coker
Thomas Morgan
John Evans
Thomas Evans
John Rowe
Thomas Williams
Solomon Jones
Johnathan Williams
Benjamin Coward
William James
John Hodges
John Hodges jnr.
George Giles Coombs
Griffith England
William Downs
John Everett
James Whatley
Frederick Dole
Thomas Nelmes
Charles Nelmes
Henry Quick
James Quick
George Osborne
Thomas Jones
Isaac Watts
John Matthews
George Evans
Thomas Ashman.
George Eatwell
William Hooper
George Sheppard
Robert Osborne
Henry Cartwright
Herbert Cartwright
William Morgan
James Griffiths
Henry Cooksley.
William Jones
John Macarty
Thomas Smith
John Williams

Joseph Clifford
William Clifford
William Arnold
William Preece
David Thomas
Thomas Phillips
Richard Stephens
John Stephens
Isaac Williams
William Henry Davies
William Games
Joseph Railton
Henry Gillingham
Frederick Stephens
George Meredith
Henry Meredith
Frederick Chin
George Oxford
Henry Williams
Oliver Hibbs
Edwin Evans
Joseph Moore
John Chapman
James Price
Henry Downs
William Terrill
Job Webb
Thomas Webb
Henry Knight
Thomas Williams
Charles Jones
Thomas Franklin
William Symonds
William Henry Symonds
Samuel Moreton
Isaac Bath.
John Carter
Frederick Chaddick
Thomas Henry Symmonds
John Evans.
Silas Smith.
James Smith.

The hauliers who were killed in the No 21 District-
Micheal Regan
John Regan
Thomas Phillips 1st.
David Evans
William Phillips 1st.
William Phillips 2nd
William Jones 1st
William Jones 2nd.
Thomas Davies

George Gleade
William Jenkin Thomas
William Allen
Gilbert Gleade.

Other dead from the 21 District-

Joseph Gay, overman.
Henry Terrill, fireman.
William Young, roadman.
John Cridland, lampman.
William Whatley, labourer.
William Williams, labourer.
John Beard, labourer.
John Bakerton, shackler.
George Brooks, shackler.
Thomas Watkins, shackler.
Albert Wilcox, rope connector.
George Payne, light carrier.
William Lewis, master haulier.
Samuel Powell, sweeper.
Henry Nicholas, sweeper.
Alfred Webb, sweeper.
Richard Abram, door boy.
Frank Whatley, door boy.
Samuel Terrill, door boy.
Thomas Phillips 2nd., door boy.
Elihu Gay, door boy.
Edwin Williams, door boy.
Gwyllym Evans, rope connector.
William Terrill, rope connector.
Sydney Watkins, sweeper.

The colliers killed in the 17 District-

John Games
Reece Howells
William Edwards
Thomas Tyler
William Rogers
Henry Sanders
David Beachy
David Thomas
Thomas Lewis
David Davies
Thomas Palmer
William Palmer
William Morgan
Charles Greenland
George Lloyd
Charles Baker
John Franks
Thomas Noot
Thomas Noot jnr.
Frederick Carlton

Lewis James
George Hillburn
William Hillburn
John Jenkins
John Reynolds
Augustus Thomas
David Thomas
Thomas Abrahams
George Abrahams
Henry Portray
Edmond Jones
Thomas Waters
Henry Watts
Alfred Davies
John Williams
Edward Williams
George Coles
Arthur Harris
William Marshall
Charles Moore
Elias Nicholas
James Poelry
Richard Williams
Aaron Winters.

Hauliers dead from the 17 District-

William Harlowe
James Davies
Henry Budd
William Carter
David Rees
David Griffiths
John Lewis.

Other dead from the 17 District-

Edwin Bethel, underviewer.
David Rees, overman.
Thomas Phillips, fireman.
John Lewis, master haulier.
David Jones, master haulier.
Alnbert Watkins, roadman.
William Brown, light carrier.
William Meyrick, shackler.
Henry Waters, shackler.
Robert Noot, door boy.
Henry Charles Jennings, door boy.
Albert John Symonds, door boy.
John Harris, door boy.
Israel Lewis, repairer.
John Davies, repairer.
William Stone, repairer.
Jacob Williams, repairer
Joseph Lewis, repairer.

Colliers killed in the 4 District-

Joseph Jones
Daniel Williams
William Williams
John Matthews
Joseph Lewis
Rowland James
Edmund Williams
John Colley
William Colley
Thomas Wilks
David Anthony
Thomas Walters
Thomas Walters jnr.
Daniel Williams
Alfred Wells
John Rees
John Havard
Richard Sanders
Morgan Bowden
Thomas Rogers
John Newbury
William Howells.

Other dead from the 4 District-

James Harris, fireman.
William Davies, master haulier.
William Davies jnr., haulier
John Edwards, haulier.
John Williams, haulier.
John Daniel, haulier.
Joseph Hooper, haulier.
David Davies, shackler.
Isaac Matthews, labourer.
William Snellgrove, labourer.
Thomas Williams, repairer.
Isaac Sheppard, repairer.
James Brown, repairer.
Edward Symonds, repairer.
Thomas Haycock, repairer.

Found dead at the pit bottom-

Joseph Jordan, foreman.
Benjamin Games, engineman.
Henry Golding, hitcher.
Nathaniel Jones, hitcher.
William Hopper, hitcher.
John Beak, hitcher.
Edward Jenkins, haulier.
Henry Powell, haulier.
James Payne, haulier.
John Gough, haulier.

Thomas Phillips, ostler.
Richard Richards, ostler.
John Hall, ostler.
Charles Nicholas, ostler.
Joseph Cains, lampman.
John Regan, oiling.
Charles Cudland, dickey rider.
William Williams, light carrier.
William John Williams, haulier.
John Edwards, collier and
Isaac Madley, haulier, from the 22 District were also killed

Those who survived-
Colliers from the 17 District-
Hezekiah Harvey
Harvey
Thomas Games
Solomon Morgan
Israel Bateman
David Lewis
Samuel Toplass
Francis Morgan
Morgan
Thomas Williams
Williams
John Lavender
Seth Sheppard
Charles Roberts
William Gerrish
Thomas Smith
Alford Davies.
Thomas Bryan.

Colliers from the 2 District-
William Prosser
John Cook
George Carter
Thomas James
William Pritchard
Thomas Gooding
George Lewis
Jonah Jones
W.H. Jones
John Fletcher
John Knight
William Dobbs
John Baker
James Speed
James Nicholas
John Davis
George Moon
William Anthony
Thomas Meredith

William Davies
Matthew Morgan
John Morgan
John Owens
Thomas Powell
John Davies
William Davies
Thomas Eatwell
Anthony Dew
John West
William West
Henry Lewis
James Bassett
John Sweet
John Jones
Joseph George
Thomas Waters
William Jenkins
Morgan Morgans
Thomas Allsop
Allsop
William Williams
John Williams
Richard Edwards
John Evans
Lemuel Charles
Daniel Jones
Henry Carter
William Jones
James Absolom
David Absolom
Thomas Jones
Emmanuel Sheppard
John Evans.

Others saved from the 2 District
George Ashman, master haulier.
William Davies, haulier.
Edward Haycock, haulier.
Richard Williams, dickey rider.
Michael Richards, repairer.
David Davies, repairer.
William Mansfield, mason.
Charles Mansfield (boy), mason
John Morgan, door boy.
Thomas Osborne, oiling.
John Jordan, engineman at the pit bottom.

Of those who were saved from the pit, all got out alive came from the No.2 District but no one came out of any of the other districts.

The victims left one hundred and thirty one widows, three hundred and sixty three children fatherless, eight parents and sixteen brothers, a total of five hundred and nineteen dependant persons. At the time it was calculated that at 5/- per week it would

cost £6747 per annum to give them relief. There was a public subscription by the Lord Mayor of London which raised £400.

The inquest was opened in Abercarne by the Coroner Mr. W.H. Brewer on the nominally on the body of John Hall, aged 35 years, who left a widow and six children. The inquest was adjourned.

Repairs were commenced as soon as they got to the pit bottom and everything was done to reach the bodies. Work went on day and night to clear the airways but the Ebbw Vale Company had to stop for lack of funds but the pump was kept running to prevent the mine filling with water. The No.4 Donkey Road engine house was cleared for five hundred and forty yards and the 21st. District was thought to be the seat of the explosion.

At the resumed inquest many of the witnesses spoke of gas in the No.4 district on Friday to Monday previous to the explosion. A squeeze in the roof and falls had occurred and gas had been found. Prompt measures were taken to make the place safe and before Wednesday, the day of the explosion it was thought that the place had been made safe. The pit was known to be a fiery pit and the 21st. District was the warmest part of the mine. Gas had been found before and the men had been withdrawn while the gas had been cleared by the officials.

The mine was worked by double stall and the openings in the coal were sixteen yards apart, taking each road one on each side. The space between the roads were sometimes only partially filled but when these had been driven for sixty yards the opening was tightly filled and packed up. This system of working was changed to longwall working which got all the coal except for three feet which were left for the roof. It was thought that there would be less space needed and that the ventilation would be improved by using this method. Some of the longwall places were not filled and this gave spaces in the waste in which gas could accumulate.

The mine was managed by a resident, certificated manager and another certificated manager for the general supervision for all the mines, visiting them and checking with the managers. Mr. Peter Higson, a mining engineer of Manchester, acted as a consulting engineer and visited the colliery each month.

A few years before the explosion the ventilation was not considered satisfactory and it was decided to sink a third shaft. This was done and the communication road to the workings was completed in the April before the explosion. The pit was two hundred and fifty yards deep and twenty feet in diameter and was called the Cwmarn pit. In Mr. Higson's opinion it would have been better if the shaft had been used as an upcast shaft but the engineers at the colliery decided to make it the downcast and take air that would mix with the other downcast, go through the workings and then go up the upcast shaft. To make it a upcast would have been increased costs. After the work had been completed it was noticed that the 21st. District, which was the furthest away and the most difficult to ventilate was hot.

Mr. Higson inspected the pit in March and he did not find any gas and all was in good order. His last inspection was on the 21st. August, one month before the explosion when he stated that it was the best he had ever seen.

Inspector thought that for one shift to get coal and for another to follow on in a fiery mine, meant that there was not enough time for the officials to inspect the mine after the first shift had left and the second came to work but there were enough officials to inspect the workings two or three times during the shift.

Gas had been found in the 21st. District but it was reported free from gas on the morning of the explosion. The District had not been inspected since the explosion as the mine had not been re-opened. The Inspector, Mr. Cadman, thought that the gas could have fired at one of the so called safety lamps that were used in Monmouth and South Wales. There was one lamp station at the bottom of the shaft and only locked

lamps were used in the mine. A defective lamp had been found in the 21st. District and the explosion could have been fed by dust.

The mine was dusty and hot and blasting was strictly prohibited in the Welsh Steam Coal mine. There had been a history of outbursts of gas and the managers believed that this had caused this explosion.

The Inspector thought that the ventilation had been deranged which had allowed air to pass into the return airways before passing through the faces and there had been an accumulation of gas.

The inquest was continued last Friday into the explosion when the witnesses, Rees, Harris and Lovell were examined. Harris was a mason and acted heroically and rendered substantial help before he left the colliery.

Elijah Lewis, a fireman who worked in the Nos.4 and 17 districts, said that he came up the No.6 pit at 5 in the morning of the day of the explosion. He had reported in his book-

“I beg to state that the whole of the workings in Nos.4 and 17 are free from gas, and that there were falls on September 11th.”

Henry Lewis who was a fireman, admitted that he found unlocked lamps in the pit and had seen men with pipes and tobacco in their possession but had never found matches on them.

In 1900, the workings were opened with a view to continue mining operations. It was found that the air was foul but one body was discovered. There was an inquest on but the body was not identified.

DINAS. Llantrisant, Glamorganshire. 13th. January, 1879.

The colliery was at Llantrisant, in Glamorganshire about four miles from Pontypridd and sixteen miles from Cardiff. It was one of the oldest and deepest in the Rhondda and had been sunk about forty years before by Mr. Walter Coffin but was the property of Colonel Hunt and worked under the name of Coffin and Company. Mr. Charles Henry James, mining engineer of Merthyr Tydfil was the agent for the colliery and Samuel Hughes the manager with John Chubb as the overman. The coal was worked on the longwall system and the discipline at the colliery was said to be good.

The colliery was sunk to the bituminous and semi-bituminous household coals but work had been going on to reach the steam coal measures and several seams of this coal were being worked at the time of the disaster. there were two shafts, one, the downcast, was about 360 yards deep and the other, the upcast, about 440 yards deep. They were about a quarter of a mile apart. The downcast was known as the Little Pit and 10 feet in diameter and sunk to the Polka Seam, 329 yards from the surface. This was 560 yards from the Middle Pit which passed through the Polka at 301 yards at which point there was a landing.

The upcast and coal winding pit was 15 feet by 12 feet and 407 yards deep, sunk to the Two Foot Seam from which coal was raised. The shaft passed through the Four Foot Seam at 329 yards and there was an opening to that seam but no coal landing. Both shafts were large enough to pass the large quantities of air that were required for the ventilation of the workings. A powerful Waddle fan, forty feet in diameter was placed at the top of the Middle Pit, upcast shaft and both pits were used for winding men, coal and materials. There was a good travelling road driven through the coal to the upcast shaft. It was known to be a fiery mine and worked with locked lamps.

The pit had been managed for a great many years by Mr. Morgan Rowland who, not long before the disaster was superseded by Mr. Chubb who had been the overman at the pit. The year before a Mines Inspector, Mr. Galloway, prosecuted Mr. Chubb for breach of the Mines Regulation Act. A fine of £10 was imposed and his certificate was suspended for six months by the Court. This left the colliery without effective

management and another inspector, Mr. Wales, sanctioned Mr. Samuel Hughes and the provisional manager with Chubb being employed as the colliery overman. Mr. Charles Henry James, mining engineer from Merthyr Tydfil had been retained by the previous manager as a consulting engineer and he continued to work in that capacity at the colliery.

Before the explosion, the air current was split along the Lower Pit, some going to the Two Feet Nine opening and some to the Four Foot opening. These two currents, after ventilating the workings, joined at the bottom of the staple pit sunk from the Two Foot Nine to the Four Foot Seam and passed in one current to the top of the staple and down it. The staple was 78 yards deep from the Four Foot Polka to the Six Foot Seam. It then went to the bottom of the upcast Middle Pit and then to the fan.

The Inspector had instructed that four inspections should have been made by the assistant Inspector between 13th. April, 1878 and 6th. August. Inspections were made on the 13th and 27th. April but no gas was found. On the 13th June, the Two Foot Mine and the Four Foot Seams were inspected and gas was found in both districts which was cleared in two or three days. The condition of the ventilation was considered in relation to the Coal Mines Act, 1872, by the Inspectors and proceedings were instituted against Mr. Chubb, the manager for a break of the First General Rule. Another inspection was made on the 6th. August and an accumulation of gas was found on the extreme south of the workings in the Six Foot Seam. the temperature was also high and the Inspector pointed out that this was due to the depth, 1,700 to 800 feet. He said that the ventilation should be increased. Mr. James said that the gas had been cleared out of the South end of the Six Foot workings and that steps had been take to increase the ventilation throughout the colliery.

The pit employed 400 men and boys of whom not quite half worked in the Six Feet Seam and the remainder worked in the Four Foot Seam. After the day shift had finished and the colliers were leaving the pit, the night workers were going to do repairs to the working places, clear rubbish and other work that was required. Sixty men and two hitchers working at the bottom of the shaft in all. The pumping engineer was stationed in the No.3 heading, about 300 yards from the bottom of the main shaft.

At twenty minutes to eleven, the engineer, John Burton, heard a crash at the mouth of the pit And on going out, saw that a heavy iron cap that diverted the air through the tunnel into the fan had been blown up into the pit head and was fixed there. The banksmen, William Taylor and William Webber, had also been blown from their places. directly afterwards came the sound of a deep reverberation followed by a cloud of dense, sulphurous vapours.

The manager, Samuel Hughes, and overman Chubb were sent for and the engineman ran back to enginehouse and made an attempt to raise the cage but it was stuck in shaft. The news spread rapidly and within a few hours the managers of surrounding collieries, Mr. Hoed of Llwynpia Colliery, Mr. Daniel Thomas and Mr. Curnew of Bute Colliery, Mr. D.D. Evans of the Ferndale Colliery and other owners gathered at the colliery to offer their help.

There were dense volumes of gas coming from upcast shaft and it was useless to try to get to the men below, even so, the exploring parties lost no time in going down the downcast shaft and making their way to upcast. When they arrived at point where the air was taken between strata from Four Foot workings to six Foot workings, they found that there had been a heavy fall which had completely blocked Eight Yard Staple. Going further on, they found that doors which opened to upcast shaft were blown down so that air current was passing directly from the downcast to upcast shaft, leaving bottom working completely without air. The condition of air in the mine could be gauged from a comment of one of the engineers, *"that no man could put his nose three inches below the level in shaft without being suffocated."* It was not known whether the fall over the Staple was the cause of the explosion or a consequence but there was no evidence

to shoe that blast had come from that way from workings below. All rescue efforts at this time were to get new tubes of a sufficient size to take the air from staple into the workings below.

When Mr. Wales, the Inspectors, heard of disaster, he was at the inquest into Abercarne explosion and reached colliery at 11.30 a.m. with his assistant, Mr. Galloway. After finding the staple pit blocked, he went down Lower Pit to Polka landing and the Middle Pit. there was little hope of anyone being left alive in workings but there was hope for some of men in more remote workings of the mine.

At the inquiry an eyewitness account of explosion was related to court by a engineman named Morgan. He said-

"I was taken to my work on Monday afternoon at a quarter past four o'clock and engine under my care was situated in an old workings 100 yards from the surface along the Polka shaft, 15 to 16 yards from the shaft. Shortly after 10 o'clock, I oiled my engine by the light of my lamps there being three burners in shaft. About twenty five minutes past ten, I sat down on a box near one of lamps and was amusing myself reading - I generally take one or two papers or periodicals with me as I have not much to do - when I heard a loud report. Almost immediately the two air doors between which I was placed were blown down and one of them fell on me and knocked me several yards along shaft. I fell on some iron pipes sustaining serious injuries to my right leg. I must have remained stupefied for some time. When I came to I scrambled up. I could feel no pain then and groped about for my lamps all of which had been extinguished. I could not find them but managed to get hold of the knocker, with which I signalled to the top for the cage. All this time and in fact as long as I was in the pit, there was a humming sound in my ears and a shivering in the air and besides this the shaft was filled with a thick cloud of coal dust blown from the old workings which I could taste and feel though I could not see it. I had no idea of the locality of the accident buy I had no doubt that a serious one had occurred. I was convinced that many lives would be lost as no sound came from the hitchers at the bottom of the pit. I listened attentively but could hear nothing but a distant rumbling and from that I gathered that there had been a heavy fall at the bottom. I was rescued between one and two o'clock in the morning. The delay occurred in relieving me from my position owing to the cage having caught in the gearing at the top of the pit, and the men being unable to get it to work. I had myself found one of the guides broken so I had made up my mind to be left for some hours in the pit. I thought I was out of reach of the afterdamp so that I was not uneasy. I do not know much about collieries having recently returned from the Australian mines but I have always been used to the surface and I shall stick to that in future. I may tell you that it is not in accordance with the rules for an engine driver to be at work by myself but the fact that no one was with me could not possibly have anything to do with the accident."

Relays of men tried to restore the ventilation. They were under the direction of competent engineers who pushed the work forward as safely as they dared. The fall over the 80 Yard staple was a serious matter and it was found necessary to timber the place and erect mechanical appliances to raise the rubbish which choked it. Attempts were made to get to the bottom of the upcast shaft and a party went down on Wednesday afternoon including Mr. C. H. James, the consulting engineer of the Company, Mr H. Lewis of Treherbert, Mr. William Davies of Coedcae, Mr. J. Habbard of Mountain Ash and Mr. T. Davies of the Tylacock Collieries. They were able to get with 15 to 20 yards of the landing. At the bottom of the shaft they found that the air was improved and they could see the old cage fixed in the debris. There was no air current and they could see no one, living or dead. The walls of the shaft had been blown down and stones were galling all the time. There was little hope of anyone being left alive but

at the time it was thought that the explosion had not extended through the whole of the Six Foot workings and some men might be alive who could be reached in a few days.

The efforts of the rescue parties were rewarded when Mr. Wales went to the colliery and cheered up the men who were working. Colonel Hunt, had been at the mine from Tuesday, directed his agents to help the suffering and distress of the bereaved families.

From the 14th to the 23rd. January, every possible effort was made to reach the workings from the Middle Pit but due to the wrecking of the bottom of the shaft and the fact that large quantities of gas were encountered, it was quite impossible to proceed. At noon on the 23rd a consultation among the mining engineers took place and it was decided to suspend operations in the Middle Pit and work was concentrated to clear the staple and restore the ventilation. The work was very slow and only a small portion of the mine was opened at the time of the inquiry and 63 bodies recovered.

The men who died were-

William Lloyd aged 20 years, night fireman.

Thomas Watkins aged 34 years, night fireman.

Stephen Williams aged 37 years, timberman.

William Cross aged 31 years, timberman.

Charles Penny aged 34 years, timberman.

William Jones aged 26 years, timberman.

Robert Chubb aged 30 years, timberman.

Evan Jenkins aged 16 years, haulier.

David Thomas aged 34 years, haulier.

William Williams aged 28 years, haulier.

Daniel Dunn aged 34 years, haulier.

James Edwards aged 17 years, haulier.

Edward Rees aged 19 years, haulier.

William Roberts aged 28 years, haulier.

John Edwards aged 20 years, haulier.

Daniel Morley aged 18 years, haulier.

Joseph Evans aged 18 years, haulier.

Lewis Williams aged 33 years, haulier.

Edward Sullivan aged 30 years.

Daniel Dunworth aged 30 years.

Daniel Smith aged 49 years.

Evan John aged 34 years.

James Harris aged 33 years.

Thomas Richards aged 26 years.

Thomas Jenkin Holmes aged 40 years.

Henry Hayter aged 22 years.

William Jenkins aged 35 years, hitcher.

John Griffiths aged 30 years, hitcher.

Evan Davies aged 52 years, lamp station man.

The labourers-

Charles Westlake aged 52 years.

Hemnry Taylor aged 30 years.

George Sutton aged 35 years.

Elisha Upjohn aged 51 years.

River Jordan aged 51 years.

John Hawkins aged 48 years.

Samuel Pryor aged 39 years.

Thomas Roberts aged 59 years.
Charles Wheadon aged 24 years.
William Griffiths aged 50 years.
Isaac Martin aged 24 years.
John Romseville aged 39 years.
David Hughes aged 34 years.
David Rees aged 28 years.
Octavius Whealdon aged 40 years.
James Bowen aged 45 years.
John Landregan aged 26 years.
John Lewis aged 49 years.
Frank Moore aged 26 years.
Samuel Romseville aged 37 years.
Henry Williams aged 28 years.
Edward Davies aged 20 years.
Robert Emery aged 29 years.
John Jenkins aged 30 years.
Richard Howells aged 31 years.
William Richards aged 18 years.
Thomas Hughes aged 30 years.
Thomas Rees aged 21 years.
David Jenkins aged 27 years.
John Griffiths aged 21 years.
William Williams aged 22 years.
William Evans aged 27 years.
James Rossin aged 26 years.
Charles Meade aged 22 years.

The Inspector examined that part of the colliery that had been opened and he came to the conclusion that the explosion had occurred in Morris' heading or cross measure drift from the Six Foot to the Four Foot. The ventilation was taken there by three iron pipes, 12 inches in diameter which the force of the explosion had twisted into every conceivable shape. About 70 yards in a straight line with the cross measures there were many signs of fire, many more than in any other part of the colliery that was inspected. This evidence led Mr. Wales to his conclusion as to the source of the explosion.

The cross measure drift was about 150 yards long, rising at 1 in 7 or 8. All the air came into the place through three 12 inch pipes which the Inspector thought were totally inadequate. He also thought that this was where the gas had accumulated but he could not say how the gas ignited. Shot firing was prohibited in the mine but he thought that if gas had accumulated that sooner or later it would be ignited. According to the Inspector the primary cause of the explosion was the use of the ventilation pipes. This mode of ventilation was common at the time and Mr. Wales stated that he hoped that the practice would be abandoned.

The inquest into the disaster was held on the few bodies that had been recovered and was conducted by Mr. E. Bernard Reece, Coroner. The point was made that the colliery was left without a certificated manager. Mr. Hughes who was appointed as the temporary manager until a certificated manager could be appointed but the manager said he had taken steps to remove the gas. When Chubb was appointed as the overman of the Middle Pit, it meant that their positions were reversed.

Evidence was given that there was nothing wrong until 11th. December when gas was reported daily until 19th. December when Mr. James inspected the place and advanced the ventilation with another row of pipes. The work was completed on the

26th. December was the men were allowed to go back to work when the gas was cleared. Gas was not seen in the pit until 12th. January when a blower was seen by Mr. Miles, the fireman, in his district.

The explosion occurred on the night of the 13th. January and some of the witnesses thought the charges of Morgan Rowlands against Chubb had nothing to do with the present case as they occurred 15 months before the disaster.

Mr. Rowlands was called to give evidence on this point. He had sent a letter to Mr. Hunt because of his concern about what Chubb was doing at the colliery. In his opinion, if matters continued, there would be an explosion. He did not know if Chubb was guilty of negligence in this case but he certainly was guilty of negligence in June, 1878 when his certificate was suspended.

Mr. James said that Hughes was appointed manager to consult with Chubb and himself but Chubb was accountable for the expenses at the colliery. It became a matter for the jury to decide whether Hughes was really appointed as manager and had sufficient power to manage the mine safely and to meet the requirements of the act. To do this the jury was referred to the evidence of Samuel Hughes.

Hughes said Mr. James told him that he was responsible for the safety of the mine in accordance with the Act and the Mr. Wood, Colonel Hunt's manager at the Cardiff Office, told him that Chubb was the older man and that he must not do anything without consultation with Chubb. Hughes told the court that he thought he had full power to countermand anything that Chubb had ordered to be done if he thought it dangerous.

It was an important point on which the jury had to decide. Mr. Wales said-

"If they were of the opinion that the Mines Regulation Act had not been complied with, then both the owners and the agent could be rendered criminally responsible for the accident occurring in not appointing a proper manager.

If Hughes stated the truth of the difference of opinion between Chubb with regard to the gas accumulation so that there was negligence they would both be equally liable."

John Ace, fireman, stated that there had been gas in Morris' heading for several days between 26th. and 28th. December. He stated-

"I reported gas in John Morris' heading on the 11th. December. The ventilation was increased by brattice across the landing and a row of ventilation pipes. There was no blasting in the mine."

Gas was again found on the 19th December and was again cleared with brattice and air pipes. Lewis Jones, collier, Phillip Wyld and Thomas Llewellyn were chosen by the men to make an inspection of the mine and reported his findings to the Committee of Colliers who appointed two men every month to make an inspection. He reported in a written report, that the mine clear of gas.

Mr. Wales did not think there had been an outburst of gas and if gas had accumulated there was negligence by Mr. Chubb, Mr. ace and Mr.. Hughes. He also stated his opinion that air pipes were not sufficient ventilation.

The jury retired and brought in the following verdict-

"That the deaths of John Griffiths and William Jenkins occurred through an explosion of gas at the Dinas Colliery and that the explosion was accidental and it was believed on the evidence adduced that it occurred through a sudden outburst of gas in or near Morris' level.

at the same time we strongly censure the course adopted by the colliery authorities in placing John Chubb nominally overman but really part manager after his certificate had been suspended through incompetence in conducting the management of the said colliery.

Mr. Wales concluded his report

"It is with deep regret that John Chubb who only two months before the explosion had been found guilty of incompetence and of gross negligence in the

management of this very colliery and had his certificate suspended should have been appointed to act, ostensibly as overman but from the evidence adduced really acted as manager thus practically ignoring the judgement from the court appointed by The Right Honourable Home Secretary under Section 32 of the Coal Mines Regulation Act, 1872.”

FITZWILLIAM MAIN. Pontefract, Yorkshire. 25th. January, 1879.

The colliery was the property of Mr. R. Fosdick and was in the village of Hemswick. It was comparatively new and had been open for less than a year at the time of the accident. The seam that was being worked was known as the ‘Shafton’ which lay 145 yards from the surface. Up to the time of the accident there had been very little seen in the mine and the men were allowed to work with naked lights.

During Friday night the surveyors had made a survey of the workings and left the pit between 5 and 6 a.m. on Saturday. They reported that all was in good order. This was confirmed about 6 a.m. when Bird, a deputy, made an examination of all the workings and made a report to that effect in the Report Book.

About 150 men and boys went to work and all went well until 9.30 a.m. when the explosion occurred in the dip levels on the west side of the pit. The explosion did not seem to have been violent and the men in other parts of the mine were unaware that anything had happened.

Mr. Bennett, the manager, and others went down the pit immediately to make an examination. They found that the blast had occurred in the bank on the west bord. They found three gates driven to the face of the coal which was being worked on the longwall system. It was found that there was little damage and the ventilation was quickly restored.

Two men had been killed on the spot and three others later died from their injuries. The two who had been killed were working at the face of the No.31 gate and it was thought that a fall had taken place which liberated the gas which fired at a naked light of one of the men.

Those who died were colliers-
George Hill aged 45 years,
John Rushton aged 37 years,
John Mann aged 35 years,
Paul Brailsford aged 32 years and
Isiah James aged 33 years.

At the inquiry, the Inspector, Mr. Wardell, found that shots had been fired previous to the explosion but thought that these had taken no parts in the disaster. He thought that the roof had weighted and the deputies had not noticed this. It emerged that there was a thin layer of coal above the seam which was left in the roof and during sinking operations, a little gas had come from this seam.

The Inspector advised Mr. Fosdick to stop the use of naked lights and introduce safety lamps throughout the mine. The jury brought in a verdict of ‘Accidental Death’ on the men and expressed their opinion that lamps should be introduced as soon as possible.

VICTORIA. Pontefract, Yorkshire. 7th. March, 1879.

The colliery was the property of Rhodes & Dalby and was in the village of Snydale near Pontefract. Abraham Wordman the surface manager and James Eley the certificated underground manager. Eight men lost their lives in an accident at the

colliery when the cage fell down the shaft. the seam that was worked at the colliery was the Stanley Main Seam at a depth of about 220 yards. the shaft was fitted with wooden conductors and 'shoes' which were about four inches wide which ran on the conductors. The rope to the cage was made of steel wire and was four and one eighth inches in diameter.

About 9 p.m. on the 7th. March, a Friday night shift of about 40 men and boys started to descend. Eight persons wen down in the cage at one time and three cage loads had reached the bottom. The fourth was being lowered when the rope began to vibrate and the banksman knew that something was wrong. he signalled the engineman to stop when the rope broke. James Armitage, the head banksman heard a rumbling in the shaft and knew something was wrong and so stopped the engine immediately and sent a message for Mr. Wordman or Mr. Eley who quickly arrived.

For some time those in authority at the surface did not know what had happened a they could not contact the shaft bottom as the signalling wires had been broken. It was considered too dangerous to move the other cage without knowing the state of the shaft. A message was sent down the shaft attached to a safety lamp by a cord. The message read-

"Send word up how this has happened. Are you all safe? Getting ready at the top as quickly as possible. Where is the other cage. Is your cage loosed?"

After a considerable amount of time had and answer was received from Thomas Summister which said-

"We want you to send the second cage down as the other cage had gone into the sump and all with it. All is quiet."

Two men went down the shaft in a skip attached to anew rope and they found that the cage was wedged between the conductors. By degrees it was freed and lowered to the bottom of the shaft. the bodies of the men were retrieved from the sump and brought to the surface. The past was brought up at 1p.m on Saturday.

The sixteen men and boys who were in the pit were drawn up the upcast shaft. The rope that had broken had been in use for about two years and when it was carefully examined it was found that it broke at a long tear which could not have been seen before the accident.

Those who died were-

S. Kerfoot aged 37 years, byeworker,
William Douthroit aged 38 years, byeworker,
Charles Allsopp aged 35 years, byeworker,
John Brown aged 42 years, miner,
William Oldridge aged 32 years, miner,
William Pegg aged 28 years, miner,
J. Calconnon aged 29 years, miner and
Samuel Clamp aged 20 years, driver.

At the inquest which was held at the Station Hotel, Syndale before Mr. Thomas Taylor, Coroner, the men spoke of the cage being lowered at the ordinary speed and nothing irregular had been noticed. Mr. Wardell, the. Inspector, examined the shaft and found that the ascending cage had left the conductors about 30 yards from the bottom. One of the conducting rods was disconnected at the bottom. He thought the cage had got out if its guides before this and that they had collided in the shaft. This would cause the rope to slacken and the suddenly tighten which caused the rope to break. The shaft had been reported in the Report Book to be in good order by the enginewright. The jury returned a verdict of 'Accidental Death.'

BEDWELTY. Tredegar, Glamorganshire. 2nd. April, 1879.

The colliery was the property of the Tredegar Coal and Iron Company and the explosion resulted in the deaths of six men. Three were killed at the time and the others died later from the results of burns and their injuries.

The explosion occurred about 7 a.m. when all the day shift men had left the workings and the night shift men just entered after the fireman had reported that all was well. Morgan Jones, collier of the day shift went into the pit at 7 a.m. and came out at 5 p.m. He stated that he saw no gas during his shift but saw the day overman, William Taylor. He did not see the foreman but saw his mark when he went in. The day fireman John Jehu went down about 3 a.m. on the 2nd. April and went through his district which was called the New Drift. All was in good order. he made his report and came to the surface at 6 a.m.

Henry Morgan, shotfirer, went down about 6.30 a.m. and found no gas. He was the last person in the place where the explosion took place about 4.50 to 5 p.m. He was at the face of the heading when a wind passed him. Thomas Ball, collier, had just got to his place and put down his jacket when he heard the explosion.

The men who died were:-

Charles Stanley aged 24 years,
Stephen Stevens aged 36 years,
Robert Jones aged 54 years,
William Burt aged 46 years,
Thomas James aged 32 years and
Hubert Gough aged 60 years.

The inquest was held by Mr. W.H. Brewer, Coroner. Mr. Ronald Donald Bain, H.M. Inspector of Mines told the court that the ventilation at the colliery was very much improved and he had frequently inspected the pit. He inspected the pit after the disaster with Mr. Cadman, another Inspector, and they were of the opinion that the explosion originated in David Edward's heading. there were three falls at the face which he thought had come down before the men went in and he was of the opinion that the gas had been ignited at the naked light of one of the men.

The jury returned a verdict of 'Accidentally killed by an explosion of gas.'

PARK. Dewsbury, Yorkshire. 7th. April, 1879.

The colliery was owned by The Park Coal Company and an explosion of firedamp killed five men.

Those who died were:—

William Jamieson aged 34 years, miner.
John Bower aged 39 years, miner.
James Haley, miner.
Adam Sykes, miner.
T. Wooley, miner.

VICTORIA. Stanley Pit. Wakefield, Yorkshire. 4th. March 1879.

The colliery was owned by Robert Hudson and Company Limited. The Silkstone Pit was first sunk in 1840 to the Haigh Moor Seam and this was later deepened to the Silkstone Seam. The manager of all the Hudson's Collieries was Mr. John Olroyd Greaves. The two shafts were 11 feet in diameter and 475 yards deep. A drift, 50 yards long, connected the furnace with the upcast shaft and the return air did not pass over

the furnace. There was about 75,250 cubic feet per minute entering the mine of which 53,000 cubic feet went along the west bord. the affected area of the pit was confined to the west of the shaft. During the day there were usually about 230 men in the mine but on the day of the explosion there were few at work because there was a slump in the coal trade at the time. There were between 50 and 60 men in the pit at the time of the explosion but only 21 on the west side.

Thomas Richard Arundel was the underground viewer at the Victoria Colliery and he also had charge of the Haigh Moor Pit. He went down the Silkstone Pit to make an examination only if he had time but usually made a weekly examination. He went down the pit with Ezra Hampshire between 6 and 7 a.m. on the Monday morning before the explosion and examined all the workings on the west bord. No gas was found and the ventilation was satisfactory.

After the explosion, Arundel reached the pit about 11 p.m. on the Tuesday and found that a jenny pulley had been blown towards the shaft and a corve along the main road. There were also traces of afterdamp.

John Sugden, the underviewer of the Lofthouse Station Colliery went down the pit for the first time on the day of the explosion with Thomas Walls and others. They went along the west bord where they found the bodies of Leek and Waller. The ventilation was in good order and doors and sheets had been erected but there were still traces of afterdamp in the main way. The roof had fallen and they had to return. The party saw Hampshire who was exhausted and Sugden went back to the fall and gave orders that it should be cleared and the bodies recovered.

He then went from the intake to the return to search for Colly's body who was found in the slit opposite the stables. Sugden took the lamp from his hand. It was a 'paddy lamp.' He saw a stopping had been blown out and there were bricks and horse gear until the way until he found the body. He returned and found the body of a boy in the slit an further up the body of a man lying on his face. He then saw the body of a man lying on his back with his head towards the workings and found two safety lamps in the return and another lamp. It appeared that the men had put them down as they ran from the workings.

Further on he found the body of Joseph Salt lying with his face towards the south. He then went to the No.9 heading and found the bodies of Perks, Atkinson and William Hartley, the deputy. They also found a Stevenson lamp which was in good order. He thought that the explosion had been cause by a boy taking in an open lamp which was against the rules.

Matthew Hall, the certificated manager of the Lofthouse Station Collieries, went down the pit immediately after the explosion and he was of the same opinion as Sugden as to the source of the explosion. dust, a quarter of an inch thick was found in the timbers and Mr.,Hampshire found a rent in the floor near No.27 which was about ten inches long and six inches wide. It was thought that a sudden outburst of gas was the cause of this rent.

Bartholomew Hudson, a deputy at the Silkstone Pit worked on the day shift. His district was the No.1 drift of the south workings. He saw the Report Book on Monday 3rd. and the last entries were in the hands of William Hartley and James Hopton. Written in the book was-

"March, 3. 2 p.m. I have examined the south end workings above the straight south ending and have found then in working order. Free from gas.

D. Hudson."

John Hopton, night deputy, went down the Silkstone Pit at 12 on Sunday 2nd. and came out at 5 a.m. He examined the whole of the south workings but did not go into the west bord as it was not his duty. He was at the pit bank about 9 a.m. and saw Leek and Brook in the lamproom. Brook was reading a note to Leek about the work that had to

be done that night and he heard that Leek had to go down the west bord to lay some cross slips.

James Burkinshaw had worked in the Silkstone Pit for six weeks and was with a party that explored after the explosion. he was with the party that found Leek and there was a 'flaming lamp' with no oil in it at Leek's feet.

Those who lost their lives-

W. Hartley aged 56 years, deputy,
James Leek aged 35 years, dataller,
Luke Walker aged 47 years, dataller,
Charles Firth aged 40 years, dataller and
William Colley aged 55 years, horsekeeper.

The colliers-

Charles Wild aged 38 years,
George Bolland aged 42 years,
William Grice aged 37 years,
Israel Hartley aged 25 years,
Luke Walker aged 30 years,
R. Atkinson aged 30 years,
E. Blackburn aged 30 years,
James Salt aged 34 years,
A. Wild aged 32 years,
William Jones aged 24 years and
D. Noble aged 33 years.

The drivers.-

William Musgrave aged 17 years,
John Perks aged 16 years,
Thomas Farrar aged 14 years,
James Dolan aged 12 years and
John Dolan aged 14 years.

The inquest was held before Mr. Thomas Taylor, Coroner, at the Court House at Wakefield. All interested parties were represented and evidence taken from men who had worked at the mine and had inspected the explosion area. The Coroner summed up. It seemed that Hampshire had directed Leek the day before to put in some plates at the spot where on the day of the explosion the air was dead. He told the jury that it was their duty to say whether negligence had been shown or not. If there was a sudden outburst then nobody could reasonably be blamed.

The jury retired and after five minutes they returned to deliver the following verdict-

"The jury are unanimously of the opinion that the twenty two persons whose bodies have been viewed have come to their deaths by an accidental explosion of firedamp in the Silkstone Pit, and that such explosion originated at the naked light in 43 extension of the west bord and they also are of the opinion that there was some degree of laxity in carrying out the Rules."

In his report, Mr. Wardell commented-

"It is matter of earnest consideration whether or not any person was legally liable for a violation of the Act but I did not see my way to advise that a prosecution should be undertaken. at first sight it may seem an unsatisfactory result of the inquiry when it was considered that so many lives were lost, and that evidence undoubtedly displayed some want of care in the colliery management yet, as no actual breach of the rules of the statute on the part of the manager could definitely

be proved, a charge which in all probability could not have been legally substantiated would have worked much harm in the district.”

PARK. Dewsbury, Yorkshire. 7th. April, 1879

The colliery was owned by The Park Coal Company and an explosion of firedamp killed five men.

Those who died were: _

William Jamieson aged 34 years, miner.

John Bower aged 39 years, miner.

James Haley, miner.

Adam Sykes, miner.

T. Wooley, miner.

MEADOW. Cwmavon, Glamorganshire. 24th. June, 1879.

The colliery was near Port Talbot and at the time of the accident, was listed as being owned by the successors of the English Copper Company and was also known as the Waun Pit.

The shaft was 12 feet by 8 feet and was 185 yards deep. There were two cages known as the east and west which were fitted with wooden guides and each carried six men. The winding engine was a second motion engine and was in good order supplied with all the proper appliances and a engineman was in constant attendance.

About seventy men and boys went down and ascended the pit daily. On the day of the accident, no coal was raised as once in three or four weeks, a little rubbish was raised in the cage. The shaft was also used for pumping water but this did not occupy more than eight hours out of the twenty four and when men were being wound, pumping operations stopped. It took about three quarters of an hour to raised and lower all the men in the morning and evening.

There was a banksman at the top of the shaft to ensure that the men were safely placed in the cage and a man at the bottom with similar responsibilities. Each engine was attached to a wire rope, four inches wide and five eighths thick. The rope attached to the east cage was installed on the 13th. May, 1874 and the west rope in November of the same year.

At about 6.40 a.m. on the day of the disaster, the first batch of six people descended the shaft in the west cage, the second in the east cage and the third in the west cage. Up to that time 18 men had descended and all had gone well but as the fourth batch were being lowered in the east cage, the rope broke when the cage was about 85 yards from the bottom and the men went to their deaths. All died instantaneously.

Those who lost their lives were-

Evan Parker aged 56 years, married with 3 children,

William Lewis aged 40 years, married with 3 children,

Thomas Jones aged 19 years,

David Williams aged 19 years,

Hugh Bennet aged 19 years and

Benjamin Roblyn or Robbin, aged 13 years.

The inquest was held at Cwnavon by the Coroner for Neath, Mr. H. Cuthbertson. Mr. Richard Jenkins was the colliery manager. Benjamin Jones the mechanical engineer and Thomas Jones acted at the banksman. Mr. Thomas Wales, Inspector of Mines,

directed the attention of the jury to the First and Fourth Special Rule which applied to the manager. He thought these had a bearing on the accident. The Rules stated that-

“1st. Rule. The manager had the responsible charge and direction of the mine, and shall strictly observe and fulfil the provisions of the Act and Special Rules, and cause whatever is necessary to be provided for the safety of the mine and all its parts, and for rendering those provisions and rules effective.

4th. Rule. He shall see that fit and adequate machinery, structures and materials are provided for that purpose for carrying on the mine with safety and take care that such machinery and structures are kept in repair.”

No. 50 Special Rule applied to the mechanical engineer and read as follows-

“He shall have the inspection and supervision of all the machinery and structures belonging to the mine, and it shall be his duty to maintain the same at all times in good repair and order, and he shall every day (if no other ‘competent person’ is appointed by the manager under General Rule 29) carefully examine or appoint a person to carefully examine the machinery and structures used for raising and lowering of any person or thing in the mine, and he must frequently examine or cause to be examined at proper intervals all other machinery and structures of the mine, and once at least in each week examine or cause to be examined the state of the shafts and the bearers, curbs and landings therein and remove all loose coals, stones or things there from, and shall make reports of all such examinations as the Act requires.’

No 76 Special Rule applied to the banks man and runs thus-

“He shall have full control of the person employed at the pit head and shall constantly during his turn, observe the condition of the cages, ropes, chains, catches and fans and the gear used for lifting persons and things from the pit and if he observes any defect or disorder therein, or any appearances of danger in the pit apparatus, he shall immediately stop the use thereof and give instant notice to the engineman and mechanical engineer or other superior officer of such defect or disorder.”

Mr. Wales went to the pit and examined the broken rope and found a large number of wires were broken. He thought that if the rope had been examined as the rules stated the defect would have been found. He considered that as the rope had been in use for five years, it was too long for safety. he commented-

“I attribute the sad loss of life to the rope having been allowed to work until it became too weak to carry the load and to the gross negligence of the mechanical engineer and banksman in not discovering and reporting its dangerous condition’

After listening to the evidence, the jury returned the following verdict-

“That the said Evan Parker on the 24th. June instant, in the Parish aforesaid in the County aforesaid, was killed by falling down the Meadow Pit in consequence of the rope attached to the cage breaking. The jury further say that officials of the colliery are deserving of censure.”

A charge of manslaughter was preferred against Benjamin Jones, the mechanical engineer and was heard before magistrates on 31st. July. The trial took place at Swansea Assizes before Mr. Justice Mansty on the 5th August, 1879 where Jones was acquitted.

BLANTYRE No.1. Blantyre, Lanarkshire. 2nd. July, 1879.

The colliery was the property of Messrs. Dixon and Company and had been the scene of a great explosion in which 111 lives were lost in 1877. This disaster was fortunately, not on the same scale but claimed the lives of twenty eight men and boys.

Since the previous disaster great care had been taken in working the mine and only safety lamps of the Clanny and Davy types were used. The explosion occurred in the

Ell Coal where men were using gunpowder to blast some stonework. Gas had not been seen in the mine since the 19th. May and there were 3,000 cubic feet of air per minute passing into the district.

On the night of the disaster the men went down about 6 p.m. They were brushers whose duty it was to clear and repair the mine ready for the day men. Those at the pit head hear a loud report which sounded like the firing of a dynamite shot in the shaft. The other men in the pit quickly got out by other shafts and exploring parties were organised under the direction of Mr. James Watson, the manager and including James, his son, who was overman at the colliery and J. Torrance, William Gilchrist, John Pickering, John White, Walter Howieson and Thomas Laidlaw went down the No. 3 Pit.

Although the shaft was clear, the ventilation had been deranged and there was a lot of afterdamp as they made their way to the No.1 which was the scene of the explosion. They had to make their way slowly and carefully forward by the use of brattice. Several of the rescuers put their lives at risk and Mr. Watson, the manager and John White the overman were brought to the surface, along with others, after they had been overcome by the gas.

By 5 p.m. all the bodies except three, had been recovered and brought to the surface. There were vast crowds reported to be at the pit but the hysteria that followed the explosion of 1877 was not repeated. The explosion did not cover a great area and the men at the far end of the level were found alive.

Those who died were:-

Peter Berry aged 58 years, brusher, widow and six children.

Patrick McGarvie aged 55 years, brusher widow.

John Malone aged 38 years, brusher widow and five children.

John Newton aged 60 years, brusher, single.

Robert Mullan aged 28 years, brusher, single.

John O'Neil aged 32 years, brusher, widow and three children.

John Murphy aged 24 years, single.

Tague Boyle aged 22 years, brusher, single.

Edward Jardine aged 28 years, widower.

Bernard O'Bryen aged 28 years, brusher, widow and one child.

Michael Howitt aged 27 years, brusher, single.

Patrick Vallely aged 21 years, brusher, single.

Patrick McGribben aged 58 years, left a wife and grown up family.

Alexander McArthur aged 40 years, brusher, left a widow.

John Harvey aged 44 years, brusher, single.

Edwrad McGarvin aged 23 years, brusher.

James Lafferty aged 46 years, fireman, left a widow and a family.

Thomas Irvine aged 60 years, bottomer, left a widow and grown up family.

James Bryson aged 58 years, brusher, left a widow and family.

Richard Runn aged over 30 years, brusher, left a widow and six children.

Alexander Simmington aged 24 years, brusher, single.

Edward Thompson aged 31 years, brusher, left a widow and three children.

The '*Glasgow Herald*' lists the following as 'Missing.':-

John McGuigan aged 38 years, brusher, left a wife and two children,

Henry Duffy aged 65 years, brusher, single,

Patrick Lynch aged 30 years, brusher, single and

Thomas McDuff or Duffy, aged 24 years, brusher, single.

The survivors were:-

Bernard Cairns aged 23 years, single, who died the following day,

Charles Lafferty aged 18 years, son of James,
Bernard O'Neill aged 27 years, single, brother of John and
James Owens aged 52 years, widow.

Charles Lafferty gave the press an account of his experiences in the pit. He said:-

"I was working a considerable distance away from the main way at the coal face. It was the E11 seam which was the highest of the three seams and is the only one in the pit that is being worked now. There were several other men engaged near me. My father, James Lafferty, overman was one of them. About nine o'clock we heard a loud explosion coming from the west workings of the north bottom and immediately afterwards there was rush of gas along the workings. I was thrown violently against the coal face and then hurled on a heap of coal and much bruised and almost knocked insensible but I managed to pick myself up. The gas was very strong and I could hardly breathe. I tried to get to the main way but I was driven back by the gas. After a little time I made another effort and this time I was able to get to the main way. I found another man who was endeavouring to make his way to the bottom. We went together a little way but my companion became exhausted and dropped down saying he could go no further. I struggled on and became unconscious."

Lafferty was found unconscious and the other man was few yards away, dead.

LEYCETTE. Newcastle-under-Lyme, Staffordshire. 12th. September, 1879.

The colliery was owned by the Crewe Iron and Coal Company, Limited and was known as the Lady Fair Pit. The explosion claimed the lives of eight men. Mr. Robert Stevenson was the manager of the colliery and work carried out under his direction with the assistance of a consulting engineer.

The workings in which the accident occurred had been started in January of the previous year and all other working in the pit had been stopped for twelve months. The pit was ventilated by a furnace and ten days before the disaster it was measured as 10,500 cubic feet per minute. A ventilation fan had been considered but not installed as there had been no complaints about gas on the north side where the explosion occurred about 300 yards from the pit bottom. The only place where gas had been encountered was when slants were being driven and it was quickly cleared. The colliery was not working and producing coal. Only driving roads were being made by the underlooker who had taken the contract for the work.

All the lamps that had been taken down the pit were recovered and found to be in good condition except for one that had been damaged by the blast. It was thought that gas had been coming from a fault for a few hours before the explosion.

Those who died were-

Thomas Pearce,
James Burgess,
Thomas Jones,
William Wardle,
Joseph Crowder,
Thomas Ford,
Edward Millard and
Joseph Pepper.

The inquest was held in the Swan Inn, Madeley by Mr. Booth, Coroner when Mr. Stevenson said that due to a misunderstanding between the underlooker and himself, the levels had been driven further than intended and had gone beyond the thirling. He

considered that the butties who were employed, the firemen and the underlookers, competent men. Mr. Stevenson agreed that it was his duty to see that his orders were carried out but he said he had not been down the pit for ten days as he was helping with a gob fire in a neighbouring colliery. He trusted the underlooker to carry out his orders which were not to drive the level further, without instructions. He carried on without authorisation and opened the place where the outburst of gas took place.

Mr. Wynne, the Inspector, considered the gas was fired either by firing a shot in the top level or by Ford incautiously hanging his lamp exactly opposite an air pipe which would bring any gas that was given off in the lower level to the lamp and the air flow would blow the flame through the gauze. He was critical of the manager allowing the levels to be taken past the thirlings and thought it was quite enough to ventilate two such steep slants until the fan was ready. He thought Mr. Stevenson was responsible for all the pit and should not have been absent for ten days while this work was going on. Mr. Stevenson agreed with Mr. Wynne.

The Coroner summed up and the jury brought in a verdict of 'Accidental Death'. William Lockett, Joseph Phillips and Isaac Lloyd were summoned that they had had pipes and matches in their possession. The defendants pleaded guilty. Lockett and Lloyd were fined 5/- with costs and Phillips, 10/- with costs. Lloyd did not answer the charges and it was stated that he had absconded.

Proceedings were also instituted against Mr. Stevenson the manager and Burgess the contractor. The magistrates convicted both men but did not impose heavy fines as Burgess was killed in a second explosion and the Bench thought Mr. Stevenson was put to great expense by this disaster.

After a long and thorough trial the magistrates deliberated for over an hour. The charges against George Burgess were dismissed but they found that William Burgess had not attended to the ventilation of the mine but considering the trouble that had lately fallen on him, they would nearly fine him the nominal sum of one shilling and costs. Mr. Dutton asked for a fine that would allow an appeal and the penalty was then increased to 20s. plus costs. The magistrates said that Mr. Stevenson considered that he had not exercised the control and supervision which the Act required, having regard to the nature of a fiery mine, not had he caused a sufficient amount of ventilation for the mine. For the first offence he was fined £5 and costs and the second 10s. and costs. The third charge was dismissed. Mr. Hodgson asked for a case on the third point which was refused.

ALEXANDRA. St. Helens, Lancashire. 22nd. October, 1879.

The colliery was owned by the St. Helens Colliery Company Limited. When there was an overwinding accident at the colliery which resulted in the loss of seven lives when Joseph Naylor was in charge of the engine. William Eccleston of 4, Crabb Street, St. Helens, had worked in the pit for nine days and was one of nine who descended the pit at 5.40 a.m. The banksman, Martin Mullen knocked twice to the engine house and immediately the knocks were heard the cage began to ascend. Eccleston saw that the cage was going too high and he shouted to knock 'Hold' and at once jumped out of the cage. In jumping he knocked down the banksman and he heard the cage go. He thought the cage was about four yards above the mouth when he jumped and after that it seemed to him to go faster.

Martin Mullen, the banksman of Copperas Street, St. Helens and had been on duty at 5 a.m. on the morning of the accident. He had sent three cages of men down without incident. Nine men entered the fourth cage load from the Thatto Heath side to be sent down. The catches were set back and he knocked 'Down'. He then turned to chalk the number on the board when he heard an alarm and looked round to see the cage creeping up. He shouted to the enginemen who he thought did not hear him and ran to

the bell line. He had no time to knock before Eccleston and another man fell on top of him. He was stunned but managed to crawl to the cabin but did not see what became of the cage. He said that there was no light on the bank other than one in the cabin and that the engineman would not be able to see the cage. The gas light at the top of the pit had not been working since the summer and the banksman had seen men down by the light of his lamp. Mullen said that Naylor had been the engineman at the pit for eight or nine years and had never before made a mistake. He was a sober and steady man who had the confidence of the men.

Henry Swift was the other engineman and Naylor relieved him at 5 p.m. Everything was alright at the time and the engine was working perfectly. At 6 a.m the following morning Swift went to work and Naylor said to him, "*I have had a bad accident I have done it*". asking what he had done, Naylor said that he had started the engine the wrong way. He was crying and could not tell him if he had killed anyone. When Swift arrived at the engine house he found that there was little damage, only a few bricks knocked out of the wall. The rope was broken a few yards from the building but he could not see if the pit mouth had been damaged. When he was asked how he thought the accident might have happened he said that Naylor had neglected to reverse the engine.

Robert Bond of Water Street, St. Helens was a surface man at the pit and arrived at work to find that the accident had just happened and he gave evidence that Naylor was a steady man. Thomas Schofield was the underlooker at the pit and said that the shaft was 325 yards deep and he thought the engine had been started the wrong way.

John Rotherham, a collier in the Little Delf Mine said that all the bodies had gone through the scaffolding into the sump and lay in the water. Three of them were found in the cage, two were at each end of the cage and two lay underneath it. The bodies were sent home as they were found.

Those who died were-

The colliers.

Peter Aspinall aged 32 years,

Henry Norton aged 30 years,

William Parr aged 50 years,

Thomas Ray aged 45 years and

James Webster aged 38 years.

The drawers-

Joseph Holland aged 28 years and

David Dixon aged 16 years.

The inquest was held at the Fleece Hotel in St. Helens before Mr. Driffield the District Coroner and all interested parties were represented. Mr. Hall, H.M. Inspector for the district had made an inspection of the scene of the accident shortly after the event. The winding engine was a double horizontal with 25-inch cylinders and a 4 feet stroke. The drum was tapered from 12 to 10 feet. It was found to be in good order and fitted with a proper indicator. He went on to report-

"The engineman at his position at the handles, has a good view of the cage as it arrives at and leaves the surface and there is nothing in either the position or character of the machinery tending to make it difficult for the person in charge to wind with perfect safety, except for the fact of there being no light at the surface. The accident had no doubt occurred through the engineman Joseph Naylor, neglecting to place his reversing lever in the proper position before turning on the steam. He may have thought the right hand cage was at the surface instead of the left and adopted his lever to suit that position or he may have overlooked the

position of the lever altogether. In either case, if had had paid proper attention to the indicator and ropes this accident would not have occurred.”

Mr. Hall went on to give an account of overwinding accidents in the country and said up to December, 1878, 45 people had lost their lives in these accidents in the coal and ironstone mines in Great Britain. This was one fatal accident for nine and a half million windings. He advocated the use of detaching hooks.

The Coroner summed up and the jury returned the following verdict-

“That the deceased came to their deaths by being pulled at the Alexandra Colliery by Joseph Naylor. We think it possible that he misunderstood the signal given, and we also think that had the pit brow been lighted at the time and the catches in use, the sad accident would not have occurred. We further think the witness Mullen is not competent to be in charge of so many lives.”

The Coroner asked them directly if their verdict was manslaughter and the foreman replied-

“We do not think so. We hardly think the evidence will support a verdict of manslaughter. We also recommend unanimously that safety or detaching hooks should be supplied to the pit in question if it is possible to be done.”

SHORTHEATH. Willenhall, Staffordshire. 12th. November, 1879.

The colliery was the property of the Pelsall Coal and Iron Company. Mr. Michael Harle was the manager. There was an explosion at the colliery which cost six lives. The colliery worked several seams and a number of men were working to open up the Fireclay Coal. They had driven a heading only a few yards and were working under the direction of John Slack, the head engineer.

About 1 p.m., Edward Greenway, the banksman, was about to send down some timber down the shaft which was about 100 yards deep and was met by a rush of smoke and sulphur up the shaft. After a few minutes, he shouted down the shaft and someone shouted back, ‘*Fetch Help.*’

He was alone at the pit bank but ran 200 yards to another pit for assistance. Some men said that they would help him and two others joined them as they party went back to the pit. he lowered the slowly down the shaft but they had to be brought up again because of the fumes. When they reached the top large quantities of cold water were poured down the pit in an effort to improve the ventilation. About a hour later the men were again lowered and this time they were able to get to the bottom but were unable to stay very long but long enough to discover the six bodies. Later the bodies were brought to the surface and the working examined when it was found that there was not much damage.

Those who died were-

John Slack aged 32 years, head engineer,
Joseph Frost aged 53 years, chartermaster,
Edward Grant aged 32 years, deputy,
Benjamin Deakin aged 35 years, hanger-on,
William Wood aged 20 years, pikeman and
George Henworth aged 49 years, pikeman, landlord of the Duke of Cambridge Inn.

The inquiry in to the accident was held at the Great Western Hotel, Birmingham on the 12th November before Mr. J. Mottram, Q.C., Judge of the Birmingham County Court. Mr. Harle was the certificated manager of the colliery and was represented by Mr. Lewis of Walsall and Mr. Baker, Inspector of Mines was also present.

It was stated at the inquest that the colliery management had taken great care in working the mine since the explosion about 6 years ago. It was thought that the gas

came from old workings as, previous to the present management the colliery had been worked by Messrs. Boaz Bloomer and Son, and had ignited at a naked light.

As a result of the explosion the manger faced charges of not providing adequate ventilation. He placed great faith in the annular aperture between the scaffold and the brickwork of the shaft. This would have been all right if the ventilation pipes had passed under the scaffold but they did not. The colliery was supposed to be free of gas and Mr. Harle had the full confidence of the Company but the full system of ventilation was not carried out and there was not sufficient ventilation under the scaffold as the aperture would be expected to be filled with coal dust and debris. The gas was fired by a naked candle of one of the men.

The court ordered Harle to pay the costs of the inquiry but was unable to find him guilty of gross negligence and they did not think it necessary to withdraw his certificate.

KERSLEY. Kersley, Lancashire. 24th. December, 1879.

The colliery, sometimes known as 'Sowcrofts', was the property of Samuel Sowcroft and Sons and eleven men and boys lost their lives in an explosion in the Plodder Mine. An outburst of gas followed a fall of roof when naked lights were used. John Jones was the manager of the colliery which worked three mines, the Trencherbone, the Cannel and the Plodder. There was also the Dow mine but this was not entered from that shaft. There were four shafts, two upcast and two downcast. The downcasts were 11 feet in diameter and the upcast 9 feet in diameter. The Dow mine was 150 yards from the surface, the Five Quarters was 30 yards below the Dow had not been work for some years but recently works had stated in this seam, when a tunnel from the Dow mine had been driven into it. Next to the Five Quarters and 70 yards below was the Trencherbone, 66 yards below this was the Cannel mine and then the Plodder 44 to 45 yards below the Cannel.

The Ventilation for the Plodder was down the Dow shaft which was 280 yards deep. It then travelled along a tunnel about 200 yards and entered the Plodder at the lowest dip and another current went down by the Trencherbone pit which was 226 yards deep and then travelled 210 yards into the Cannel Mine, on to the Plodder along a 100 yard long tunnel. The air then travelled along from the deep tunnel along the west workings and then up to the highest level on the north side, along the level to the east end, through an old goaf and then to the upcast shaft. All the return air from the Plodder and Cannel mines went up the same upcast shaft. There was gas in the mine but it had been encountered in very small quantities.

At the upcast shaft there was a ventilating furnace for the Cannel mine and on the day of the disaster it was attended by the fireman due to the absence of John Norris from three in the morning to two in the afternoon. The fireman made up the fire when he left.

James Kirkham, collier, was working in the Plodder mine on the day of the explosion. He was next to Heathcoat's place. When the explosion occurred he was just going to assist his brother, Joseph, to fill a tub when he was suddenly blown off his feet by a blast which came from Heathcoat's place. he saw a light which travelled across his place and then down the side. He ran along the level where he found a man named Fogg who called out, '*I'm done*', and fell down. Kirkham helped him to the jig brow. The afterdamp was very strong and Fogg was burnt on his neck and suffering the effects of the afterdamp. Kirkham went on to say:-

"There were three working places, Heathcoat's, Crompton's and Kirkham's. There were also two bays which were finished up to the boundary. I had worked in the bay beyond Heathcoat's for six days before the explosion. The air travels round it and goes down at the back of the boundary. On the day of the explosion I went in with the fireman Ralph Wallwork and waited until he tried the place. He then gave

me a light and went forward. The old bays had not fallen except for a very slight fall a few weeks before when it was cleared up as it fell at the weekend. We never heard of any gas in the working places. and we worked with naked lights. When I was making my way out after finding Fogg I came across the younger Heathcoat who was fast to a tub by the foot. He was burned.”

The manager was not at the pit on the day of the explosion and Joseph Ducker, the underlooker, was in charge. At the time of the explosion he was on the pit bank and the first indication he had of the disaster was when Ellis Crompton brought Allen Lee who was badly burnt. He went down the mine at once with John Rayner and James Halliday. They noticed afterdamp in the Plodder tunnel and met Heathcoat 100 yards from the tunnel. He was alone and without a light, suffering from the effects of afterdamp. He went on along the level and up the slant into the north east workings. At the top of the slant they shouted and Thomas Livesey and William Jackson replied. They were not injured. Proceeding to the top level they encountered very strong afterdamp but went into George Mann's place but they were stopped by the afterdamp a few minutes later. The screens at the top of the level were blown down but they replaced them which restored the ventilation. They went up into Heathcoat's place but there was no trace of gas.

Ducker with an exploring party entered the pit the following day, Christmas Day, when they found signs of the explosion at the top of the slant. There was soot all the way to Heathcoat's place where the roof had fallen for about 10 yards but the ventilation was working. The explosion had blown out some props.

Those who died were-

Richard Fogg.

Thomas Woodward.

James Kirkham.

Joseph Kirkham.

John Fletcher aged 29 years, miner.

Thomas Tonge aged 32 years, miner who died on the 25th.

Allan Lee aged 21 years, waggoner, died on the 26th.

Thomas Heathcote aged 45 years, miner, on the died 26th.

Anthony Padden aged 27 years, miner on the died 27th.

James Taylor aged 21 years, waggoner, died on the 1st. January, 1880.

W.H. Heathcote aged 45 years, collier, died on the 1st. January, 1880.

The inquest was held before J.B. Edge, District Coroner at the Bowling Green Inn. After hearing all the evidence the Coroner addressed the jury and said that there was not conflict of the evidence as to the cause of the explosion and that it occurred at the top of Heathcoat's place. The jury retired to consider their verdict and after about ten minutes returned a verdict of 'Accidental Death' and recommended that more precaution ought to be used by the officials of the colliery in the future.