

CLATTERSHALL. Stourbridge, Staffordshire. 2nd. March, 1867.

The colliery was near Stourbridge. One of the dams was found to be leaking and three men and two boys were sent down the pit to make the necessary repairs. This was to be done by strengthening the dam by a layer of sand. The sand was taken down one of the working shafts but thrown down the shaft. This stopped the ventilation and choke damp accumulated and the victims were suffocated.

The Inspector commented:-

“The accident furnishes a striking proof of the looseness and disregard of general directions which is often exhibited in the mines of South Staffordshire. The workings were old and somewhat extensive and a portion of them, which was soon on fire, was cut off from the part in which coal was got by ‘dams’ built across the air course. Ventilation was effected by a lamp fire in the upcast shaft and Mr. Croecutt, the colliery manager, had given Shaw, the chartermaster, strict orders to keep up this fire constantly, leaving him no discretion in the matter. One of the fire dams near the upcast shaft was leaking, the chartermaster directed his deputy, Chivers, to repair it by placing sand against it and told him to lower the sand by the winding or downcast shaft and to convey it from there to the dam. Chivers, however, insisted that this was a needless trouble, and proposed to take out the lamp fire and throw the sand down the upcast shaft. Shaw disagreed and after a heated argument yielded to the wishes. The result was that Chivers and four other men lost their lives by an accumulation of chokedamp.”

Shaw was committed by the Coroner’s jury for manslaughter but was acquitted at Stafford assizes.

VICTIMS REQUIRED.

BRIGHTSIDE. Sheffield, Yorkshire. 12th. April, 1867.

The colliery was the property of Unwin and Shaw. The day shift left at 4 p.m. and the men came to work on the night shift until the following 4 a.m. The deceased were the first party of the night shift to be lowered down. They got into the cage which was described as a large box or chest with a roof and massive iron bars on the sides to stop the men falling out. There were two cages and as one went down the other came up. Water had been wound for some time and there was no hint that anything was wrong. The engineman lowered the cage and it had gone only a few yards when the rope suddenly snapped and the men fell 200 yards to their deaths.

The men on the pitbrow heard an agonising shriek from the shaft and the next moment the engine man found that the weight had gone off the engine. On arriving at the pit bottom a party found the cage which contained the men in ‘*almost a thousand pieces*’ and the ascending cage had also fallen. The massive iron bars were twisted and buckled and the bodies horribly mutilated.

Those who died were-

Thomas Bates aged 60 years, firetrier,
George Fox aged 36 years, labourer,
James Fox aged 42 years, labourer,
John Goldstraw aged 26 years, collier and
Joshua Burgin aged 18 years, filler.

The inquest was held by Mr. Webster, Coroner at the Bridge Inn. From the evidence at the inquest there was no blame attached to anyone connected with the colliery but it was supposed to have been caused by a defect in the manufacture of the rope which did not show until it broke and sent the men down the shaft to their deaths.

MESNE LEA. Worsley, Lancashire. 30th. May, 1867.

The colliery was the property of Peter Nightingale and Company and an explosion occurred in the Rams Seven Feet Mine. A new cut through had been made the evening before. This was small and the flexible tubing which was used instead of bratticing, to make the cut through, was stowed in the previous cut through. During the night there was not enough ventilation and of the fireman and miners who went in the morning, one man went in before the fireman and the gas ignited.

The shaft was 180 yards deep to the Seven feet Mine. There were 140 men in part of the colliery who stated work at 6 a.m. It was the duty of the fireman to examine the workings before the men went in. On the morning of the disaster, the fireman, Enoch Yates, went down the shaft and a number of men followed him. It was customary for the men to wait at the pit bottom while the fireman carried out his inspection. It was supposed that the men followed the fireman in with naked lights and at 6.30 there was an explosion at the far end of the jig brow.

Those who died were-

Enock Yates, aged 38 years, fireman.

John Johnson aged 38 years, miner.

Thomas Houghton aged 47 years, miner.

John Seddon aged 57 years, miner.

Thomas Brundrett aged 26 years, miner.

James Seddon aged 18 years, miner.

James Johnson aged 19 years, miner.

The accident was caused by the man going in before the fireman had made his regulation inspection. The Inspector, Joseph Dickinson thought it was possible that a door had been left open during the night.

The inquest was held by Mr. Rutter the County Coroner at the Swan with Two Necks public house. After due consideration the jury returned the verdict that-

“One or more of the deceased entered the mine with naked lights and the fireman had not performed his daily examination thereby an explosion was caused and the men came to their deaths. We recommend that a proper time should elapse before the men are allowed to descend so that the fireman could complete his work.”

WASHINGTON. Gateshead, Durham. 31st. May, 1867.

The colliery was owned by Bell, Kimpster and Company and the accident occurred when the cage containing ten people was drawn past the landing place at the top of the shaft and into the headgear where the winding rope broke and the cage and men fell down the shaft which was 120 fathoms deep.

The men who died were-

Hiram Milner aged 51 years, miner.

Patrick Kearnoy aged 40 years, miner.

Patrick Brannon aged 40 years, miner.

H. Curran aged 38 years, miner.

John Coil aged 39 years, miner.

John Smith aged 53 years, miner.

William Briggs aged 24 years, miner.

Jonas Todd aged 30 years, miner.

P. Atkinson aged 13 years, putter.

M. Muloaney aged 15 years, putter.

The bodies all went into the sump and the water was pumped out before they were removed. The bodies of Brannon, Smith and Curran were reported to have been '*smashed to pieces*'.

The inquest was held in the house of Mr. Armstrong at Washington. Those present included Mr. Atkinson and Mr. Southern, Government Inspectors of mines, Mr. Barker, a solicitor of Sunderland watched the proceedings on behalf of the relatives of the victims and Thomas Taylor the brakesman at the colliery was in the room in the charge of a policeman.

George Charlton, the under viewer at the 'F' pit at the colliery, was the first witness. He said that at about 7 p.m. the cage was being wound up from the Maudlin Seam which was 90 fathoms down when the cage went into the pulley and the rope broke. The man and cage went down the shaft and into the sump. Men went down the shaft to see what they could do. He continued-

"I sent George Routledge to attend the 'rapper'. The men I understand, got into the cage before Routledge got there and Frank Smith 'rapped' them away. I considered Smith a qualified man to do this. The men would have been at the bank by 5 o'clock but a fall took place and the men had to round by the 'waste'.

Thomas Taylor would take charge of the engine between 5 and 6 o'clock. He lowered me down steadily at 6.30. He appeared sober. He has been about 10 months at the colliery. Taylor always worked the engine, as far as I could see, properly and steadily. he always appeared to have great command over the engine. I have had no complaints against him. I have never seen him drunk either when at work or not at work. An extra length of rope is put on at night to work the Hutton Seam, but it had not been put on when I went down, nor was it on when the men were killed. The rule states that the onsetter is to work the signals himself and not to allow anyone else to do so. The onsetter, who is named John Wilson, should remain until the deputies and back overmen are out and Wilson in his leaving told me that he expected all the men were out of the seam. It is very common for the men 'rap' themselves away when the onsetter is not there."

In reply to a question from Mr. Atkinson, Charlton said that there were usually twelve men in the cage at a time and John Coulson was the banksman. The engineman had nothing to obstruct his view of the pit. When coal was being wound 'keps' were used and sometimes when men were riding. He pointed out that if there had been 'keps' they might have caught the cage.

John Walton was the engineer at the colliery and Thomas Taylor was under his charge. He had known the man for many years and said he had been brought up as a brakesman. He said there was a bell on the indicator in the engine house which rang when the cage was about 130 feet from the bank to give the enginemen notice to slow the engine as it approached the bank. The bell was in good order and the engineman could see the indicator. He could not fault Taylor and there was sufficient braking on the engine. He suggested that on the day, Taylor's attention had been distracted, perhaps by a passing locomotive. Mr. Atkinson question the witness as to the rope that was in use and he said the rope was 4 inches in circumference and had a breaking strain of 36 tons and the working load was 2 tons 14 cwt. It was put on 14th. January 1866.

The brakesman on the other engine was John Hollyman he said-

"I brake the engine on the other side to Taylor" engine. About seven o'clock on Friday night I was standing at my engine, looking at the mouth of the shaft. The men were in the cage. There was nothing I could see in the way to cause Taylor to draw the cage up. A locomotive passed just at that time. I have braked the same engine and when the locomotive has passed it has given me a shock. The steam might have prevented Taylor seeing the shaft. Supposing I heard the bell, there is a good deal of difficulty in stopping at the proper time when the place is filled with steam from the locomotive. I have never complained to the officials. The cage was going at the ordinary rate for drawing men. I believe, from the rate the cage was going up,

the engineman was at the engine handles. I did not see Coulson, the banksman, at the mouth of the shaft, but he might be there. The brakesman did not stop the engine. The engine is not heavy to brake. The engine is a good one. I went to the engine house about 15 minutes after the occurrence, I said, 'It's a bad job'. and he replied, 'It is bad job that engine was going by at the time'. I understood him to mean the locomotive."

A pitman, John Chapman was standing at the pit bank when the accident happened and he said the cage was moving slowly when the bell rang and then seemed to speed up. He did not see steam around the engine house. The banksman, John Coulson said he had not seen a copy of the colliery rules and had been a banksman for six years and was not at the pit bank when the men rapped. Mr William the viewer of the colliery said that the rules were posted at the pithead and Coulson never paid the rules. In his opinion on hearing the men rap, Coulson should have gone to the shaft.

Francis Smith, a hewer gave an eye witness account of the events at the Maudlin seam-

"On Friday I rapped the men away from the Maudlin Seam. The cage went away at the ordinary speed. There were three men in the top hole of the cage, three in the middle hole and two men and two boys in the bottom hole. The brakesman attended the signals in the proper manner. The men went up in the south cage, and I and the other men were waiting for the north cage, which came down the Maudlin seam, very fast. I heard a rumbling in the shaft and suddenly the cage fell into the sump. I have heard complaints about the brakesman one man complained to me about the brakesman pulling him so quickly as almost to take the breath from him. I told him to make the complaint to the proper person."

Isaac Starle, a fireman at the colliery was at the surface when he saw the cage come up the shaft. He said it was not going very fast. He heard the bell ring and did not hear the men shouting. He was the first to go to the engine house and found Taylor standing at the engine handles. He asked him what he had been doing and Taylor replied- 'Dear me, what a bad job this is the locomotive going by, and one thing and another.' The engine was standing and there was no one else in the engine house.

Several witnesses gave their accounts of what they saw from the surface. James Coils, a pitman, John McQuiggan also a pitman and Patrick Quinn who was at the place at the time of the accident all gave their accounts of the cage falling down the shaft. Michael Thompson and William Gilmaney both shaftsmen at the colliery gave evidence to say that the shaft was in good order and that they had always found Taylor attentive to his job. Richard Heckles of the Monkweirmouth Colliery had examined the shaft and he had found everything in good order. He said he could not recommend any of the patent safety cages that were available and anything that lessened the responsibility of the brakesman was objectionable. He preferred to be drawn up and lowered down in the ordinary cages. He said he would rather rely on the banksman.

The Coroner then called Thomas Taylor and told him that he could make a voluntary statement or make a statement on oath. Taylor gave his account of the accident-

"I was the brakesman in charge of the engine at the time the men were killed. I was aware that the men were to ride at the Maudlin Seam. They rapped as usual. There were three departments of the cage filled with men. The signal was given to draw away, and I drew the men away steadily as usual, and they came on until the bell rang. At this moment the locomotive came past the engine house door, which took my sight from the pit owing to the steam. I then looked at the indicator in the bell box. We have two marks in the box for when the cage is at bank one is 9 inches above the other. The 9 inches indicate three quarters of a stroke of the engine. The high mark is for the night shift when the rope is lengthened. By the locomotive going past the door at the moment the bell rang I was obliged to take my eye from the pit shaft, as I could not see it because of the steam and I got my eye on the wrong mark on the bell box. I got my eye on the mark for the long rope this is the mark

ought to have gone to if the rope had been changed, that was my mistake. Had the locomotive not passed by, I would have seen the rope and cage at the mouth of the pit and known when to stop.”

The Coroner addressed the jury and told them that if they considered Taylor guilty of gross and wilful carelessness they would have to bring in a verdict of manslaughter but if they believed that he had committed an error of judgement then the verdict was that the men were accidentally killed.

The jury retired and after a short time returned a verdict of ‘Accidentally Killed’ and they recommended that a signal should be given to the brakesman to prevent him drawing men from the pit until the locomotive was clear of the engine house. The jury considered that Coulson, the banksman was deserving of censure in leaving his work when men were being drawn up the pit. One of the jurymen suggested that one of the marks on the indicator should be covered up when not required and Mr. Willis, the viewer and Mr. Atkinson, the Inspector assured the jury that the required arrangements were being made.

DUKINFIELD. Ashton-under-Lyne, Cheshire. 4th June, 1867.

The Dukinfield colliery was also known as the Lakes Pit and the Victoria Colliery, and was owned by the Dukinfield Colliery Company with Mr. F.D. Astley as the sole proprietor of the pit. Isaac Whelden was the manager and had been at the colliery for five years.

When the pit was sunk water was met and it was raised by plunger pumps. The top one of 12 inches in diameter and the lower ones 7 inches and 6 inches diameter. All had a stoke of eight feet and powered by a slide level Cornish engine 17 foot cylinder and an eight foot stoke. The steam was supplied by three boilers 34 feet long and 6 feet 6 inches in diameter working at a pressure of 12 lbs. per square inch.

The winding engine was 16 inches in diameter and the winding drums 24 feet two and a half inches in diameter. the total weight of the crank, axle and drums was 53 tons. There was a brake drum attached to one of the winding drums which acted on a steam brake of great power. There was balance on the main shaft which was a drum of 6 feet 8 inches diameter which was attached to a balance weight of 5 tons. The load was raised at 21 miles an hour.

There were two shafts at the colliery. The downcast was 340 yards deep and led to the Black Mine and was connected to the upcast shaft for ventilation. A horse road ran along the level and about half way there was an upbrow and it was at this point that the explosion took place. The workings extended six hundred yards on a level with the upcast shaft in a southerly direction. The workings on the north side went for three hundred and fifty yards but this part of the mine had been abandoned when a fault had been struck some time before. The west workings extended one hundred and fifty yards with a dip of two feet per yard and a new air hole was being made in that direction for ventilation and this would communicate with the deep workings.

George Phillips, who was killed in the explosion, was the sole underlooker and had exclusive charge of the underground workings. Two firemen worked with him, John Moores and Joseph Wirrell. Their duties were to attend to the ventilation of the mine under the direction of Phillips and to inspect the mine before the colliers commenced their work. This took them two hours in the mornings and then they worked on the roads and did not get coal. They were employed as daywagemen.

The mine was worked by day and night shifts but there were as few as four people in the mine at night. On the night preceding the explosion Joseph Wirrell was at work and he left the pit at 6 a.m. when Moores followed him and they met in the mine. Wirrell went to see the furnace which had been working only seven weeks.

At least seventy three men and boys went into the pit under the direction of the underlooker whose duty it was to see that the mine was free from gas. On the day of the disaster, all went well until about 8 a.m. when an explosion was heard in the pit. The

manager, Mr. Welding, with a number of men descended the pit and thirty men were found, some badly injured and they were sent to the shaft. Of these nineteen were able to walk and eleven needed assistance. On going further into the mine, it was found that thirty two miners were dead but six men had escaped another way making a total of thirty seven dead.

When the explosion took place, Thomas Wynne, the Inspector was half a mile away from the colliery and he immediately went to the pit and descended to find that all the air doors were down and that the air from the downcast shaft was going up the upcast shaft and no air was going into the workings.

Wagons were broken and driven into a heap and the Inspector made a temporary stopping to drive as much air into the working as he could. As the air went forward the explorers were able to get into the workings. They found a body eighty yards from the shaft. In the next two hundred and forty yards they passed eleven bodies and at the top of the jig-brow they found twenty seven others.

Medical assistance was got for the men and everything was done for them as they were sent to the surface. In the mine, the airways and brattice was blown away in many places and the roof and floor had been displaced. Despite this, the men had cleared the rubbish away by 3 p.m. and the removal of the bodies was completed.

Martin Birtenshaw was in the pit at the time of the explosion and worked in the new air brow of the new mine to the old pit. He saw Mr. Phillips at the surface as he went down at 6.10 a.m. James Hamilton had been down all night and said that there was no air was travelling. Phillips did not hear him. When he had been at work for some time, the explosion occurred. His lamp went out and some stones fell from the roof. He went to the horse level but the afterdamp was so bad that he and others were driven back. They then went to the bottom of the brow where there was some water and they were rescued from there.

As the bodies arrived at the surface they were wrapped in quilts and if they had been recognised, they were sent home in carts. If they were not recognised they were conveyed to a cottage which served as a temporary mortuary. Many of the bodies were bleeding round the nose and mouth and a crowd of wailing women had gathered at the pit head and the anguish of mothers was heard as their dead men and boys were brought of the pit.

In early reports the explosion was blamed to a leakage of foul air from an adjoining mine. The were men supplied with lamps as it was regarded as a fiery mine but it was known that the boys worked with naked lights against the Rules of the colliery.

On the Friday after the disaster, Patrick McHugh died in his own house which brought the total of dead to thirty eight. Twenty one were unmarried and one a widower and there were sixteen married men who left twenty two children under ten years of age, eight between two years and fifteen years and four above fifteen years of age, a total of thirty four fatherless children and sixteen widows.

Those who died were:-

John Lomas aged 20 years, miner.

Henry Noble aged 14 years.

William John Taylor aged 56 years, miner.

Terence McHugh aged 19 years.

Patrick McHugh aged 22 years, brother of Terance.

Joseph Armfield aged 17 years.

Robert Armfield, aged 17 years, brother of Joseph.

Thomas Smethurst 15 years. miner.

Samuel Hudson aged 15 years.

Richard France aged 36 years who left a wife and five children.

John Thomas Buckley aged 11 years.

William Mellor aged 42 years, miner.

John Gee aged 34 years.
Thomas Gregson aged 18 years, miner.
James Mercer aged 34 years.
William Chorley aged 51 years.
William Harratt aged 49 years, left two girls.
John Elliott aged 40 years
James Haslam aged 34 years.
George Phillips, underlooker with five children aged 33 years.
Luther Warren aged 13 years.
James Brennan aged 19 years.
William Quinlin aged 24 years.
John Rixon miner aged 27 years who left a wife and two children.
William Booth aged 24 years, miner.
Charles Booth aged 22 years.
George Robinson aged 20 years.
William Martin aged 26 years, miner.
Samuel Johnson aged 21 years.
William Ashton aged 22 years.
William Garrett, miner aged 44 years.
James Hill aged 23 years.
David Clayton aged 28 years, miner.
Samuel Norton waggoner aged 14 years.
William Ernest Kay aged 15 years.
John Shore aged 14 years.
Thomas Hooson.

Those who were injured were:-

James Winterbottom.
Edward Hidgkins.
Samuel Ramsbottom.
Joseph Wild.
Joseph Phillips.
John Walker.
John Pickup.
John Brooks.
Martin Burtenshaw.
George Bullock.

Mr. Astley, the sole proprietor of the colliery went to every cottage of the sufferers that day and gave everyone £4. A meeting was called with the objective of organising a fund for the relief of the dependants but Mr. Astley said he personally, would provide for all the sufferers and provide for the families.

The colliery was examined by Mr. Wynne, the Inspector on Friday and the inquest opened on Saturday before Mr. W. Johnson of Marple was the coroner. Mr. J. Wooley a former coal owner was the foreman of the jury. The viewing of the bodies took place for two hours and the evidence of identification took another three hours and the session was adjourned.

At the inquest was held by the Coroner Mr. W. Johnson of Marple, at the Astley Arms Hotel in Dukinfield. The spacious room at the hotel where the inquiry took place the room was crowded by many people, mainly miners.

The Mines Inspector had directed Mr. Phillip's attention to a place where he thought gas might accumulate and told him that it must be removed before the level was tapped into the air-brow and that it must be done at night when the men were not working.

On examining the pit the morning after the accident, the Inspector came to the conclusion that the explosion had taken place in the horse-road, about one hundred and forty yards from the upcast shaft. Four of the twenty seven victims were burnt but there was no sign of fire in the coal. A lamp was found lying on the floor and the gauze hanging up. All the miners were required to use lamps which were locked. The broken lamp was found at a place where naked lights were forbidden.

A fortnight before the explosion, Phillips, the underlooker reported a fall of earth at the end of the Black Mine tunnel and the Inspector told him to get some men and make it right. Phillips said that the earth was nearly up to the top of the tunnel. After the explosion only a small opening was found in the fall which severely restricted the flow of air.

Phillips had never reported gas to the Inspector in this part of the mine where it would have been expected. He had been employed at the pit for about a year and had previously been a practical miner. If he had done what he had been told the gas would have been cleared in five minutes. Gas had been reported in the Peacock and the Canal seams and had been removed.

Martin Birtenshaw was in the pit at the time of the explosion which put out his lamp. He went down the horse-road where the afterdamp was too bad so he went to the bottom of the brow where there was some water and they remained there until they were rescued.

On the night preceding the explosion, Joseph Wirrell was at work and he left the mine at 6 a.m. on Thursday morning. Moore succeeded him and met him there. Whelden was last in the mine a week or two before the explosion when he went to the bottom of the shaft to the furnace which had been only installed about seven weeks before and after the furnace was set to work Phillips made measurements and reported 15,000 cubic feet of air per minute were passing through the mine. This is the last occasion when he was down the pit.

There were some old workings in the Black Mine, about 500 yards in length but these workings had not been used for about three years. Parallel to the upper level a third level had been started and driven 300 yards to communicate with the higher level These had not been completed and gas could accumulate in them. Brattice had been fixed with a view to stopping gas building up there. Whelden said he had pointed this out to Phillips about 7 weeks ago and told him to get the gas dispersed and to do it on a night when there was no work going on.

When the explosion occurred Whelden was half a mile from the pit and he came to the pit and descended at once. Two doors were blown down in the level and air was not going into the workings but went straight up the upcast shaft. Coal wagons were broken and driven into a heap and they made a temporary stopping to drive the air into the workings as quickly as possible.

He then went into the workings and found a body 80 yards from the shaft. From there they went 240 yards along the horse level and found 11 bodies and examined them for life. He then came up the horse brow to the jig brow and found 27 bodies remaining.

On examining the pit the next day he thought that the explosion had taken place in the horse road about 140 yards from the upcast shaft. 4 of the 27 were burned and also the horses in the jig brow. The drawers in the horse roads were allowed naked lights and the miners worked with locked Davy Lamps.

He believed that the brattice at the ends of the engine brow would sweep the gas into the horse level and then into the workings. A Davy lamp with the gauze hanging up was found at a place where open lights were not allowed. The place where the explosion took place was 7 feet wide and 4 feet high.

The witness continued that 2 weeks ago Phillips the underlooker reported a fall of earth at the end of the Black Mine tunnel. He told him to get some men and put it right. Phillips said the earth was nearly up to the top of the tunnel. On inspection after the explosion he found only a hole "6 by 3' had been made at the top of the fall. When he

was questioned by Mr Wynne at the inquiry, he said Phillips had never reported gas where he would have expected it to be.

Phillips had been at the pit twelve months and before that he had been a practical miner. He thought it was an easy matter to remove the gas and it had been reported that there was gas in the Peacock Cannel Mine and the men were brought out of the pit. The gas would go through the new workings but it was done at night when the men were not working in the mine. He did not recollect that John Hudson had complained of gas in the mine in the past six or seven months. He believed that the explosion was caused by someone placing an obstruction which diverted the current of air and drove the gas out of the old workings into the horse level where the men worked with naked lights.

Joseph Wirrell was a fireman since last March. He was previously an miner at the pit and he was on duty on the night of the explosion. He left the mine a little before 6 am. on Thursday morning when John Moores came down and he went to the surface. He told Moores that the workings were all right except for one or two places where gas would fire at the lamps. One was in the top coal on the north side of the jig brow. He saw Phillips when he left the pit and said he expected the miners to be getting through the third level with the air-brow. He reminded him to get some boring rods and then plug the holes before they drove through to the level.

That night he had been into the Peacock Cannel mine and found a little gas where William Mellor worked and on the north side there was a place where it fired at the lamp near William Harrott's place. In order that the gas might escape it had to pass through the new workings and done at night when the men were not there. He had to give his report to Phillips not Whelden and he never said anything to Whelden about the gas but told Phillips that the air was slack on Tuesday. There had been a fall in the drift and he and Moores went to clear it of dirt. There was no air passing except through the loose material at the top of the fall but before long he could crawl through on hands and knees. He told Phillips that a fresh air road would have to be made but it was not made before the explosion.

On Friday before the explosion he gave Phillips notice that he was leaving the pit as he could get more money for himself and his boy were his reasons. He had often complained to Phillips that there were too few daywagemen to keep the roads clear and when he gave notice he was told that there would be twenty more. Phillips said that the pit was not profitable enough to employ so many more men.

John Moores, the firemen had worked in the mine for about twenty years and went to the pit at little before 6 a.m. on the morning of the explosion. He saw Phillips at the pit bottom and asked where he should go that day. He was told to go to No.40. he left his bottle and dinner at the top of the tunnel and went to clear the earth that was in No.40. Twenty minutes later and 300 yards away, the explosion took pace It did not blow out his lamp.

Mr, James Horsfall, the manager of the Fair Bottom colliery near Ashton-under-Lyme, went to the pit with his underlooker on hearing of the explosion to give assistance. He found doors blown in the horse level and new screen fixed instead. The roof in the horse road was in a very bad state and men were set to repair it. Several bodies were found and sent to the bottom of the new mine and along the No.2 tunnel to the old mine door and they then went back to the shaft.

He was critical that gas was allowed to remain in the mine and he thought the gas had been drawn into the horse level and fired at an open lamp. The coroner thanked Mr. Horsfall for his efforts and thought that he had been responsible for saving the lives of two of the miners. His underlooker who went with him was Oswald Wooley.

Thomas Jones of Pendlebury now but he worked in the pit at the time of the explosion said on the morning of the explosion, Phillips told him to go to No.40 air hole which wanted cleaning and a proper road making. James Mornington went with him. They went to the top of the timber and started to throw dirt from the couplings. They had been at work for only a few minutes when the explosion took place.

He told the Inspector the road was three feet wide and the air passed quickly over the rubbish and the explosion did not blow out his lamp.

James Normington, coalminer of Oxford Road, Dukinfield, said he had worked at the pit for only two weeks and on the day he started work Phillips told him to go with John Moores and clear the No.40 air tunnel as it had fallen in. He found the tunnel closed but a little air was passing over the top of the rubbish.

He got the road through but there was loose dirt at the top that could have fallen in at any time and closed the tunnel. They timbered and put in a side wall. On Monday morning they started '*oot riddling*' to make the road larger at the bottom.

At the time of the explosion James Mormington was pulling down the top and he was working with others to clear it away. About a full tub had come down as soon as it was touched and this was immediately before the explosion. His lamp was blown out and he was thrown down.

Joseph Kay, coalminer of Dukinfield, was not at work on the morning of the explosion because he was lame but he was aware that there was gas in the third level. He knew that if the No.3 level had trapped gas, that gas would have escaped into the workings of the new mine and cause an explosion.

He never told this to Welding because when he reported gas on previous occasions Isaac Welding had told him to go about his business. This revelation cause a sensation in the court among the gathered miners. He then told Welding that he did not want to work in the place because it was not safe and he did not complain about the second lot of gas to him because he knew he would loose his job and Welding had never come to see if his information was true or not. H e told the court that earth stoppings were used in the mine but they were never air tight. This was because of the lack of bricks and mortar and the mismanagement of the pit.

John Hodgson, coalminer of Brick Lane Dukinfield. was in the pit at the time of the explosion and had worked in the pit for two years. John Moores the and fireman and Joseph Wild the night fireman and they did not come to inspect the place regularly and they missed as much as four days a week. When the furnace was put in seven weeks before the explosion he did not find the ventilation better and told Welding so but he never came to inspect his place.

John Bate, coalminer of Dukinfield, was employed to the pit up to three months before the explosion. He was called a fireman but was engaged chiefly in jobbing about. The ventilation was bad and then the furnace was built. He had never seen brick stoppings in the mine bar two, one of which he built himself and Moores the other. He examined the workings only once a week and spent much of the day shifting dirt. This was done with the knowledge of Phillips who had to work like any of the other men. When Bate complained that the men were working without air, Phillips said that brattice should be got there. Some time after putting up the brattice he told Phillips that there would be an explosion if proper precautions were not taken and he had shown Philips where the gas lodged.

He also told Welding and was discharged by Phillips through Welding's orders three months ago because he refused to go down the mine alone at 4 a.m. He said he was discharged from being a fireman but the thought that here was no air or any regulations at the pit so he left.

Mr. W. Foulkes, surgeon of Dukinfield, went to the pit on the morning of the explosion and saw the bodies brought up. He said they had all died from suffocation.

The Coroner asked if any of the assembled colliers wanted to say anything and James Ramsbottom came forward. He found Samuel Moores working with a lamp that was produced in court and the lamp was in a dangerous state and Moores knew it. He had asked for another six weeks before the explosion but could not get one. Moores said that he bought the lamp at a pawn shop and the gauze broke three weeks ago. The miners were responsible for buying their own lamps but the company should provide the gauzes. He asked Phillips for a gauze and was told that the had not got one to fit and he would

have to keep it. On the morning of the explosion he got a new lamp from the fireman. Philips had seen his old lamp and sent home to work on the far level. Both the fireman and the underlooker knew of the state of the lamp.

Mr. Wynne, the Inspector had no doubt that gas had accumulated on the No.3 level and had been blown to the horse roads where it fired at an open light. He said that fiery mines were not dangerous if they were well managed.

The jury deliberated for an hour and returned a verdict of accidental death but added "We are of the opinion that the general management of the pit was characterised by great incompetence but not sufficiently grievous as to fix the manager with criminal responsibility."

GARSWOOD PARK Ashton-in-Makerfield, Lancashire. 20th. August, 1867.

The colliery was the property of David Bromilow and this disaster followed the one of the 4th. May in the previous year. There were extensive workings at the colliery and four seams were worked. The deepest was the Little Delf Mine which was about three feet thick and was 440 yards from the surface and extended 1,000 yards from the pit eye.

Two colliers, Henry Winstanley and John Halsall were working in the rise workings on the north eastern boundary of the mine in two separate places and in working the mine. Powder was used but under strict regulation. No work person was allowed to fire a shot until the fireman had carefully examined the place with a safety lamp. The fireman, Joseph Topping aged 64 years, was a very experienced man. At about 9 a.m., Samuel Mather, the underlooker and Paul Lea, his assistant, were in Winstanley's place measuring up. They saw Joseph Topping, the fireman who told them that the ventilation was 'very brisk'. The explosion occurred about midday and a few minutes before the report was heard Topping was seen in the No.5 level going to fire a shot for Henry Winstanley. His shift would have ended at midday and another fireman would have taken his place.

At the surface, a rush of air told of the disaster and soon the news was brought to the surface from terrified workmen who had flocked to the pit eye to be drawn up and escape from below. There was great confusion and it was impossible to tell how many were involved in the disaster. As the news spread, people flocked to the pit to find out about the fate of their loved ones, friends and relatives. Most were reassured but there was a small band who could only stand and wait.

A party of volunteers was organised and led by Thomas Molyneux and his son Thomas who were the senior and junior underground managers at the colliery along with William Tickle, the surface manager. Their task was long and tedious and it was some time before they could get to the seat of the explosion and it was dark when the bodies were recovered. They were taken up the shaft in three windings of the cage and removed to the Hare and Hounds public house where they were ranged in the club room. There were two that had not been recovered but were known to be in the mine. They were in a brow that was full of chokedamp and were not recovered until one o'clock the next morning.

The Inspector, Peter Higson, was at the Vron Pits in North Wales when he was informed of the disaster by telegram. When he got to the colliery all the men had been taken out of the mine and the ventilation had been partially restored.

Those who died were-

John Leadbetter, driver of Parr.

William Brown, collier of Parr.

Thomas Radcliffe of St. Helens.

Thomas Wilkinson. A jigger of Parr.

John Eden.

Henry Wright. A driver of Ashton-in-Makerfield.

William Cheetham jun.. A collier of Parr.

William Chesworth. A collier of Haydock.

Thomas Anders. A collier of Parr.

William Baron. A driver of Parr.

Joseph Topping, fireman of Haydock.

Henry Winstanley. A collier St.Helens.

William Briers. A driver of Parr.

Anthony Fillingham. A collier of Parr.

The fireman Joseph Topping.

Topping had escaped the disaster of 1866 but now was on the list of the dead. John Eden was the son of Mrs. Mather whose husband had been murdered at St.Helens a few weeks before.

The inquest was held at the Hare and Hounds by Mr, Driffield the Coroner. Evidence was taken from the workmen and expert witnesses and the Coroner summed up at great length. The jury returned an open verdict, coupling it with an expression that in the future working of the mine the bratticing should not be carried to a great distance as in this case, and that every precaution was called for in the appointment of firemen, and in adopting all possible means of improving the discipline of the mine.

The Inspector commented in his report that the evidence at the inquest stated that 6,000 cubic feet of air per minute were going from the downcast shaft and after repeated measurements, he found that there was no gas when 4,500 cubic feet of air were passing. He continued-

“There was no indication of any sudden discharge of gas having taken place, only an empty shothole 20 inches deep, out of which the powder had blown the ramming, removing little, if any of the coal. I caused the current of air to be shut off, taking down a portion of the brattice, to discover how soon the place would become foul at the extremity. In 10 minutes I perceived a slight blue cap on the flame of my lamp, which increased in magnitude very slowly for some time, gradually approaching the point of danger. On the brattice being readjusted the level became quickly cleared, sweet and cool. It was manifest, therefore, that a quantity of gas had been negligently suffered to accumulate there by Winstanley not having maintained the efficiency of the brattice, and that it was ignited by firing the shot, which in the consequence of burning out, would produce a large and extended flame but whether Winstanley fired the shot himself before Topping got to the spot, or whether, on Topping going in, he found the brattice down, and gas lying in the extremity, he adjusted or replaced the brattice, and ignited the fuse before the current removed the gas beyond the reach of the flame of the shot, or diluted it so as to render it harmless, there was no proof, as all the work people in that part of the mine were killed. Winstanley was lying in the upbrow a little nearer the face than Topping, but the lamp of the latter was nearer the shothole than either of them, and unlocked. Topping had to fire the shots for five men. The air was borne up into this place by a double cloth door the roads are narrow and low, the mine being only three feet thick. A cut through in the middle of the distance being opened would have dispensed with a considerable length of brattice and made the place more safe, but the mine was deteriorated and faulty, and the object sought was to avoid working in bad ground.”

HOMER HILL. Stourbridge, Worcestershire. 12th. November, 1867.

The colliery was the property of Messrs. Samuel Evers and Sons and was opened by a pair of seven feet shafts with a sectional area of 44 square feet, The Thick of Ten yard Coal in which the accident occurred was reached by these shafts at a depth of 150 yards. From the shafts two parallel gateroads with large sectional areas, about 50 yards apart were driven to the colliery boundary, a distance of almost 500 yards. At this point the entire thickness of the seam had been cut through.

The volume of air passing through the pit was about 10,000 cubic feet per minute. A small part of this was used to ventilate the top part of the seam in which workings were very limited and the main proportion travelled along the No.2 gateroad to the north workings where, at the time of the explosions, it was distributed to ventilate the lower workings in the Nine feet Seam and returned among the No.1 or twin-road to the upcast shaft. The quantity of air was not large but appeared to be enough to sweep the gas from the workings. The only artificial means of ventilation was a small fire grate in the upcast shaft about 40 yards from the surface. The effect of this was to keep the ventilation in one direction and there was no provision made in the ventilation for any emergencies that may have arisen.

The men who died were-

J. Edwards, pikeman.

F.Barrell, bandsman and

J. Heathcock, died on the 13th,

H. Westwood and

W. Harden both bandsman, and

E. Barnbrook, pikeman, died on the 14th.

S. Guest, bandman, died on the 18th and

W. Battleton, bandsman who died on the same day and

D. Hart and J. Griffiths, both bandsman who died on the 19th.

W. Gordon, bandsman, died on the 23rd.

J. Poulton, bandsman, died on the 26th.

Mr. Baker gave an account of the workings after the explosion. He said-

“In the company of officers of the colliery, I travelled the northern or No.2 gate road until we arrived at the point up to which the ventilation had been restored and was about 260 yards from the shaft. We then pushed on for 200 yards and we reached the back opening or stall in which the fall of roof had occurred, which according to the information I was given, had taken place on the morning of the explosion. The opening then contained a large quantity of explosive gas evidently issuing from a fissured and very soft part of the coal seam from which the gas that caused the explosion had undoubtedly issued. Nearly all the doors on the cross headings were deranged and others broke and the ventilation destroyed but little or no other damage seemed to have been done in the other workings or machinery, except to the cage and the wire rope. These had been driven by the force of the blast some 70 to 80 yards up the upcast shaft.

It was fortunate that the workmen were sheltered from the fearful blast by one of the long pillars, otherwise no person in that part of the mine would have been alive to tell the tale. we were told that a loaded skip, the horse and driver, some distance along the No.1 road, killing the horse and so seriously injuring the driver that he died in a day or two after the occurrence. the contents of the skip were scattered in all directions and another skip in No.2 road, standing 400 yards from the scene of the explosion, was forced off the rails.”

The evidence at the inquests showed that there had been a very heavy fall amounting to about to between two and three hundred tons, which was followed immediately by the explosion. The deputy, Edward Foley, who examined the workings before the explosion stated that he had examined the stall but he could reach only 25 feet which was five or six feet short of the roof and it was possible that there was a large quantity of gas lodge in the roof.

Mr. Baker commented-

“The exclusive use of lamps under such circumstances will undoubtedly prevent most, if not all, explosions of this character and it would be well, in the event of any alteration of the existing law, to make provision to enforce so desirable precaution.”

FERNDALE. Porth, Glamorganshire. 8th. November 1867.

The Blaenllechau colliery was better known as the Ferndale pit and was the property of Messrs. D. Davies and Sons of Blaenllechau. It was situated in the Rhondda Fach or the Little Rhondda valley five miles beyond Porth, near a small station of the Taff Vale Railway and seven to eight miles from Aberdare. Mr. David Davies, one of the proprietors of the colliery, which was belonged to him and his brothers and he had not taken an active part in the running of the colliery since the death of his father.

It was one of the largest mines in South Wales covering 1,200 acres and was worked by two shafts, an upcast and a downcast which were sunk in the middle of the coal area. Extensive mining operations had been carried out for previous six years and it was known to be deep and give off gas but the proprietors were careful and no serious explosions had taken place at the pit. The colliery produced 5-600 tons of Welsh Steam coal a day. The colliery employed 840 men and boys but no register of names or ages were kept.

Mr. William Adams, a mining engineer of Cardiff, was a consulting engineer and visited the colliery once a month to advise the resident manager. He advised the management of the colliery and his advice was acted upon. He produced plans of the colliery at the inquest into the disaster. These showed that the colliery had two winding shafts which were downcast to the Four Foot coal at 278 yards and measured 17 feet by 12 feet with water pumps 100 yards from the surface, There was very little water below this depth.

The upcast shaft was first sunk to The Four Foot coal and was then to the Six Foot and the Nine Foot seams 40 yards below, at 318 yards. The shaft measured 14 feet by 11 feet. Ventilation was from a furnace 72 square feet which consumed 90 tons of coal per month and the return ventilation was separate for each district, with the ventilation for the Duffryn district returning through a dumb drift to the upcast shaft. No daily record of either the quantity or the quality of the ventilating air was kept. It was proposed to sink two more shafts to increase the ventilation but this work had not started.

The coal in the mine was four and a half to seven and a half feet thick and gently undulated giving a maximum gradient of 1 in 14. The pit was worked in three districts on one level about 300 yards deep. In the Blaenllecha district the coal was worked by a engine and a rope. In the Rhondda district it was worked in a straight heading sloping 1 in 18 and about 1,100 yards in length. A self-acting plane was about to be installed in this district but at the time of the explosion the work had not started. The Duffryn district was worked by horse power on a heading the dipped for 700 yards.

Thomas Powell the lampman had been at the pit for two years and the colliers were issued with two lamps, one Davy lamp and one Clanny lamp and it was the practice to issue three lamps to two men. The Davy lamps were the property of the Company and were issued locked but the Clanny lamps were owned by the men. Two types were used because although the Davy lamp was deemed safer, the Clanny gave off more light due to it having a wider gauge of gauze.

The lampman gave out the lamps at the pit top between 4.30 a.m. and 6 a.m. Two lampboys, both aged 15 years, Thomas and Llewellyn Price, helped him give out the lamps from two windows in the lamp house, one for the Clanny and one for the Davy. It was usual that about 500 lamps were issued in half an hour. On the day of the day of the explosion, 540 were given out. When they were brought back, the Davy lamps were unlocked by him and the Clannys by the men themselves by the aid of a key that was on a chain outside the window. In the past there had been attempts by the men to tamper with the lamps and try to open them with a nail and pick. When Mr. Powell told the manager he did not know what to do and said, "They were a rough lot.' Two men had been reported and fined 10/- for a breach of the Special Rules of the colliery. There were three lamp-stations underground to re-light the lamps, one in each district. Three boys helped in these lamp-stations and two were killed, only the one in the Duffryn district escaped with his life. Giving evidence at the inquest Mr. Powell stated that there were no

'naked lights' used in the mine but the hauliers were issued with 'Comets' which were naked lights.

Mr. John Williams was the manager of the colliery and he had been appointed about a year before the explosion. Mr. Benjamin Walters was the overman. John Thomason was the night fireman, who was sometimes called the night overman, John Harris was the fireman in the Rhondda district and died in the explosion. Thomas Price had charge over the Blaenllecha district and Thomas James the Duffryn district. Mr. W. Jones was the banksman. John Lewis and John Lloyd, both colliers and Henry Lees and Reuban Edwards their hitchers were all killed in the explosion.

For some days before the explosion it was foggy and the pit was situated in the bottom of the valley and the state of the air could have impeded the ventilation and caused an accumulation of gas. The explosion took place at 1.20 p.m. on Friday 8th. November. There were several people at the surface at the time who gave eye-witness accounts of the event at the inquest. William Jones, the banksman for fourteen months and who had worked at the colliery for five years, was at the pit mouth waiting for a tub to come up when he heard the explosion which he described, '*was like the report of a canon*'. Smoke came up the pit and he was driven back a little but he did not fall down. The concussion shook the whole of the mine and the report was heard throughout the valley. The flames got almost to the top of the downcast shaft and volcano of stones and ashes came from the pit.

The engineer stopped and reversed the engine and then brought up the tram for which the banksman had been waiting. On giving his account at the inquest it was reported that William Jones appeared to panic and his evidence became incoherent. He said he went to the engineman and they both ran to the lamp house. P.C. Edward Tamphin of the Glamorganshire Police, lived near the pit and was at home when the explosion occurred and he heard a second explosion. He went to the pit immediately and saw the engineer on the staging. The man told him to go to the top of the shaft and open the fans in a minute and then the engineer worked the cage backwards and forwards in the shaft to increase the ventilation.

At the time of the explosion there were 350 men employed at the pit with 328 in the workings. 170 were on the East Side and they all got out of the pit uninjured. The rest worked in the Rhondda South and West side. There were 130 who came out of the mine uninjured. 21 of them were hurt, some of them badly and they had been working in the Rhondda south district, which left 170 men and boys who were thought to have been killed.

Preparations were made to descend the pit as soon as it was deemed safe to do so and messengers were sent down the valley to the neighbouring pits and over the mountains to Aberdare and Merthyr. Workmen rushed to the pit to give help. The manager of the colliery was the man to lead them as he knew the pit best but he was believed to have been killed in the explosion. The first object of the rescuers was to find the manager and he was one of the first dead to be found. He had been suffocated by the afterdamp. The exploring parties soon found wreckage and destruction of life and property. The men who worked on the South Side escaped and they felt a rush of air and went to the bottom of the shaft at once.

Mr. Walters, the overman, was at the bottom of the shaft which fortunately was in working order after the explosion and he quickly got those men who were alive, up to the surface although many had to wait their turn with dreadful anxiety. They got to the top exhausted and the relatives, who had had a terrible wait, took them to their homes.

There were reports in the press at the time that of the 170 men who got out of the East District, were so badly shaken that they would not go into the pit again but this report proved incorrect. Mr. Davis, the owner of the colliery, issued a statement which said-

"The men who escaped were amongst the most prevalent of those who went down the shaft in search of their missing companions and their labour in the work of recovering had been unremitting. It is, therefore, but just to these brave fellows to let

it be publicly known, that instead of shrinking from danger which they might indeed be well excused from doing, they were the most foremost amongst those who entered the difficulties and perils of searching the pit."

News of the disaster was telegraphed to Cardiff and a body of Police under Superintendent Thomas arrived at the colliery to clear the pit mouth of the anxious crowd. There was an anxious crowd of some 3000 people at the pit bank who had to be controlled by the Police. They put up barricades to keep an open space around the pit shaft.

Help was quickly forthcoming from surrounding collieries and Mr. Burns, the manager of the Aberaman pit, was one of the early arrivals who directed the operations at the pit mouth. He was followed by Mr. Henry Jones and Mr. Davies, the colliery manager who arrived at 4 p.m. He arranged a party of 40 fireman, who went into the pit as soon as it was possible by another work party who successfully dispersed the gas that was present in the pit.

The rescuers descended the shaft and since they found no one alive at the bottom and two had been brought up dead, it was concluded that all those now in the pit had perished. The maimed bodies were brought to the pithead and as they were carried away by wailing women in a frantic state of anxiety. They came forward to see if they recognised a father, son, brother or husband in the charred and maimed features. The body of the manager, Mr. John Williams was recovered and his features were calm as if he was asleep and he was taken the few yards to his home where the mother and children mourned.

The air in the pit was foul and there was a constant danger of another explosion. The rescuers met heavy falls in the airways which had to be laboriously cleared with picks and shovels and the work was very slow. By 7 p.m. only three had been rescued and twenty bodies recovered. Sometimes it took hours to recover a single body and the work went on throughout the night with volunteers working until they could scarcely stand.

The bodies were brought to the surface 12 to 15 at a time and tram load after tram load of rubbish and masses of rock had to be removed. The whole of Saturday was spent clearing a fall in the Duffryn level that was in a dangerous a state and the men worked in total darkness fearful of another explosion.

Mr. Carew, the manager of the Plymouth collieries at Merthyr, who was formally the manager at the pit, went down at 11 p.m. with Mr. Lewis of Merthyr and remained down until 6 p.m. A stream of water was directed down the shaft to improve the ventilation. Mr. Wales, the Inspector for the District, arrived at the pit at 3 p.m. and went underground immediately with Mr. Davies and Mr. W. Adams, G. Brown, W.T. Lewis, L. Lewis, Morgan Joseph, William Fruvan and Mr. Walters.

By Saturday the shafts were cleared and the debris in the East District was also cleared. Mr. Wales on seeing that the work was progressing left the pit saying that he would return on Monday. The men working in the pit were badly affected by gas and by Sunday the conditions were so bad that there could be no work done at all. There was a conference in the colliery office as to the best means of getting better ventilation. After a long discussion it was agreed that the ventilation furnace should be relit but nobody would take the responsibility of giving the order for fear of another explosion and so matters stood with no work being done. They waited the arrival of Mr. Wales who arrived, as he had promised, on Monday at noon and the conference resumed. Mr. Wales sanctioned the relighting. Mr. Joseph and Mr. Jones and a few others descended the mine to light the furnace which they did without incident and the ventilation improved immediately. By 5 p.m. Mr. Wales went down the pit and the work was resumed with vigour.

By Saturday the party under the command of Mr. Carew thought that they heard a faint groan and the whole party listened in complete darkness and they were all agreed. They thought that it was forward and they went forward on their hands and knees where they found a young man of 24 years lying in the airway. He was very shocked and could give no information at all but said someone had followed him but he had not heard him for 2 to

3 hour. Monday was spent restoring the ventilation and moving obstacles. By 11 a.m. the bodies had been discovered and by 2 p.m. a further 18 were found which were badly burnt.

At the pit head there was a large crowd of colliers which came from a 10 mile radius and they were working with the colliers at the pit. The bodies were starting to decompose and the stench was very bad and the rescuers were working with handkerchiefs over their faces and spirits were freely available to the rescuers.

Thomas Carew who was resident viewer at the Plymouth colliery and was formally manager of the Blaenllocha colliery from January 1864 to March 1865 when on the day of hearing of the explosion and got to the pit between 10 and 11 a.m. and went down. He stayed until 3 a.m. on Sunday and went down again on Sunday night and came up 9.30 a.m. on Monday.

The first thing that he saw was the stopping between the intake and the return air at the stables was blown towards the stables. In John Davies' level he saw Mr. H. Jones trying to put up a brattice and a horse was lying dead in the doorway attached to two trams. The door was blown to pieces and further up stones had fallen onto a tram and the coal was blown towards the shaft. He went on until he saw Mr. Jones and a gang trying to restore the ventilation by brattice. One hundred yards beyond this they tried to go forward in the dark with 4 men in front and four behind but the gas was too strong and they had to retire. After returning they started erecting brattice and they were doing this when they found a man alive. The air had got to him and this was Saturday afternoon. He continued putting up brattice and was relieved by Morgan Joseph. He thought there had been two explosions, one in John Davies' level and the other in the No.1 rise 8 to 11 dips. He thought the horse tram and the doorway caused the explosion and an accumulation of gas that was fired by a lamp that was found in Chadwick's stall. He thought the first explosion interrupted the ventilation and caused the second.

Thomas Morris collier was working in the Blaenllecha district in Isaac Thomas's stall at the time of the explosion. He did not hear a noise but he saw there dust rise and took his son by the hand and went towards the incline. They both fell down and were carried out by others who found them. He had worked four years three months in the pit and had seen and talked to Williams the manager twenty minutes or so before the explosion. One of the hitches at the pit bottom was blown into the sump and killed but the another escaped with little injury.

Mr. Roberts, assistant to Mr. Davies of Aberdare, was the medical officer at the colliery and he confirmed that the total death toll of 178 was correct but a few bodies were still in the pit. Of the 178, 145 were burnt, 25 were suffocated and 5 were killed by the concussion and violence of the explosion. Some of the names of the victims were unknown and the Coroner had received many letters inquiring about the dead. One asked if a man named Marshall had been found. The local Police Sergeant, Sergeant Wise, identified the bodies of James Romley and Samuel Roach. The identification of the bodies was difficult and unpleasant.

**VICTIMS OF THE FERNDALE EXPLOSION DECEMBER, 1867.
From 'MERTHR TELEGRAPH', 1867. c/o Treorchy Library.
Kay Warren-Morgan.**

Those who lost their lives were-
John Williams, aged 50 years, manager.
Benjamin Morris aged 29 years.
Thomas Thomas aged 48 years.
John Thomas aged 16 years.
Lewis Thomas aged 13 years.
William Willis aged 13 years.
Thomas Thomas aged 39 years.

Thomas Thomas aged 25 years.
Thomas Vaughan aged 23 years.
Thomas Lowis aged 19 years.
John Harris aged 26 years.
John Owen aged 25 years.
Thomas Williams aged 25 years.
David Davies aged 25 years.
John Jenkins aged 48 years.
Benjamin Saunders aged 20 years.
William Walters aged 14 years.
Evan Jones aged 14 years.
John Swanscott aged 57 years.
John Lewis aged 28 years.
Henry Rees aged 30 years.
Morgan Jones aged 36 years.
David Jones aged 14 years.
Richard Burke aged 24 years.
David Evans aged 17 years.
David Morris aged 18 years.
David Thomas aged 22 years.
John Richards aged 14 years.
Edward Mosely aged 27 years.
William Griffiths aged 23 years.
Edward Williams aged 15 years.
Evan Roberts aged 23 years.
John Davies aged 35 years.
James Driver aged 13 years.
William Williams aged 17 years.
William Williams aged 29 years.
Robert W. Roberts aged 12 years.
John Williams aged 25 years.
Miles Hughes aged 13 years.
Morgan Griffiths aged 44 years.
Morgan Griffiths aged 15 years.
Benjamin Morris aged 50 years.
John Morris aged 19 years.
Ebenezer Morris aged 16 years.
Daniel Morris aged 16 years.
Evan Meredith aged 48 years.
David Lewis aged 33 years.
George Edwrads aged 15 years.
William Hammen aged 26 years.
William Williams aged 33 years.
James Roblin aged 51 years.
Evan Samuel aged 21 years.
Nathaniel Roach aged 33 years.
Charles Owen aged 47 years.
Owen Owen aged 17 years.
William Nicholas aged 15 years.
Thomas Parfit aged 33 years.
Thomas Parfit aged 33 years.
Benjamin Thomas Parfit aged 16 years.
Daniel Brown aged 15 years.
William Davies aged 15 years.

Evan Lewis aged 21 years.
David Davies aged 22 years.
Edward Williams aged 19 years.
John Neath aged 19 years.
Henry Evans aged 19 years.
Thomas Powell aged 12 years.
John Davies aged.
John Pascoe.
Thomas Powell aged 14 years.
John Edwards aged 59 years.
Henry Lewis aged 28 years.
James Prosser aged 19 years.
John Walters aged 28 years.
Lewis Lewis aged 38 years.
William Williams aged 30 years.
John Driver aged 37 years.
Thomas Edwards aged 38 years.
William Davies aged 28 years.
John Prosser aged 35 years.
William Parker aged 25 years.
Evan James aged 24 years.
William Thomas aged 31 years.
Roger Morgan aged 16 years.
Edwin Lloyd aged 30 years.
John Lewis aged 32 years.
Edward Griffiths aged 17 years.
David Williams aged 28 years.
David Jones aged 36 years.
David Stephens aged 36 years.
Robert Laphorn aged 32 years.
Howel Williams aged 17 years.
Jenkin Williams aged 19 years.
Benjamin Rees aged 22 years.
John Lewis aged 30 years.
David Nicholas aged 45 years.
Benjamin Lewis aged 20 years.
Thomas Williams aged 54 years.
John Jones aged 27 years.
Joseph Howlet aged 33 years.
Robert Hughes aged 13 years.
Isaac Evans aged 22 years.
William Evans aged 47 years.
Isaac Thomas aged 33 years.
Charles Jones aged 22 years.
John Williams aged 26 years.
John Atkins aged 27 years.
Caleb Morris aged 41 years.
Thomas Griffiths aged 19 years.
John James aged 19 years.
Benjamin May aged 19 years.
George Cooper aged 27 years.
Peter Morgan aged 43 years.
John Morgan aged 22 years
Joseph Evans aged 35 years.

William Griffiths aged 19 years.
Llewellyn Llewellyn aged 23 years.
Mathew Llewellyn aged 20 years.
Joshua Davies aged 22 years.
T.A. Richards aged 22 years.
John Hancock aged 25 years.
Daniel Humphries aged 23 years.
David Jones aged 33 years.
Thomas Miller aged 25 years.
Thomas Morgan aged 35 years.
John James aged 25 years.
David Evans aged 23 years.
William Miles aged 21 years.
Charles Truscot aged 19 years.
John Griffiths aged 17 years.
John Morgan aged 22 years.
John Davies aged 32 years.
John Simpson Owen aged 28 years.
Henry Morris aged 27 years.
John Lukey aged 25 years.
Evan Jones aged 33 years.
Thomas Nicholas aged 18 years.
Richard Davies aged 18 years.
William Watkins aged 22 years.
Jenkin Jenkins aged 40 years.
Henry Williams aged 28 years.
An unknown boy and three unknown men.

The disaster left 70 women without husbands and 140 children were left fatherless. At a meeting at the Guild Hall in Swansea, it was estimated that the interest from £10,000 would be needed to support them and the following resolution for the Relief Fund was passed-

“That this meeting is desirous of expressing it’s deepest sympathy for the unfortunate sufferers and deems it expedient that measures should be taken to raise a fund for the relief of the widows and orphans rendered destitute by the event.”

Mr. H.H. Vivian, M.P. moved the motion and he went on to speak from his own experience that it would take two to three years before the colliery was working satisfactorily again. A subscription was opened with £200 from the Queen and there were meetings throughout South Wales where collections were made for the fund.

During the inquest, Mr. Overton, the Coroner made some enlightening remarks about the state of mining in South Wales at the time.

“Unfortunately South Wales had attained a great deal of notoriety and had the image of being the worst in the Kingdom. The Inspector’s Statistics for 1865 showed that the number of lives lost per ton of coal raised was the greatest in the Principality. The demand for steam coal has increased dramatically over the last two years and deep pits are being sunk into maiden seams. Large projects have been started and the operations have become difficult and the management insufficient and ignorant of scientific knowledge.

The large number of men that have to be employed are largely ignorant and unfit to become colliers and the lives of many are in the hands of an incompetent and reckless few.

The disasters are due to mismanagement and incompetence and I can see no improvement until a more enlightened and educated class of management and

overmen are employed and a better supervision exercised over the men. Until then there will be no hope of improvement and there will still be loss of lives in the South Wales collieries.

The Law in connection with disasters is imperfect as it is difficult to say if an offence had been committed and who was to blame. The Mines Inspection Act is badly framed and ambiguously worded. Convictions can not be made certain and few had the courage to attempt to convict. This gives rise to a miscarriage of justice. Parties have been sent for trial at assizes and have been acquitted and the inference is that there is no legal responsibility under Lord Campbell's Act. It is an illusion to think that a widow or an orphan could take an action against a wealthy and formidable Company.

It appears to me strange, in a country like Great Britain, abounding in mineral wealth and dependent so much for its high position they hold among nations, upon the proper management and development of that wealth, should not some process, some Department of State, to record and control in some way that there should be so few in any good schools where useful and practical instruction might be obtained in modern terms and there is no useful authorised book relating as yet published."

In a letter to the editor of '*The Colliery Guardian*,' dated 16th. November, 1867, a mining engineer criticised the colliers of South Wales as, "*Badly educated and not sufficiently careful of their own lives.*" He went on to say that any mining engineer with experience of South Wales "has difficulty in subjecting the workers to discipline."

Mr. Overton, the coroner visited the pit during the rescue operations and after he had viewed the bodies of the victims, he returned to Pontypridd where he set up his court in the waiting room of the station. The meeting was purely for the formal identification of the victims and he did not open the official inquiry until all the bodies had been recovered and the workings brought to some sort of order.

He had written to the Secretary of State who had given him the assistance of Mr. Lionel Brough, Her Majesty's Inspector for the South Wales District, to assist Mr. Wales. Mr. Brough arrived at the pit on Tuesday and in the course of viewing the pit he had a narrow escape. By a misunderstanding with the signalling, he was getting into the cage when it started and he was thrown back into the level but he only suffered shock. By Tuesday, 121 bodies had been recovered.

The inquest was adjourned until Monday week and was reopened at the New Inn, Pontypridd.

At the inquest, William Pickard of Ince, Wigan and Thomas Halliday of Little Lever, near Bolton, made up a deputation from the National Association for Miners. They were representing the widows and orphans of the disaster and they asked the coroner for permission to go and make an inspection of the mine. The coroner had no objection and pointed out to the jury that Mr. Pickard had given evidence to the Commons Committee on Mine safety. He gave them a letter of recommendation but the management of the colliery would not let them go below ground to make an inspection. This decision was criticised in the verdict. Mr. Pickard asked the coroner if he could question Mr. Wales who said, '*Certainly. He will undergo the same ordeal as the rest.*' He was allowed, by Mr. Overton, to question many witnesses at the inquiry and many pertinent points were made clear by his questioning.

He asked Mr. Davies, the proprietor of the colliery, if the reports of the firemen and records of the ventilation were kept in the mine and Mr. Davies said, '*No.*' He established that the colliers fired their own shots but only George Sage was allowed to fire shots at night and that a Government Inspector had not been down the mine in the previous six months. Mr. Wales said that he had visited the pit but had not gone below ground.

In answer to a question from William Pickard he said that gas had ignited from a shot a few weeks before the explosion. John Robbins found it just before he left the pit and he had no business to fire the shot. Only George Sage was allowed to fire shots at night.

The Coroner thought that the management had done everything in the pit for safety, but Mr. Pickard pointed out that the night fireman did not go with the men to the workings. He visited them afterwards and he did not stop the goafs to confine the gas but filled old stalls to prevent the accumulation of gas.

In the Ferndale explosion the air from the bottom of the shaft entered the Rhondda and the Blaenllecha districts and after about 60 yards it split to the Duffryn district.

The experts at the inquiry held a long discussion at the inquest as to the desirability of one or two splits and if the mine was properly ventilated. The discussion took place in groups and was difficult for the press to report at the time.

The proceedings then went on as usual with the workmen giving their evidence to the court. Three horses died in the lower stable and some were killed on the Rhondda incline.

Esau Halliday a collier said part of the horse was found at the bottom of the shaft and the other part in the sump and the other part on the east side and the tram was blown into the sump on the north side. Halliday supposed that the horse was waiting for the tram to come out. He thought that there were two explosions, one in John Davies heading Blaenllecha district and the second in the workings at the top of the Rhondda district and the effect of the first was the cause of the second. Halliday said that he would not let any strangers down the pit except on the orders of the manager but this contradicted the previous evidence. According to his evidence there was strictly no smoking in the pit and at that point the inquest was adjourned. The evidence taken from William Walters the sole overman at the colliery who lived in the village of Ferndale, took the whole of one day of the inquiry. He had been at the pit for three years and his evidence was crucial. He gave an account of his normal working day. When he was on duty and saw most of the colliers down the pit at the surface. One fireman, Thomas James, usually came to him before he went down or he found him in the pit and made a verbal report. Thomas Price was another fireman who used to see every morning and John Harris the third fireman in the pit. All of them reported to him about the state of the pit on a daily basis.

John Richard Thomas was the night fireman and Walters always saw him before he went down in the evening. He met him at the top between 5 and 6 p.m. and when he came up. It was Walters' duty inspect the stables and the hauliers and they had to wait at the pit bottom with Walters until Williams, the manager, came down. The manager came down everyday and he scarcely missed one day a month. Walters thought he had seen Williams with a book that contained all the names of the men in the pit which would have been very helpful in knowing who was in the pit at the time of the explosion but it was not known where the book was now. His reply to some questions by the Coroner caused surprise in the court when he obviously did not know what a barometer or a thermometer were and the Coroner had to explain their use to him. He did not understand an anemometer and no record was kept of the ventilation in the pit. Indeed it emerged that there was no thermometer or barometer at the pit. The manager had an anemometer which was either in the pit or in the manager's office and he was believed to understand the use of one of these instruments.

Walters related how, on previous occasions, he had got gas out of the No.8 heading by '*screening*' which was done by erecting two canvas doors and then opening and closing them. The Coroner commented that this procedure was experimental and rather risky. The court heard that there had been a small explosion about six months previously when Walters' brother was firing a shot and there were many reports of gas before the explosion that shots were fired in the pit.

On another occasion, Mr. Williams, the manager, had decided to run a fresh heading between the coal stalls of the north and south headings. A canvas door and brattice was erected to carry the ventilation into the headings. A short time before the explosion there had been a fall in the No.8 heading and the fireman, David Richards, had prevented them to enter because of gas. Mr. Williams later found no gas but did not discharge Richards as he had done in two other similar cases.

On the day of the explosion Walters was not in the pit he was at home in bed having been taken ill on the previous Tuesday and attended to by the Doctor. The manager and the fireman attended to his duties while he was ill and Walters and the three firemen could read and write but even so the reports were verbal and no written accounts were kept.

The last report he had received from a fireman was on the Monday the day he was taken ill when he met Thomas James, who worked in the Duffryn district. He said everything was going well but there had been some bad falls. Everything was all right according to the reports in the Blaenllecha District but the fireman in this district knew of a little gas.

On Tuesday he was away from the pit and there was a small blower in the roof at the entrance to Morris's stall in No. 4 Rhondda heading. This was found when a shot had been fired. When he heard of the explosion he jumped out of bed and thought he heard a second explosion which was not as loud as the first. He went straight to the pit and ordered the engineman to bring up the trams and the engine, and then his brother worked the other engine in the other shaft to try and get more air down the pit.

There was much confusion and alarm that he could not give a detailed account of what happened at the pit until some of the colliers came up. He believed that there were 360 men and boys at work on the day of the explosion. Walters' son was a signal boy in the pit and was killed in the disaster. His body found in his workplace.

Daniel Richards had worked at Cwm Pary as a fireman and had left the pit ten weeks previously due to a disagreement with Mr. Williams. The canvas between Nos. 6 and 9 dips had been taken away and Richards found gas the next day and put the canvas back but Williams told him to take it down. The next day, before breakfast, Walters asked if he had taken it down and he told him that he had put it back. He was told to take it away and he said he would not. Walters said he could do it and did so. Richards would not do it because he knew it was wrong and Walters reported him to Williams who stopped him working after breakfast. He was ordered to Williams' house at night. He had to stand at the bottom of the pit freezing. Williams asked what had happened and he admitted it and it was suggested that he leave the pit. He had differed on another occasion when he thought walls should have been used and not canvas. All the other stoppings were made of boards and leaked air through them. Brick walls had been used before Williams came to the pit about twelve months previously. He thought that there was not enough air but Williams thought that there was plenty. On the day of the explosion he went down the pit and proceeded down the incline as far as he could. He had no explanation of the explosion but he thought that the ventilation of the mine was defective.

David Griffiths, an elderly collier who lived in Blaenllecha, was the next to give evidence. The night before the explosion he was working in John Davis' heading which was worked for 150 yards with two stalls at the top, two on the east and three on the west side. He had two sons in the heading and he was working on a cross heading on the left hand side. There was gas in the heading and there had been so for a few months. The gas was in an old stall that had a fault running through it and it accumulated at the top of the stall. Griffiths did not see Walters during his time at work at night but he saw John Richard Thomas the night fireman every night but he never told Thomas of the gas in the heading and he did not know if Thomas knew of it or not. He had told the day fireman, Thomas Price, of the gas in an old road 90 to 100 yards long near where he was working and which was an old return air way. There was a canvas door at the heading and he went through and saw the gas in his lamp. He went back to his stall and waited for the fireman and asked him if he had tried for gas in the place and he said he had and he asked the fireman to alter the ventilation to clear it and the fireman replied, *'Don't throw any fault on me David.'*

Mr. Price had asked the manager, Mr. Williams, for an airway to be made as he feared an explosion and Price said the manager laughed at him and asked if he was afraid. Griffiths then said to Price, *'For God's sake warn Bill Chadwick not to fire any shots while*

any of us are in.' Chadwick worked the stall next to Griffiths. Griffiths also said to Price if it should fire we will all have our brains knocked out. Price warned Chadwick to take care but no opening was made. Griffiths worked the night before the explosion because times were bad and he hoped that a hole would be made through to improve the ventilation. There was gas in the stalls from where he was working up to the drift but he did not know about other parts of the pit. He left the pit at 6 a.m. on the morning of the explosion and forty seven people were working in that part of the pit. Five were out at the time of the explosion and all the others were killed or burnt.

Mr. Wales questioned Griffiths and he said he had never been prevented from working in his place by gas but the man in the next stall had. The stalls that he mentioned were old stalls and not worked. The men worked with locked lamps and it was the practice for colliers to fire shots when they liked. He had fired shots with a touchpaper but he did not know if shots were fired on the day of the explosion. He lit his touchpaper from his lamp top.

William Chadwick, a collier of Ferndale, was in the pit on the morning of the explosion and he had worked at the pit for two and a half years. He went to work in the No. 1 heading or John Davis' stall No. 9 in the Blaenllecha district. He did not work on the day of the explosion because he could not get any trams. He normally worked in the stall known by his name for eleven weeks with a younger man named Evans. He said that the left side had fair ventilation but the right side had none. Between his stall and David Griffiths' there were some old workings and gas came through on opening which was the original airway into his stall and the airway was partially filled by falls. He did not complain as he knew the fireman and overmen knew of it. Both had said that there was blower there and they told him to be cautious. He made an airway through the gob and the gas diminished and it was made under the direction of Price the fireman. In answer to Mr. James, Chadwick said he knew nothing about other parts of the mine. Walters came to his place once or twice a month. The main air current came from John Davis' level and was split by a hole in his place and Griffiths' place. He knew that he would not get work if he did not do as he was told and this was the general condition in the pit. It was very cold in the pit.

Every man had two lamps one with glass and the other with wire. two men would have three lamps and he found a lamp without a gauze in his stall after the explosion. The Clanny lamp that was found was his own which he had lent to a boy and the Davy was No. 236. Daniel Davies and George Sage corroborated the evidence that had already been given.

John Richard Thomas was then sworn. The witness had worked in the mines for twenty years. He was the night overman, the only one in the pit. He could not read or write in English but he could do a little of both in Welsh. He was in charge of the night labourers. It was not his duty to see that the places were clear of gas but he had to see that the workplaces were safe and he had the power to stop the men working if he thought there was any danger because of gas or the roof was bad. He went the pit down after the men and they waited at the safety door for him. He then called their names and they went to work. He had the men's names in a book.

Thomas' evidence gave a good account of where some of the men were working the night before the explosion. The men where G. Sage, George Thomas, D. Griffiths, Frederick Gay, Nicholas Davies, John Bevin, Daniel Davies, a labourer and William Llewellyn, a haulier. Two men were working in Charles Owen's stall but Owen was working with John Davies in the level heading doing day work. He was with the dead. F. Gay and John Bevin were in Chadwick's stall. Nicholas Davies was unloading rubbish in the next stall but one. William Llewellyn was loading rubbish from George Sages stall with W. Chadwick. Sage and G. Thomas were ripping the top.

The witness saw no gas or he would have stopped the men working. He knew that there was a little gas coming from Chadwick's stall from a blower, he thought. Daniel Griffiths had never said anything about gas. He went to George Sage's stall one night

between Chadwick's and Griffiths' for a sledge hammer. Sage was in the habit of hiding his tools to prevent anyone carrying them away. This was the only time he had been in the stall and he saw no gas. After the explosion he had assisted in removing the bodies from John Davis' level and Mr. Jones of Blaenygwar was active in helping them.

Nathaniel Roach was working in the heading and was killed. Two men, Isaac Thomas and Richard Meredith were on loading rubbish in No.10. The men working on the incline with naked lights and John Williams supervised them. The men would go beyond the lamp station with naked lights.

James Rees, a collier took a contract from the 1st. January to get coal with David Jones until 1st. July and worked under David Jones afterwards. As contractors they could employ anyone that they wished but subject to the General Rules of the colliery. On the day of the explosion he was working by David Jones who was killed with twenty one others in the heading who were suffocated 113 were found in a group and not brought out until Wednesday because of the gas. The air to the heading came from the Rhondda incline and returned by a cross bridge made of planks. He saw no danger when he was working there and this cross bridge was blown to pieces in the explosion and the ventilation stopped causing the deaths of the men.

Thomas Davis, a collier, was working up until one hour before the explosion when he left the pit. He left because a full tub had stopped trams passing. He was in the Rhondda and had plenty of air. He confirmed that there had been complaints about the gas which had been caused by a door being left open.

Thomas Samuel of Blaenllecha worked as a labourer in the pit and was in the pit the night before the explosion. He was the flue man in place of Henry John who was ill. There was great deal of foul air coming to the furnace before the explosion. He had previously been a collier and had seen gas in Henry William's stall. He had heard Thomas Davies, a night labourer, said that he had met with gas over the last six months. Samuel said he was sent to the No.9 heading and fireman J.R. Thomas went with them and told them to gob some rubbish there. The fireman tested for gas and found some and said he would report it to the night fireman and Thomas said if they did so he would discharge them. The fireman said that the brattice was not carried forward enough to the face and an additional brattice was put up and the gas cleared.

Isaac Thomas, formally a collier but now working as a labourer having lost his leg, said that there was gas in the mine. There was a regular discharge and it had been walled into the stalls. David Williams, a lad, saw gas in his lamp every morning but he was at home on the day the explosion.

Mr. Richard Billington was the agent for the Rhondda Ironworks examined the colliery after the explosion. He thought the cause was in the Blaenllecha district and was due to a horse blocking the doorways which interrupted the ventilation.

Mr. Thomas Errington Wales, Her Majesty's Inspector of Mines for the district was the colliery on the 12th. November and went down the pit. They found two lamps without gauzes in the Blaenllecha District but none in the Rhondda District and they thought that the gas was ignited at an open light.

Mr. Brough expressed doubts about the Davy and the Clanny lamp since the flame was able to pass through the gauze even in low draughts of air. He had taken part in some experiments on the subject. It was possible that the air doors were kept open for some time by two journeys of tubs getting off the rails and all the ventilation was cut off and the Inspector thought that there were two distinct explosions, one on the Glo-bach district and one in the Rhondda. The timbers in the Rhondda were blown upwards indicating the direction of the blast.

Mr. Wales commented in his report that of the 350,000 miners in the country, 1000 were killed every year in explosions. In the Glo-bach the colliers fired their own shots which was against General Rule 37. The Inspector believed that the first explosion was caused by gas passing from a old stall and igniting in Chadwick's stall on an naked light.

Chadwick's lamp was found with the top off. This explosion ignited the gas in the Rhondda.

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

"Having attentively listened to and carefully examined the evidence brought before us, we have come to the conclusion that the deceased met their deaths by an explosion of gas in the Ferndale colliery on the 8th. November last. We believe the explosion took place first in consequence of a great accumulation of gas in certain workings of the colliery and this accumulation we attribute to the neglect of Mr. Williams the manager and his subordinate officers 2nd, by this gas being fired by one or more of the colliers carelessly taking off the top of his lamp and working with naked lights. We much regret that the proprietors of the colliery did not permit a deputation from the Miners National Association to go down the pit especially as the coroner gave them a letter of recommendation with a view to their being allowed down. We are of the opinion that the inspection of collieries as hitherto practised has entirely failed, as a preventative to accidents of this kind, and we recommend that all collieries should be henceforth inspected by a competent person at least once a month. We further recommend that all collieries should be provided with scientific instruments for measuring the quantity and quality of the air passing through the colliery, and that a daily record be kept of the same also that a register of the daily reports of the fireman be kept in the office of each colliery and that a register of names of every person who descends into the pit be also kept.

We further recommend that all collieries should be provided with scientific instruments for measuring the quantity of air passing through the mine and a daily record be kept of the same.

Also that a register of the daily report of the fireman be kept in the office of each colliery and that the register of names of the every person who descends the pit be kept."

BWLLFA. Aberdare, Glamorganshire. 27th. December, 1867.

The colliery was situated about two miles from Aberdare and was owned by Messrs Lockett and Coles. Mr. Herbert Kirkhouse is the manager and the colliery employed over 100 men and boys. There were three or four shafts at the colliery and at the time of the accident coal was being worked from the Four Feet Vein and the Two Feet Mines. The upcast had been sunk a short time before the accident and a drift to lower coals, was being driven. There was only one shaft below the Four Feet and wooden boxes had been placed in the shaft to carry the air from the Four Feet to ventilate the drift in which six men were working at the time of the disaster.

A heading was being driven from the bottom of one of the unused shafts across the measures to the Six Feet coal beneath. This heading had been in construction for two years, being driven through hard rock. It was ventilated by a wooden tube through which the air was conducted to the face and then went through the open roadway and then to the shaft.

On the morning of the disaster there were five men at work and at 6 a.m. Five others went down to relieve them but as soon as the incoming men got down they saw smoke and an unsuccessful effort was made to signal the banksman. Going further into the heading the men fell insensible. About that time the man at the top became aware that something was wrong when he saw smoke coming from the shaft and on looking down he saw that the air tube was on fire. How it had become ignited nobody knew but it was thought that it was caused by the friction of the rope. The smoke from the burning wood was carried to the face.

A wire rope was being carried down the shaft in a wooden box which was set on fire by sparks from the furnace and this cut off the ventilation to the men when other boxes

were ignited. The smoke passed along the drift at a time when the shift was changing so there were eleven men in the drift.

The brave a praiseworthy conduct of several volunteers went into the heading and managed to rescue seven who were brought out in a weak state. One later died and four were found to be dead. The manger hurried to the pit when he heard of the accident and all the men were brought out unconscious after a great effort. Some were able to walk home but others died.

Those who died were colliers-

Richard Lloyd aged 44 years, married with four children,
Thomas Wood aged 28 years, married with two children,
Thomas Howell aged 28 years,
Benjamin Thomas aged 55 years, widower and
John Daniel aged 50 years, married with two children.

There was no Relief Fund available and the colliery manager arranged for a payment to be made to the bereaved families for the cost of a decent coffin and funeral.

CLATTERSHALL. Brierley Hill, Staffordshire. 11th. March, 1868.

The colliery was the property of E. Bowen and five men and boys were suffocated by carbonic acid gas.

Those who died were:-

J. Chivers
and 4 others required

CANNOCK CHASE Cannock, Staffordshire. 15th. May, 1868.

The colliery was owned by the Lichfield Coal Company and eight men lost their lives when the winding rope snapped. On the morning of the accident eight men and boys, which was the usual number permitted by the special rules of the colliery, were descending the shaft when the flat wire rope suddenly broke and they went to the bottom of the shaft. Five were killed outright and a youth of 16 years died later but two others recovered from the very serious injuries that they sustained.

John Thompson, the banksman, of the No.4 Pit, felt the weight go off the engine as he was lowering some men when the rope was about seven yards down he pit. the chain had been in use at the pit for about 14 months. there was no indicator on the engine.

Those who died were-

John Budlow aged 60 years, married,
John Fox aged 20 years,
Thomas Picken aged 21 years,
James Dennis aged 13 years,
James Pearce aged 15 years,
William Dennis aged 18 years
Edward Green aged 16 years and
Thomas Richards aged 40 years, butty, married with five children.

Mr. Baker, the Inspector commented in his Report-

“On examining the rope I found that at the point of fracture it had been covered for about eighteen inches with hemp, which had become so hard and solid as to form a bolster on each side of the flat rope, about three quarters of an inch in thickness for two thirds of it’s length, tapering off towards the extremities. It appeared that the

object of this very unusual application was that the wrapping of hemp should act as a 'token' to show the engineman when the skip was opposite a 'headway' or inset where it had to stop. There was no indicator, which would have rendered any such rude and dangerous provision necessary. I found only 25 or 26 wires, or about one seventh of the number comprising the rope, were whole when the accident occurred. The hard and solid wrapping of hemp no doubt caused the wires to break, as in passing over the periphery of a five foot pulley, and then under the drum which had a similar diameter, it bent the rope to and fro at different angles, gradually breaking the wires until those remaining which had themselves become weaken, suddenly snapped. Not only was this 'token' the cause of the rope breaking, but it had the further effect of preventing the discovery of it's gradual destruction. The special rules require the periodical examination of the ropes, but this was impossible unless the hemp, which had been on three or four months, had first been removed."

Mr. M'Ghie, the manager of the colliery, acknowledged at the inquest that the use of the rope would prevent examination and that an examination would have seen the danger. The colliery engineer, Hargreaves Walters was aware that the engineman had put the rope on the wire but had not thought there was any harm in doing so.

The jury brought in a verdict of 'Accidental Death' but censured the engineman, M'Ghie and Walters for not having removed the rope. Subsequently M'Ghie was summoned for not providing an indicator. He pleaded guilty and was fined by the magistrates 10/- and costs. Mr. Baker commented-

"A very light penalty considering that the provision of an indicator would, according to the statement of the engineman, have rendered unnecessary the use of the token from which this dreadful accident clearly resulted. The absence of an indicator and of the other apparatus required by law is the more to be wondered at as generally the colliery ranks amongst the best appointed in the district."

WYNNSTAY Ruabon, Flintshire. 30th. September, 1868.

The colliery was the property of the New British Iron Company and there were ten killed and thirteen injured in the explosion. On the south side of the pit in the Main Coal Seam, three up brows had been driven to the rise within a short distance of the pit eye. The upbrows were ventilated by a split of air from the main current going along the horse road below and on to the top by doors and stoppings placed in the endways. In the second level or endway from the bottom, there had been a door for some time but it was removed a few days before the explosion.

A bricksetter was employed to build a brick stopping in it's place and he was working at this task on the day of the accident. Immediately after the stopping was completed, the explosion took place. All the dead were found near the pit eye.

Those who died were-

Thomas Ward, suffocated,

Henry Davies,

Moses Andrew,

David Roberts,

John Lloyd,

James Davies,

Hugh Edwards,

Edward Edwards,

Meshech Jones and

John Brown.

Mr. Peter Higson, the Inspector thought that the places had been fouled with gas when there was no door since the current would take the shortest path to the upcast shaft.

When the ventilation was restored, the gas would be carried round and was ignited by a spark. Mr. Higson found that there were sparks from the furnace which was fed by fresh air and two daywagmen who were working nearby had locked safety lamps.

The inquiry into the accident was long and searching and great efforts were made as to how the gas was ignited but they failed completely. The Inspector thought it was possible that some of the victims might have gone into the return airway for a smoke and ignited the gas with a naked light but he was also suspicious of the sparks from the furnace and pointed out to the manager that this could be improved. Mr. Higson concluded his report-

“The fireman told the jury that he had examined and found the upbrows safe on the morning of the casualty, but that statement could hardly be relied on inasmuch as it was not supported by the evidence of several trustworthy witnesses my own impression being that those places had not been visited for sometime by any one. As there was no trace of burning in or near the upcast pit, the gas, I think, could not have been ignited by anything that came from the furnace.”

HINDLEY GREEN. Wigan, Lancashire. 25th November, 1868.

The colliery was the property of Messrs. John Sowcroft and Company Limited, and the explosion occurred in the Arley Mine which was notorious as being fiery. The disaster claimed the lives of sixty two persons. Mr. Higson, the Inspector, arrived at the colliery on the day of the disaster

THE VICTIMS.

These are the victims names that are taken from the plan in MIR. LOOK AT CG , WE WO.THERE SHOULD BE [62] 35 HERE.

W. Holcroft.
John Berry.
James Jackson.
Robert Haslam.
Thomas Greenalgh.
Joseph Greenalgh.
Thomas Kaye.
James Houghton.
Thomas Ashurst.
W. Haslam.
James Latham.
Abraham Grundy.
Abel Haslam.
James Nicholson.
Samuel Hayes.
James Pilkington.
John Kirkpatrick.
James Ramsdale.
William Markland.
WilliamJohnson.
Thomas Starkie.
Booth, a metalman.
Halliwell, a metalman.
Crook, a metalman.
Ingham, a metalman.

Wood.
Gregory.
Sargent.
John Kendrick.
William Tyldsley.
John Holcroft.
William Isherwood.
R. Beasley.
Thomas Holcroft.
William Dearden.

The inquest lasted six days and the verdict if the jury failed to fix responsibility for the disaster. Mr. Higson commented that *'it was a sort of open verdict, aiming as it were at something beyond, which it omitted to express'*. It condemned blasting in coal with gunpowder and the practice was discontinued at the colliery.

Mr. Higson commented:-

"The explosion happened within a few hundred yards of the downcast pit and on the deep side of the horse road level, where the heat and flame left its marks on the roof and pillars of the unworked coal. On the rise, and in undoubtedly the worst ventilated district of the mine, men who were working there came out uninjured, while on the other side of the pit the explosion was scarcely heard.

The scene and origin of this disaster were to be easily traced to two slants which were being driven down hill by one of the deceased, Thomas Holcroft, collier of no great ability, who seems to have little or no experience in the use of gunpowder. He had worked in both these slants, and on the day of the explosion, he was making a cut through from one to the other and was working at the time in the lower one, the other having been suspended for some time. Both were giving off gas rather freely from the floor, sides and face, the lower one at the face only and the ventilation of both at the time was conducted by brattice.

In the lower bottom slant I found a shot hole which had been charged and the charge had been blown out but the coal had not been disturbed. In the upper slant the sides and roof had been marked by fire which could be traced more or less distinctly for a very considerable distance in the direction of the inbye current of air, until at the place in which William Isherwood worked, it appeared to have been more intense and to have exploded there. At this point an empty powder can was found, in which the gunpowder had, no doubt, exploded.

Some of witnesses attributed explosion to that cause but subsequent inquiries brought out the facts that Isherwood could not have had so much as one pound weight of powder in the can, and the most the can could have held was two pounds. As this seemed to ridiculous to be maintained, it died away in an echo. There can be little or no doubt that some gunpowder was ignited but for the primary cause an accumulation of gas only could be assigned.

After many a careful examination of workings, I was obliged to return to place first identified as that in which the gas had been accumulated and where it was ignited, namely in Thomas Holcroft's place. That place was giving off gas freely and having been stopped for some time, gas would have accumulated if the brattice happened to be down, and from traces of fire there, it must have been so. When Thomas Holcroft fired shot in place below, it would, in consequence of not blowing down coal, produce great flame, which would so expand as to reach and ignite the gas in place above and that, being once ignited, would go on burning so long as the air was inflammable and on meeting a supply of fresh air a little beyond Isherwood's place, it would as a natural consequence,

exploded. The flame travelling from burning gas, would in all probability, ignite the powder and cause the death of some unfortunate men from actual burning, but the majority died from suffocation in afterdamp which was much stronger than any reasonable quantity of gunpowder could have produced, while the flame from latter would have extended a tenth part of distance, as it had evidently travelled in this instance.

The workings under consideration could not have been properly inspected by morning fireman, or, if they had, the gas must have been found by him. It could not have accumulated in time that had elapsed between the hour of inspection and that of explosion. It was on the day following the election for South West Lancashire, on which works were suspended and great deal of drinking going on in the neighbourhood, in which the foreman, John Highton, generally a sober man, joined. He returned home at eleven at night, quarrelled with his wife, and what he did after that hour is still only imperfectly known but at proper hour the following morning he was seen by underlooker and Dan then reported to him that all the places were safe.

A fair and reasonable quantity of air appeared to have been going through workings generally, but this particular district could not have had any surplus quantity. When workings were suspended a less quantity was capable of diluting gas but as they were finally stopped, I have no means of testing it under other circumstances.

All care that could be taken by manager, in the sense of safety lamps, employment of the underground officers, and the provision of materials, had been judiciously exercised, but mode of opening out the workings was too bold a character to admit of my discovering that ordinary skill had been sagaciously applied in that department of the engineering works. Still it was only a copy of proceedings of some neighbouring mines, which has recently come into existence, but which cannot be too soon abandoned. These workings, which were only being opened out, have a range of strait work extending over 22 miles. many off deceased persons were found on the wagon road, and in openings on south side below. Only a few were burned, the rest were suffocated in the afterdamp.

The colliery had a good reputation amongst workpeople for being well ventilated and for the honest liberality of the firm, so that the greatest sympathy was shown to them.

This is another painful instance of uncertainty of depending too much on the ventilating by brattice cloth, instead of driving double roads, particularly in opening out mines and of omitting to have places that have been stopped or suspended carefully examined each day.

Much was written and talked about the barometer and manner in which atmospheric changes affect ventilation of mines and promote the escape of gas. In admitting the accuracy of such statements, I may here observe how ridiculous it seems to attribute the origin of explosions in mines to such causes, when there is sufficient evidence exhibited plainly to prove the most gross neglect. The barometer was rising, and had been for two days, when this casualty happened."

NORLEY. Wigan, Lancashire. 21st. December, 1868.

The explosion occurred in the Orrell Four Feet Seam on the Monday after pay day when the general operations of the mine were suspended. Elijah Cheetham, the fireman in charge of the workings in question, was ordered to level the floor of the mine near Dauber's place and was told by the underlooker that the use of gunpowder would not be necessary as the floor was soft.

As Cheetham went to work he had to pass some men who were working near the pit eye from whom he obtained some gunpowder. In a short time an explosion occurred which claimed eight lives and did considerable damage to the workings.

The men who died were-

T. Tinsley,

T. Sharrock,

William Taylor, left a widow and four children,

William Fairhurst.,

Robert Fairhurst, dataller,

Elijah Cheetham, fireman left a widow and five children,

Thomas Sharrock aged 35 years left a widow and four children,

Thomas Rutter, pony tender aged 34 years,

William Counce left a widow, Dauberand

Elijah Cunliffe, dataller, unmarried.

It was some time before Mr. Higson was able to examine the workings but he came to the conclusion that the explosion had been caused by Cheetham firing a shot. Mr. Higson went on to say-

“It was Cheetham’s duty to have made careful inspection of the workings as soon as he got there and more particularly on this occasion as the furnace had been out, undergoing repairs from Saturday afternoon to Sunday afternoon. If such an inspection had been made, he must have found the gas that had accumulated. Careful supervision had been neglected as at Hindley Green and Wynnstay collieries.”

QUEEN PIT. Haydock, Lancashire, 30th. December, 1868.

The village of Haydock, which is seven miles from Wigan and three from St. Helens was described at the time as being clean and neat with well trimmed hedges. It was a long straggling village with rows of terraced miner’s cottages along the main road that ran through the village. Each cottage had a well tended garden behind the low wall that fronted the road. The well cultivated farmland ran from behind the houses almost to the pit banks and to an observer, the only evidence of how the village earned it’s bread were the any pit head gears that overlooked the cottages.

Queen Pit was one of seven collieries in the village owned by Richard Evans & Company and was situated a few yards from the colliery offices at the top of the village. The pits were known collectively as the Haydock Collieries and employed about fifteen hundred men in the 1860’ ties.

The General Manager of the Haydock Collieries was Mr. John Chadwick, a well respected man of great mining experience. The underlooker of the Queen Pit was Mr. Isaac Billinge who was in charge of the Wigan Nine Foot Mine and he was directly responsible to Mr. Chadwick. The Evan’s Company had a good reputation and it was generally agreed that they spared no expense for the safety of their workforce in the collieries.

□ There were two seams worked at the colliery but development work was in an early stage and coal had been extracted for only about eighteen months to two years. The two seams were the Ravenhead Main Delf Six Foot Mine and the Wigan Nine Foot Mine. The latter is where the explosion took place and it was two hundred and sixty yards from the surface.

The coal in the mine where the explosion occurred was hard and had to be blasted down by gunpowder for the colliers to make a living. The colliers were responsible for making their own charges and for setting them. They bought their own powder and made up the charges in their own homes. The charges were laid by drilling a hole in the coal

and ramming in the charge. This was common practice in the district and had led to many serious accidents in the collier's homes often with fatal results. By the Law of the time, the fireman should fire the shot but in practice, many of the colliers fired their own but only after the fireman had inspected the workplace. This was the general practice throughout the coalfield and the practice had led to many accidents that were recorded in the Reports of the Inspectors of Mines. The burning fuse or the flash of the explosion igniting the gas that may be present. This resulted in either devastating explosions or more usually, in the gas igniting and inflicting severe burns on the men that were in the vicinity.

As was customary at the time the mine was ventilated by a furnace being continually burning at the bottom of the upcast shaft which was known as Legh Pit and was about four hundred yards from the Queen Pit which was the downcast shaft and used to wind men, materials and coal. The air was directed through the mine by stoppings and brattice cloths and by air-doors that could be opened to allow the passage of men and materials but were generally kept closed.

Work began at the colliery at six in the morning and although there were forty employees, on that fateful morning, only twenty three men and boys descended into the Wigan Nine Foot workings. As the work got under way, Mr. Billinge made his inspection of the mine as was required by the Special Rules of the Colliery. He found nothing he regarded as dangerous. The ventilation was in good order and the men were getting on with their difficult, dangerous work in their usual professional manner.

There was an incident below ground that morning that saved the life of a man named Flanagan. He was a collier and his son, John was his drawer. Early in the shift, Joseph Greenall, the fireman, caught Flanagan snr. smoking which was against the Rules of the Colliery and he immediately ordered him to the surface and told him to go home. Smoking in the pit was not uncommon at the time and there are many recorded cases in the Magistrates Courts of the time. Both John Flanagan and Joseph Greenall were killed in the subsequent explosion.

It was shortly before noon that other men down the pit noticed that the ventilation had altered and when they went to investigate they found that an explosion had taken place. They left the mine as quickly as possible. They would be only too well aware of the dangers of afterdamp, the poisonous gases that are left in the mine after an explosion and lethal in the confined spaces of the workings. When the explosion occurred there was little noise and the three hundred men who were in the Ravenhead Mine knew little of the event. All the damage was confined to about five hundred yards of the workings in the Wigan Nine Foot Mine.

John Chadwick and Isaac Billinge were both above ground when the explosion occurred and were told of the event by those that had escaped from the pit. Immediately they went to the pit head and started to organise a rescue party. Fortunately the headgear and the cage were undamaged and there was no hindrance to the rescuers to go below ground.

As soon as they reached the pit bottom they found three survivors who were badly injured and sent them to the surface where, by this time, Dr. Twyford had arrived to attend to them. Peter Marsh aged thirteen years was badly burnt and died at six a.m. on Friday. John Flanagan aged eleven years was suffering from the effects of afterdamp and died the same day at home and Robert Fletcher Room aged nineteen years was badly burnt and died later at home.

It was too dangerous for the rescue party to enter the workings until they had restored the ventilation. This was difficult and dangerous work but they made good progress and entered the workings about an hour and a half later. They found another survivor, Hugh Arnold. His place of work was not ventilated by the flow of air from the main workings. After the explosion, instead of trying to make his way out of the mine, he sat in his workplace moaning and probably suffering from shock. It was in this state that the

rescuers found him. He was taken to the surface and recovered to give evidence at the inquest.

The rescue parties worked on, replacing the stoppings, repairing the broken air-doors and erecting new bratticing that had been blown down by the force of the explosion. The violence of the explosion could clearly be seen, tubs and wagons had been smashed and rails torn up. The centre of the blast was thought to be about two hundred and fifty yards from the pit eye.

As the bodies were found they were given a number and moved to a position near the pit eye from where it would be an easy matter to raise them to the surface by the cage. The teams worked on throughout the night in relays and by seven in the evening seventeen bodies had been recovered. by Thursday morning all the workings had been searched and twenty three bodies recovered. During the rescue operations Mr. Billinge became a victim of the afterdamp while he was leading a party. He was taken home and recovered to give evidence at the inquest.

As was usual in the situation, the bodies were brought to the surface at night in an attempt to keep them from the eyes of friends, relations and the curious who had gathered at the pit bank. The works carpenters had constructed a wooden shed to house the dead. It had taken one and a half hours to construct and contained raised platforms on which the dead were laid out after they had been washed and their clothes bundled at the foot of the platform.

The friends and relatives were admitted on Friday to make their identification of the dead and Mr. C. E. Driffield, the County Coroner, had been contacted and set up court in the Waggon and Horses Hotel in Clipsley Lane, where the evidence of identification was heard. When the Coroner was satisfied on the evidence of identification the bodies were released for burial.

Mr. Richard Evans ordered that the coffins should be made by the Company's carpenters in the workshops under the direction of the foreman, Mr. John Smith, and that only the finest quality oak should be used so that there should be no complaint from the families.

There had been an explosion at the Hindley Green colliery, a few miles outside Wigan two or three weeks before and two men who had worked there, but whose names are not recorded, had refused to go down the pit again and had sought employment at Queen Pit. Both were killed in the Wigan Nine Foot mine.

Pewfall Pit, another of the Haydock Collieries, had been flooded due to the excavations that were taking place for the Lancashire Union Railway which was under construction and the whole of the workforce of the colliery, some two hundred men, were thrown out of work. Three of the men, John, Joseph and John jur. Marsh, had taken employment at Queen Pit and for some of them this was their first day at their new work.

Joseph Mercer was working with several other men in Yate's Level. When the explosion occurred all the men left the district and got out of the pit but he stayed behind thinking that the noise of the explosion was that of a shot being fired. He died from the effects of afterdamp. News of his death was brought to Mrs. Mercer at their home in Clipsley Lane. She went upstairs, very upset at the news. A second messenger came to the house to say that her husband was not dead after all. When she was told this she jumped for joy and unfortunately fell down the stairs and broke her arm. It is not recorded what happened to Mrs. Mercer when she finally learned that her husband was numbered with the dead.

Those victims that had died from the effects of the afterdamp were said to have serene expressions on their faces and were easily identified but identification was difficult on the others who were badly burnt and so many of the victims had taken the full force of the explosion that they were badly mutilated. One poor widow was in doubt about the identity of her husband for a long time but she finally made a positive identification from a slight mark on the body. A large crowd had gathered outside the shed and they heard the heart rending sobs from the relatives as they recognised their lover ones.

As soon as the news of the explosion reached the offices of Richard Evans, Her Majesty's Inspector of Mines for the area, Mr. Peter Higson, was contacted by telegram. Mr. Higson arrived at the colliery about nine thirty p.m. with his son who was the Assistant Inspector. Mr. William Pickard, the miners agent, also arrived at the colliery. An investigating party of these men, Mr. Chadwick, Mr. Richard Evans. Mr. Clark, who was the mining engineer to Sir Robert Gerard who owned mines in Ashton-in-Makerfield, and Mr. Glover, who was the mining engineer to Mr. W. J. Legh M.P. who was the lessor of the Queen Pit, descended the pit in an effort to find out what had caused the explosion.

There were theories that part of the brattice work had been disturbed by a fall of roof and the resulting interruption of the ventilation had caused a build up of gas. Several shots were found to have been placed in position but there was no evidence that these shots had been fired.

The day before the explosion, Mr. Chadwick had made a full inspection of the workings and he had found them in excellent order. A correspondent to the Wigan Observer, whose name is unrecorded, expressed great surprise at the accident since he had visited the mine on two occasions and reported to the paper, '*that the ventilation was so good it quite chilled me through.*'

The firemen had completed their inspections on the Wednesday morning and had reported nothing out of the ordinary in the mine. Both firemen were killed in the explosion. The head fireman, Mr. Greenall, was found some distance from his lamp and it was thought that he had been struck down while racing away from the flames that would have swept through the workings as he tried to make his escape by running for his life.

Mr. P. Higson commented on the devastating effect of the explosion, not in the number killed, but in the fact that it killed twenty four out of the twenty six men and boys that were working in the district. The seventeen men that were killed left seventeen widows and fifty four children fatherless.

Those who died were-

Edward Blake, aged 15 years, drawer

William Bunney, aged 26 years, a married dataller.

John Cartwright, aged 40 years, collier who left a wife and five children.

William Dearden, aged 38 years, a married collier with no children.

John Dean, aged 27 years, collier, who was brought out of the pit alive but died later.

George Gallimore, aged 26 years, married collier who left four children.

Joseph Greenall, aged 34 years, fireman. who left a wife.

Joseph Hindley, aged 39 years, collier who left a wife and six children.

Henry Hindley, aged 12 years. Joseph was his father and he had taken him with him to watch him work.

Daniel Knowles, aged 27 years, drawer.

Daniel Leyland, aged 27 years, collier, who left a wife and four children.

Peter Marsh, aged 13 years. He was brought out of the pit alive but very badly burnt and died later.

John Marsh, aged 37 years, collier, who left a widow and four children.

John Marsh, aged 15 years, drawer.

John Mercer, aged 48 years, dataller, who left a wife and four children.

John Merricks, aged 30 years, collier. He left a wife and four children.

Henry Owen, aged 30 years, collier. He left a wife and four children.

William Pover, aged 33 years, a collier who left a wife and four children.

Robert Fletcher Room, aged 19 years. He was brought to the surface alive but badly injured and died later.

Peter Simm, aged 15 years. A pony driver.

Thomas Stock, aged 26 years, drawer.

John Wilcock, aged 26 years, collier who left a wife.

William Wardle, aged 48 years. A married man who left a wife and four children.

Samuel Yearsley, aged 26 years, dataller, who left a wife and three children.

Mr. C. E. Driffield, the County Coroner, arrived in Haydock on Saturday and set up his Court in the Waggon and Horses Hotel in Clipsley Lane. A jury was sworn in and the evidence of identification of the victims was heard. When the Court was satisfied the bodies were released for burial. Most of the funerals took place on the Saturday and the Sunday.

The inquiry into the cause of the explosion that had caused the deaths of the men and boys was opened the following Friday, 8th. January by Mr. Driffield at the Rams Head Hotel, Penny Lane, Haydock. There were several mining experts present. Mr. Peter Higson, Her Majesties Inspector of Mines. Mr. C. E. Clark, mining engineer to Sir Robert Gerard of Ashton-in-Makerfield, Mr. Chadwick, the manager of the Haydock Collieries and Mr. William Pickard, the Miners Agent. Mr Maskell-Peace, solicitor of Wigan, represented Richard Evans & Co.

Proceedings began by examining the evidence of identification of the two victims that had been brought out of the pit alive but had since died from their injuries. Margaret Rogerson, whose husband was a joiner in the village, had assisted in the nursing of Robert Fletcher Room who had lodged with Hugh Arnold and had worked as Arnold's drawer. Room had died from his injuries on January 5th. and Margaret made the official identification to the Court. Room was also known as Robert Fletcher and he is referred to as such in some of the papers of the time. Since he lodged with a family it is likely that he had come to find work from out of the village and, as two Christian names were unusual at the time it is very probable that he was known as 'Robert Fletcher'.

Thomas Marsh, brother to Peter aged eighteen years died on January 1st. Dr. Twyford of St. Helens had attended him but there was little that he could do to save his life.

The Court then got down to the business of determining the cause of the explosion and the first witness to give evidence was Mr. Isaac Billinge, the underlooker of the Wigan Nine Foot Mine and from his first-hand evidence of the explosion we get a clear picture of the conditions that prevailed underground both in the explosion and immediately afterwards.

On the morning of the explosion, he had finished his rounds of inspection and was at home when the browman came to tell him of the disaster at about 12.10 p.m. He went straight to the pit and descended. On reaching the bottom he went to the west side of the workings and very shortly found a pony and two men dead. He heard some moans and went back to get assistance. John Baines and another man came back with him and found Hugh Arnold alive and he was taken out of the mine. Hugh Arnold's account of what happened to him was given at the inquest when he was called as a witness.

Mr. Billinge then went to investigate the west side of the workings in the Ravenhead Mine and found nothing. He returned and helped the men to restore the ventilation in the Wigan Mine and was himself overcome by the afterdamp. He had to be taken from the pit but returned the next morning fully recovered. By then all the bodies had been found and removed with the exception of Thomas Stock. It took a further hour to recover Stock's body.

Mr. Billinge did not know what had caused the explosion but he thought that the combination of gas and gunpowder could have been responsible. A can that had contained powder was found with both the ends blown off in Joseph Marsh's place. The ventilating air went from Joseph Marsh's working place to John Marsh's place where two shots were found. One of these had blown out and the other was partly burnt. This could have been responsible for igniting the gas.

Joseph Greenall, the principle fireman, was found a short distance from these working places and was, in all probability, walking away after making his inspection before the shots were fired. Mr. Billinge stated that Greenall was a very experienced man.

There was a possibility that the gas had been ignited by a faulty lamp and the evidence given by Isaac Billinge gives a very clear account of the system that was used at the

colliery to issue lamps. They were given to the men at the pit head and were locked by the banksman before they went into the pit. It was a very serious offence to unlock a lamp in the mine and only the underlooker and the fireman had lamp keys. It was stated that Greenall's lamp was found unlocked but it was the usual practice for the fireman.

Mr Billinge was then questioned by Mr. Higson, the Government Inspector, about the method of ventilation that was used in the mine. Gas was known to be present in the mine and although the dangers were recognised, it was not considered a major problem provided that the ventilation was good enough to carry the gas away. If the brattice was damaged for any length of time there could be a build up of gas but, as far as was known, all was well in the mine and the fireman had not reported anything dangerous, like damage to the brattice to Mr. Billinge.

Mr. Christopher Fisher Clark, mining engineer to Sir Robert Gerard of Ashton-in-Makerfield was then called as an expert witness. He had been with the rescue party that had explored the workings after the explosion. His account corroborated what Mr. Billinge had said and he thought that the gas had built up in the workings due to some damaged bratticing. He said that, in his opinion, the mine was safe enough to be worked by candles. In a modern context this may seem very dangerous today, but at the time it was still the practice to use candles or 'open flames' in Lancashire pits and many other mining areas in the country.

Mr. Clark made the remark to underline his high opinion of the system and the quality of the ventilation in the mine. He was of the opinion that the gas had been ignited when a shot was fired in John Marsh's place and the lesson to be learned for the future was that only the fireman should fire the shots. He concluded his evidence by saying that there was no mismanagement or oversight on the part of either the manager or the underlooker of the mine.

Another expert witness was called, Mr. Samuel Cook, one of the underlookers at Old Boston, another of the Haydock Collieries, who had also taken part in the rescue operations. He gave a graphic account of the conditions and scenes underground in the aftermath of the explosion. He went down the shaft and met some people carrying Hugh Arnold out of the mine. He then went to Mr. Chadwick and they both went down the west side of the workings where they found the body of Peter Simm and a dead pony and discovered the bodies of William Dearden and John Cartwright. He then joined the workers repairing the ventilation and went into the workings on the east side where he found the body of William Pover. He stayed in the mine until eight on Thursday morning and returned at eleven the same day until he came to the surface at four in the afternoon. He told the Court that the men he had found were all burnt and that the greatest signs of burning were in John Marsh's place. The witness could give no explanation as to the cause of the explosion and stated that there was little gas to be found while the rescue operations were going on. The inquest was adjourned until Thursday at ten o'clock and the jury bound over to appear at this time.

The first witness of the second day was Hugh Arnold, the man that the rescuers had found alive and had taken out of the mine. He stated that he was at work on the morning of the explosion when he heard a very loud noise and a strong wind blowing down the tunnel. Realising what had happened and that the situation was dangerous, he left his place very quickly without even picking up his clothes. He had not gone very far when he was overcome by the afterdamp and he remembered nothing of the events of his rescue. He thought that, when he became unconscious, he must have fallen on his lamp since he had a burn on his hip.

He spoke very highly of the fireman, James Greenall, and he told the court that he knew that Greenall inspected his place regularly since there were always chalk marks, in accordance with the General Rules of the Colliery showing that he had been there. On the morning of the explosion, Arnold had seen the deputy fireman, John Merrick, inspect his place and he told the court that he had every confidence in the man's abilities. He had fired a shot that morning and there had been no sign of gas.

The next witness was Joseph Marsh, whose brother John and nephew John jnr. were both killed in the disaster. These were three of the people who had worked at the Pewfall Colliery and had worked for only two or three weeks at the Queen Pit. Joseph did not go to work on the fateful day due to illness and he told the court that his brother was a very experienced miner who could handle explosives well.

In answer to the Coroner's questions, Joseph said that earlier in the week he had some shots that had misfired and he thought that this was due to the quality of the powder. He saw no danger in the situation since there was no evidence that there was gas present. Mr. Higson, the Inspector, questioned him closely on the arrangements for firing shots in the colliery. Marsh told the court that he fired one shot a day and that he examined his own place before the shot was fired. He did not examine as far as the far end of the workings which were about ten yards away but only the immediate area of his place of work.

Mr. Higson said,

"The whole of the top was really your place and under the Special Rules of the Colliery it was your bounden duty to examine it and it is not asking too much that you should make this inspection when the lives of others were jeopardised thereby."

Marsh again stated that he did not go as far as the end of the workings and the Coroner intervened, "He can not say more Mr. Higson. He should have looked but unfortunately he did not and he was not told by those above him."

Mr. Higson pressed the point but Mr. Pickard and Mr. Driffield again pointed out the Joseph Marsh had not been instructed by his superiors to search the end of the workings for gas before he fired his shots. At this point Mr Higson let matters rest.

The question as to the use of gunpowder in the mines was a very topical one as there had been two serious explosions in the High Brooks Colliery at Ashton-in-Makerfield a few years earlier which had caused a great loss of life and a gunpowder explosion could have been the cause of the fatalities in this explosion. There was also the question as to how the powder was used in the mine to get coal and this question was to arise later in the inquiry.

Marsh stepped down and Mr. John Chadwick took the stand. He was at Pewfall pit when the explosion occurred and got to Queen Pit between noon and one. He went down the pit and led the exploration. In his opinion the explosion had occurred in John Marsh's place. Marsh had fired a shot about an hour before and, judging by the boxes of coal that he had filled and were standing about sixty yards away, he was ready to fire another shot and had done so. The brattice in Marsh's place had been pulled down so that it could be moved somewhere else in the mine. This could have led to a build up of gas in the workplace and it was possible that the shot could have ignited it. Another possibility for the presence of the gas was, that there was had been a sudden flow of gas from the coal, called an outburst, but in his opinion, this had not happened.

He went on to say that a few months ago there had been a quantity of gas behind a fault that had exploded and set fire to the coal. Prompted by Mr. Higson, Mr. Chadwick agreed that the method of ventilation could be improved and he outlined his ideas on the subject to the Court.

Mr. Chadwick stepped down and the Court next heard the evidence and comments from Mr. Peter Higson. He had no doubt that there had been a large accumulation of gas in Marsh's place and he thought that the shot had ignited it. The question was, where had the gas come from?

If there had been gas in the other workings then this would have been drawn into the fire and ignited. He thought that this was the case in John Moss's place where charred props were found. He found no evidence of a sudden outburst of gas, but he commented on the way that the ventilation was split and thought that the area of the workings could allow a greater quantity of air to pass through. The Coroner, no doubt mindful of the questioning of Mr. Marsh, specifically asked Mr. Higson if he thought *'there was any want*

of precaution? Mr. Higson answered the question by general comments on the splitting of the ventilation and the use of brattice in the ventilation system.

After Mr. Higson stepped down, Mr Driffield summed up the evidence and instructed the jury to retire and consider its verdict. It took a quarter of an hour and returned the following verdict:-

“That Henry Owen and twenty five certain others came to their deaths by an explosion of firedamp in the Nine Foot Mine, Queen Pit in Haydock on the 30th. December and we find from the evidence before us that the said firedamp was ignited by John Marsh’s blown out shot but whether there was a sudden outburst, there was not sufficient evidence to show.”

The fireman ,Greenall, who was not named in the Report, was found in a part of the mine where the brattice was supposed to have been down and he had put it back with little thought of the consequences of his actions. As the air flow was restored it would have swept out any gas that had accumulated and he thought it had arrived at Marsh’s place just as he fired the shot. in Mr. Higson’s opinion the fireman should have found the gas before the ventilation was restored. The gas had accumulated in a working place that had not been used for some time and had not been examined daily by he fireman as was required by the Rules of the Colliery so he was ignorant of it’s presence. In the Report he commented:-

“These frequent casualties have disclosed the painful fact that fireman have omitted to make an inspection of places not actually in work, although situate near those workings in which men are daily employed: this shows a serious neglect of duty, into which the owners of the mines should make constant and minute enquiry, and provide a check on their proceedings, whereby neglect or omission may be detected to prevent accidents occurring.”

As to the general use of brattice in the ventilation system, Mr. Higson made the following comments:-

“It has recently become the practice to conduct the ventilation of the workings by means of brattice cloth to a considerable extent, on the grounds, no doubt of economy, though some allege, for safety in the event of an explosion taking place, the system cannot be allowed to go on, nor be too soon discontinued. Brattice makes but a delicate and unreliable partition, as it is liable to be broken down by the slightest fall from the roof it requires constant and unremitted attention on the part of every one in any way connected with the working of the mine, which experience shows is seldom or ever given in the manner and form absolutely required. it did not appear that the underlooker of the mine had inspected the place from which the gas was fired for some time previously, relying on the fireman seeing it was safe. Two days before a collier was sent to make a cut through into a parallel road but he did not go to the end by ten or twelve yards. Neither the underlooker nor the fireman went with this man, who was a stranger to the mine, and ignorant of gas and the mode of dealing with it. He was absent on the day of the explosion and thereby escaped the catastrophe. The owners of the mine would do anything to prevent such a casualty as this and I have always believed that the colliery is well managed. In opening out large areas of new ground, it is a great mistake to conduct the ventilation by means of brattice, except only from one cut through into a parallel road, which should not in any case exceed twenty yards, and in no instance should bratticed places be suspended until they have been opened out at the extreme ends, and communications made with the adjoining places, so that the ventilation may be free of risk. To leave endways or other places depending for their ventilation on brattice is, in all cases, to provide the means of casualty sooner or later, which the facts contained in these pages prove beyond any question or doubt and such practices will not pass unnoticed.”

Mr. Higson’s words went unheeded and there were many more deaths in the coalfield as the practice of using brattice continued for many years.

SPRINGWELL. Gateshead, Durham. 29th. January, 1869.

The colliery was the property of J. Bowes and Partners. The colliery had been worked for a considerable number of years and worked the Hutton and the Low Main seams. The Low Main lay about ten fathoms above the Hutton which had been worked extensively and there were large goafs and portions of pillars left in this seam.

On the day before the accident John Peel, the resident viewer of the colliery, was going to the Maudlin workings to inspect them when he met John Parkin, the underviewer coming from his rounds in the Low Main and Parkin told he he had seen a crack in the floor in the south district but he could not detect any gas. Peel went to inspect the Maudlin seam workings and arranged to do the same for the Low Main workings the day after.

At the time of the accident which occurred about 2 a.m., the district was supervised by Thomas Aisbitt and he had just relieved Schorer the master shifter who told Aisbitt of a little gas and had told a hewer not to fire a shot. The hewer, Hugh McRae, was working in the place a short time before the disaster had been offered a lamp but had refused it and fired a shot afterwards.

The explosion occurred in the Low Main seam in which naked lights were used and shots fired. Below the point where the explosion is supposed to have occurred there was a pillar of coal and the edge of the goaf in the Hutton seam which would make cracks in the floor so that gas from the Hutton seam could enter the Low Main workings.

Mr. Southern, the Inspector, went to the colliery as soon as he was told of the accident. He went down to the explosion area and found no traces of gas and he measured the ventilation current with Mr. Berkley of Marley Hill, the chief viewer of the colliery and Mr. Southern thought that there was sufficient ventilation to the upper seam as there were only seven working places but he had doubts about the ventilation of the lower seam.

Those who died were-

George Boggon aged 27 years, hewer,
John Coulson aged 55 years, hewer,
David Cain aged 46 years, hewer,
Thomas Aisbitt aged 31 years, deputy and
John Wind aged 20 years, hewer.

At the inquest, the jury brought in the following verdict-

“That Daniel Cain had others were killed by an explosion of gas in Wynn’s bord in the Springwell Pit that the brattices should have been kept nearer the face that McRae was acting wrongly in not taking the advice of Schorer as to his candle and shot that Thomas Aisbitt ought to have had the flat laid off when informed there was gas and that it would be better if the rules of the colliery were known more generally among the workmen.”

After the accident the mine was worked exclusively with safety lamps.

RAINFORD Rainford, Lancashire. 16th. January, 1869.

The colliery was the property of the Rainford Colliery Company and the pit was situated close to Rainford Junction station. The No.7 shaft was the upcast shaft and No.8 the downcast and it worked the Seven Feet and the Rushy Park seams both of which had been exhausted and the pit had been sunk deeper to the Four Foot Seam corresponding to the Arley Seam at Wigan and the workings were quite extensive.

About noon on Thursday, the sinkers noticed that a large quantity of smoke was coming from the mouth of the Seven Feet Mine and on examination it was found that the pillars that had been left to support the shaft were on fire. It was thought that the

ventilating furnace in the upcast shaft had, in some way, ignited the coal. Preparations were made to extinguish the flames and about 10 a.m. arrangements were completed to take water to the fire. First by a siphon was made in the downcast shaft and then the water was taken along an airway between the two shafts, eight men were sent to assist in the work.

On reaching the scene of the fire the seven sat down a short distance from the burning coal and the other went to the downcast to make arrangements for the water. The flame suddenly flared and the seven were severely burnt. None of the men thought that firedamp was present and it was found that this was the case. A fall of roof occurred and interrupted the ventilation for short time and this caused the fire to flare up suddenly. The men on the surface were not immediately aware at what had happened. There was nothing wrong with the shafts and they were quickly brought to the surface and attended to by Mr. Turbin, a surgeon of Rainford and Mr. Gaskell of St. Helens.

On Friday both the shafts were closed a short distance below the pit bank and a strong jet of steam was sent down the downcast shaft in an attempt to smother the flames. During the night the pits were left in the charge of Thomas Barrow and Thomas Whalley, engineers who had to maintain the steam pressure. All went well until early the next morning.

About 4 a.m., it was noticed that large quantities of steam and smoke was ascending the downcast shaft and it was clear that the ventilation had been reversed. Barrow and Whalley left the stoker by the boiler and went to an archway in the shaft 3 to 4 yards below the pit bank. The scaffold that was supposed to be along the shaft was only 3 to 4 feet down and Barrow was heard to say to his engineman how far they would have to jump and he replied that it was not far. He jumped but the scaffold was not there and he fell 60 to 70 yards into the fire below. It is thought that an explosion had taken place in the mine and destroyed the scaffold or that the weight of the men landing on it, caused it to break.

By the following Saturday steps had been taken to send a current down the downcast shaft and up the other shaft. Steam was sent into the workings. It was found impossible to descend the shaft to remove the bodies and shortly after the arching which had fallen was buckled up and thick boards and sand were placed over both shafts while the steam continued in the downcast shaft. It was believed that despite these precautions that there was still a fire in the old workings. Mr. Higson, the Inspector, came to the mine to supervise the operations.

All the victims were colliers and they died as a result of their injuries over the following few days.

Those who lost their lives were-
Michael Brown aged 36 years,
Thomas Bullen aged 34 years,
William Glover aged 40 years,
Samuel Rice aged 28 years,
John Smith aged 57 years,
Henry Birchall aged 49 years,
Edward Turner aged 26 years and
Barrow and Whalley who fell down the shaft into the fire.

The inquest was held at the Junction Hotel at Rainford the inquest Enoch Cheetham, the underlooker for the Rainford Coal Company, gave an account of what happened at the pit. The inquest was adjourned for one month and then opened on the bodies of Barrow and Whalley. A verdict of 'Accidental death' was returned but the jury did not know why the scaffold was not there.

HIGH BROOKS. Ashton-in-Makerfield, Lancashire. 1st. April, 1869.

The colliery stood about a mile from the main Wigan to Ashton road and a railway line about a mile long ran from the colliery offices to the colliery. It was owned by Messrs. Mercer and Evans.

The colliery consisted of two shafts an upcast and a downcast which were both originally sunk to the Orrell Four Foot seam, 280 yards deep. In the downcast shaft a fault had been found that had the effect of throwing the Orrell Four Feet or Arley mine which should had been sixty yards below the Five Feet to a point sixty yards above it which was 120 feet from where it was expected to be found.

The opening up of the seam presented many difficulties as fault after fault was encountered. The seam gave off a lot of gas and great care had to be taken in working it. All the men had locked lamps and there was strict supervision for the firing of shots. Only the firemen could fire shots and no collier was allowed to do so unless the fireman had first examined the place and given his permission. Care was taken to employ only the men as underlookers and their assistants.

Richard Gorton was the fireman on duty on the day of the explosions and he made his customary examination of the workings which began at 4 a.m.. When his examination was complete he returned to the pit-eye to inspect and lock the lamps of the workmen as they went down the pit to work. The day was '*making-up day*' which was the last day of a fortnights reckoning and the whole of the workforce was in the mine.

Several shots had been made read to fire on the previous evening and Gortley had been asked to supervise the firing of these shots as soon as was possible. He went to the surface to consult with another fireman and went down the pit as soon as he had done this. When he got to the pit-eye he went into the south workings to make the preparations for firing the shots.

The colliery fired about seven in the morning and the pit bank was quickly crowded with anxious friends and relatives. At that time the colliery employed about seventy men and boys and they were in the pit at the time. About half of them escaped with their lives and there were about fifteen who were brought out of the pit alive but badly burnt and suffering from the effects of chokedamp.

It was soon realised that the seat of the disaster was in these workings and Gortley and all who were working in that part of the mine were feared dead. The force of the blast was localised but the devastation to the south workings was great with stoppings blown down and large portions of the roof as well.

A rescue party was quickly organised under the direction of Mr. Sharrock the underlooker at the colliery who was in the Orrell Five Foot at the time of the explosion. There were many volunteers for the job and the limiting factor limiting the number of men who could go below ground was the quantity of ventilation. The air supply had to be carried slowly forward by brattice cloth.

Help was quickly on hand from neighbouring collieries and Mr. William Smethurst and the underlookers of Messrs. Meryck Bankes and Samuel Stock went down the pit the morning and the Government Inspector, Mr Peter Higson and his assistant Mr John Higson arrived at the colliery about noon.

As the south workings were approached the first bodies were found. They were of two men, Lowe and Ashcroft, who had been working in a tunnel in a part of the mine which had been developed since the last explosion. It was at this point that the rescuers realised that there was no hope for the men in the workings as the afterdamp was causing them a great problem and at that time the death toll was thought to be eighteen to twenty men and boys.

The last man brought out alive was James Cunliffe and he was in a very bad state from the effects of the gas but under the treatment of Mr Pennington, surgeon, he was revived and was considered out of danger by noon.

The explorers made their examination but they were unable to get all the bodies to the pit-eye because of the many falls in the narrow workings that seriously impeded their

progress. It was not until 6 p.m.. that the falls were cleared sufficiently to bring out the bodies which were assembled at the bottom of the shaft.

The winding of the bodies up the shaft took a full hour and as the pitiful loads arrived at the pit-bank, they were carried through the crowds of sorrowing relatives and friends to a shed which was to serve as the temporary mortuary. The grim count totalled twenty eight including the two that had been brought to the surface in the morning and there were unconfirmed reports that some of the men who had been got out alive but burnt had died during the day.

The last bodies brought up were those of two lads who had been trying to escape and had fallen over the body of a pony and laid there to die from the effects of the afterdamp. There was speculation as to the cause of the disaster and as there had been an explosion at the Queen Pit owned by Richard Evans in Haydock a few months previously which had been caused by a blown out shot this was taken to be the cause of the High Brooks explosion.

Mr Higson went down the pit in the afternoon and made a thorough inspection of the explosion area and on the surface, the local doctors attended the injured. Mr Pennington of Ashton and the assistant to Mr Dalglish of Wigan did all that could be done for the injured.

Of the injured four were known to live in Pemberton an they were expected to recover. Two boys, Wilcock and Jones, who lived near the colliery were very badly hurt and there was little hope that they would recover. The back of Wilcock's head was said to have been burnt to a cinder. Some of the families had suffered terribly by the explosion. The Jones family lost a father and three sons and many had lost a father and a son.

Those who died were-

Alexander Latham aged 36 years, a collier of Wigan.

Peter Lowe aged 20 years, a dataller of Ashton.

Hezekiah Jones aged 13 years of Ashton, a drawer. He was identified by Hannah Hunt wife of Thomas, who was his cousin. Hezekiah helped his brother Joseph, to drawer for their father. All three were killed in the disaster.

John Ashcroft aged 12 years, pony driver of Ashton.

William Worsick aged 32 years, a collier of Ashton who left a wife and six children.

William Worsick (jnr) aged 11 years, worked as a drawer and was William's son.

John Worsick, drawer, aged 13 years, of Ashton and brother to William.

Richard Gorton, fireman, who was widowed and aged 48 years. He left two children.

John Gee aged 36 years. a collier of UpHolland who left a wife and five children.

John McCulloch aged 32 years, of Rose Hill, Ashton, who left a wife and two children.

Samuel McCulloch aged 28 years, a collier of Ashton, who left a wife and three children.

Anthony Norton aged 25 years, a collier of Pemberton.

James Jones aged 30 years, who left a wife and one child.

James Hurst aged 16 years, a drawer. Thomas Hurst of New Fold, UpHolland said James was his brother and he drew for John Gee who was also killed.

William Leyland aged 33 years, a collier of Pemberton.

Richard Marsh aged 23 years, of Orrell, who left a wife.

Thomas Melling aged 46 years, of Pemberton left a wife.

Joseph Gaskell aged 22 years, a collier of Orrell.

John Broderick aged 25 years, a collier of Ashton, who left a wife and two children.

Henry Farrimond aged 33 years of Aspull. He was a collier and left a wife.

James Walls collier, aged 25 years, who left a wife and two children.

Samuel Jones, collier, aged 33 years, of Rose Hill, Ashton, who left a wife and three children in addition to the two that were lost in the explosion.

James Swift aged 13 years, a drawer of Billinge.

Jeremiah Burns drawer, of Ashton aged 13 years.

James Barton aged 25 years, who left a wife and a child.

Joseph Jones aged 17 years, a drawer of Ashton.
Richard Baxendale aged 17 years, a drawer of Ashton.
John Wilkinson aged 12 years, and worked as a pony driver.
William Parkinson aged 12 years, a door tenter of Pemberton.

These were the victims that were killed in the disaster and brought out of the mine dead. Most of them were identified to the court by the underlooker. Eight of the victims that were brought out alive but injured and died later and the evidence of identification was taken at the start of the sittings of the inquiry.

James Cayley. aged 16 years, a drawer of Billinge. He was identified by William Halliwell of New Fold, UpHolland said he worked in the mine where the explosion occurred and was down on the morning of the disaster. James was his drawer. When the gas fired he was at the far end and James had taken a full tub to the top of the jig and he helped to carry him to his house about 11 a.m. and he died about 9 a.m. on Friday from his burns.

A list of the injured who lived at Goose Green, Pemberton were, William Goulding, drawer, Peter Gerard, pony driver, Adam Watkinson, pony driver, and Peter Wilkinson, pony driver.

The injured who lived at Billinge were Moses Wilkinson, collier, and Henry Unsworth, drawer. and those who lived in Ashton were Eliahakim Wilcock, a jigger, Joseph Frier of Mercers Houses, pony driver, Henry Jones, Mercers House, drawer. It was reported that all were badly burnt and not expected to live and the most badly injured were Wilkinson, Jones and Wilcock.

On the 9th. April three more deaths were reported which brought the total to thirty three.

Moses Wilkinson aged 20 years, a collier of UpHolland, left a wife. John Wilkinson of UpHolland and quarryman identified him as his brother.

William Goulding aged 18 years, a drawer of Goose Green. He was identified by his step-mother Margaret Jenkins of Pemberton and was drawer for James Winstanley.

Peter Gerard aged 12 years, of Pemberton, a drawer. He was an orphan and lived with his uncle. He was identified by Ellen Brindle of Goose Green, wife of James, a hand-loom weaver.

Eliahakim Wilcock. He died later and was a jigger and aged about 15 years. He lived a short distance from the pit and had both legs broken in an accident at the pit a short time before. He had only just recovered and gone back to work. The body was identified by his father who gave the lad's age as 17 years and he had worked in the mine three or four years. He was attended at his home by Dr. Pemberton, until his death.

Henry Jones. He died on the Wednesday after the explosion aged 15 years and lived at Rose Hill, a short distance from the colliery. His father, David, identified him and said he was a drawer in the Four Foot mine.

Henry Unsworth aged 16 years, drawer for John Wilkinson and was identified by his father.

Adam Watkinson aged 13 years, a jigger who had worked in the mine fourteen or fifteen months. He was identified by Ann Watkinson, his mother, of Goose Green who said he was brought home badly burnt and attended by Dr. Daglish until his death.

A meeting held in Wigan to see what relief could be provided for the dependants of the disaster. There were thirteen widows thirty orphaned children and six other dependants that now had no means of support. The Mayor of Wigan called the meeting because there had been other colliery explosions in the district. The Queen Pit at Haydock, the Rainford and Hindley Green Collieries had all suffered recent disasters which left widows and orphans in need of relief.

The Local Committee in Ashton had raised £35 and Messrs. Mercer and Evans had promised £250 for the High Brooks Fund and collections had been started for the other disasters. The committee felt that they could not deal with the High Brooks explosion on

its own, but decided set up a fund for the victims of all the recent colliery explosions in the district with each district making it's own contributions to a central, local fund.

Funds were also looked for from The Mansion House Fund of the Lord Mayor of London and from Liverpool. Both these funds had been set up for the relief of the dependants of the victims of other colliery disasters like those of the Barnsley explosions and for those at the Talk o' th' Hill Colliery in Staffordshire.

The inquest into the explosion was opened by the County Coroner, Mr. C.E. Driffield at the Park Lane Hotel close to the colliery.

James Whittle, fireman, of Rose Hill, was the first of the workmen to give evidence to the court. He had made his inspection of the Arley district and Gorton, the other fireman, had done his inspection of the other part of the pit.

The men and boys went down the pit at 5 a.m. When the explosion occurred Whittle was in the tunnel and felt the suction of the explosion. He knew what had happened and shouted to the men to go to the pit shaft. He went with them and saw that they had ascended safely but did not go up himself.

He went towards the direction at which the explosion occurred but he could not get far and went back to get help. The exploration then started and he saw some men brought out alive and helped with the recovery of the bodies.

At the resumption of the inquest, the gentlemen present were reported to be, Mr. Peter Higson, the Government Inspector for South-West Lancashire, Mr. W. Pickard the Miner's Agent, Mr. Mercer and Mr Evans, the proprietors of the colliery and Mr William Evans and Mr. Christopher Fisher Clarke, mining engineer to Sir Robert Tolver Gerard of Ashton-in-Makerfield.

Mr. Clarke was called and he presented a plan of the colliery to the court. The distance from the downcast shaft to the top of the jig-brow was 260 yards in a straight line and the distance from the jig brow to the fault leading to the Five Foot coal was 160 yards. The ventilating air had to travel 655 yards round the Five Foot workings until it returned to the fault. From that point to the top of the brow where the working places started, the air had to travel 160 yards through the explosion area, pass up the brattice and back to the bottom of the brow, and then another 160 yards. From the bottom of the brow the air travelled to the face, 195 yards and then to the upcast shaft, a further 805 yards. The total distance travelled by the air from the downcast to the upcast shafts was 2,520 yards.

There were eighty five yards of bratticing in the five endways and fifty five yards of brattice in the lower level. There was none in the Five Foot and the whole mine was ventilated by a furnace placed in the upcast shaft about sixty yards below the mouthing where the return air returned into the shaft. The mine was level for the Lancashire coalfield, dipping one in eight.

Henry Ashcroft, of Ashton, who was formally an underlooker at the colliery but had left about a month before the explosion, was the first to be called. He had been at the pit for about twelve years and he thought the ventilation was efficient and he never saw very much gas in the pit. When he heard of the accident he went to the colliery and descended to the workings.

Henry Wilson, a collier, who was in the pit when the explosion occurred said he noticed nothing wrong with the ventilation and the air was as good as usual.

The next witness was James Rylance who was a collier and was working in the other side of the tunnel where the explosion occurred. Since the explosion he had been down the pit and through the workings. He expressed the opinion that the explosion had occurred when a shot that was fired in Leyland's place, had blow out, due to the shothole cut into the roof, and he believed that the air was charged with gas and the shot ignited this. The body of the fireman had been found close to Leyland's place and appeared to have been present when the shot was fired. Rylance had known Gorton the other fireman for three years and did not think that he was a very careful man and in his opinion Leyland did not do his work in a professional manner. When he was prompted by questions from Mr. Pickard, he was very critical of the method of ventilation in the mine

and a short time before he had suggested that the ventilation should be split. This had been done and he thought he owed his survival to this split. Mr. Mercer said the tunnel had been made before the witness suggested it.

Work was going on at the colliery to repair the damage and about a week after the explosion there were reports of another. Shortly before 10 am. on Tuesday 6th. April, a portion of the brick lining of the upcast shaft fell down the shaft to the Pemberton Four Foot seam. The bricks had probably been loosened in the explosion but the damage had not been noticed. The effects of the bricks falling down the shaft which caused the ventilation to be reversed for a few moments and smoke came up the downcast.

People in the district, seeing the smoke, thought that there had been another explosion and the wives and mothers of the one hundred and fifty men in the pit rushed to the colliery from the surrounding towns and hamlets. There were very relieved to hear the true facts. No one was injured in this incident.

James Whittle, who was now the head fireman at the colliery, and lived in Ashton, was the next witness. He had given evidence to the inquiry into the 1866 explosion when he was a collier at the pit. There were two firemen under him, Gorton and Joseph Orrell. After he had examined the men's lamps at the bottom of the pit, he saw Gorton, who told him he was going up the shunt. The explosion occurred about half an hour later.

While exploring the explosion area the same morning, Mr. Whittle found the shot hole that had already been described to the court. Near the shot hole were the bodies of Leyland and Gorton.

The Coroner asked him about the presence of any gas and he did not find any nor did he know of any but he thought that the explosion had been caused by exploded powder tins which fired one after the other and he thought that the men met their deaths, either by being blown up by gunpowder or suffocated from the resulting powder smoke.

Mr. Higson said five powder tins had been found blown apart at the scene of the disaster and these were capable of holding up to two pounds of gunpowder. The resulting explosion would have been strong enough to blow down the stoppings when mixed with the coal dust in the mine.

James Whittle said that he would have trusted Gorton with his life and he was a very careful workman but when he was not at work he was frequently drunk and in his opinion not fit for the post as fireman.

Henry Wright and William Highton, two colliers who were in the Five Foot at the time of the explosion gave evidence to show that the explosion was caused by the presence of gas.

Wright said that when he was trying to leave the pit after the explosion he was caught in chokedamp which came from the burning of firedamp. The gas made him unconscious for a while and he only recovered consciousness at his home. Highton said that the afterdamp was the worst he had ever known and it was impossible for it to be powder smoke.

Highton went on to say that two days before the explosion he had been working in a cut through and he had seen gas in his lamp. He had told Gorton who had erected a swing cloth by which the gas was cleared. He was not satisfied with Gorton as a fireman and he thought him not to give his full attention to the ventilation but he did act when defects were pointed out. On other occasions he had found gas but not so much as to cause an explosion. One build up had been caused by an accumulation of dirt behind a ventilation door which kept the door open. When this was pointed out to Gorton, the situation was corrected.

Mr. Higson asked the witness if he had ever complained about Gorton to the underlooker. This could have been done under the rules of the colliery. For the benefit of the colliers in the court and miners generally Mr Higson pointed out that this course of action could be taken by colliers and this should do if it could avoid accidents.

Matthew Heyes, a collier, was working with Highton at the time of the explosion and he believed the gas encountered after the explosion was afterdamp and not powder smoke.

He also expressed the opinion that the explosion was caused by the blown out shot and was due to Gorton's carelessness.

The underlooker at the colliery, William Sharrock, was the next to be called. He was down the No.1 pit in the Arley Five Foot mine at the time of the explosion where he felt the wind. He went to the No.2 pit through the tunnel and at once started working to improve the ventilation. He had been down the pit every day since the disaster and he thought the explosion was seated in Leyland's place and attributed to a blown out shot.

The direct cause of the explosion was not gas but coal dust and powder. If the cans that had been found were full, then twelve to fourteen pounds of powder would have caused the explosion and this would have been capable of doing the damage that was done to the workings and roads. He thought this because he had not see gas in the mine either before or after the explosion. He had, after the disaster, deliberately left doors open and still he could not detect a build up of gas.

Under Mr. Mercer's orders he shut off all the ventilation to the mine for five hours and at the end of that time the mine was gas free. The mine was filled with powder smoke and the smoke from burnt timber and brattice after the explosion but there was little afterdamp. He said he had no proof that coal dust would burn but he produced some coked dust that had been taken from the mine and exhibited it to the court. He thought that the Arley mine being low, dry and dusty would provide a lot of dust that could become inflammable.

William Sharrock was indeed a far sighted man. It was not until the early years of the twentieth century that conclusive experiments were conducted to show the connection between coal dust and mine explosions. In the intervening years many men were to die in colliery explosions that were attributed at the time to gas, but were in fact explosions of coal dust.

Of the five powder tins that had been found, the nearest was thirty and the furthest, one hundred yards from Leyland's place. This he thought was the cause of the explosion and he did not think that blasting was safe in the Arley mine.

The witness said he had confidence in Whittle and in Gorton who stayed away from work only on a 'play' Monday. The term 'play' was used in the Lancashire coalfield to mean that they did not go to work on that day. He had worked at the Park Lane Collieries for twelve or thirteen years and had been the underlooker for fourteen months with five weeks as chief underlooker and had found little gas in the mine in all that time.

The next sitting of the court began with evidence of identification of the survivors who had died since they were brought out of the mine. This brought the total death toll to a final thirty seven men and boys.

A mining engineer connected with the Winstanley Collieries, Thomas Shortrede was the first expert witness to give evidence. The Coroner asked him directly his opinion as to the cause of the explosion and he thought that it was gas that had fired. The shattered powder tins, in his opinion, could not account for the devastation that was caused in the mine and he thought that gas had accumulated somewhere in the mine but he could not say where.

Shortrede said he had seen the shothole and it was not drilled very well and he thought that this could easily have ignited the gas. as to dust he had carried out experiments in his mine at Winstanley and on no occasion did a blown out shot ignite the coal dust that was lying around. The mine in which the experiments were conducted was also dry and dusty. Mr. Higson asked him if he had considered stopping blasting in the Arley mine at his colliery and he said he had considered it but saw no reason to stop the men using shots. He also disapproved of the system of ventilation adopted in the Arley mine at the High Brooks Colliery.

Mr. G. Holland, the manager at the Winstanley Collieries, went with Mr. Shortrede into the explosion area and he thought that the gas that they encountered was afterdamp but added that there was a little powder smoke mixed with it and he also thought that coal dust could not be ignited from a shot.

Mr. John Mercer, the senior partner of the firm of Mercer and Evans, who owned the High Brooks Colliery was the next to be called to give evidence. He was at his home when he first heard of the explosion but went at once when he learned of it. When he arrived at the colliery he took charge of the operations to recover the dead and descended the pit several times. The other partner of the firm, Mr. Arthur Evans, had gone down before him and it was not until the day after that he got into the workings and saw the scene of the disaster. He was in no doubt that it had been brought about by the blown out shot in Leyland's place and the main force of the explosion had been in the main brow and that the coal dust had been ignited by the exploding powder that was in the tins. He knew that the mine was dusty and that the dust would burn. He said, a spadeful, thrown on the smithy fire with a blast of air, would make a flame six yards high. The coal dust lay inches thick in the floor of the mine. As coal fell from the loaded tubs, it was crushed and the men's feet also ground the coal on the floor as they walked. The dust was deposited throughout the mine.

He was aware that Gorton had fired the shot in Leyland's place and he had every confidence in the man's abilities. He had been a daywageman at the colliery for many years before he was appointed to the post of fireman on Ashcroft's recommendation. Mercer had known of little gas at the colliery, only in the Five Foot and when it was found it was quickly dealt with.

When questioned by Mr. Higson, Mr. Mercer agreed that he had not been down the mine regularly but left the management to the underlookers and fireman, who carried out his instructions.

Mr. Peter Higson, the Government Inspector was the last witness to be called. He had made a thorough inspection of the mine after the explosion and he had seen the shot hole. He was of the opinion that the shot had blown out. He found some unexploded tins of powder in the endways and he did not think that gunpowder was the sole cause of the explosion but agreed that it might have aggravated it.

As to the question of the coal dust being a factor in the explosion, he said, when coal dust burned, it formed carbonic acid gas (carbon monoxide) and sulphurous vapours which were not unlike afterdamp but he thought that burning coal dust would have set the coal on fire which was not the case.

He thought that gas had accumulated somewhere in the mine due to a brattice being down or a door left open, which had either driven gas into, or stopped the ventilation to Leyland's place. Whatever the case, he was sure that Gorton did hold life so cheap, particularly his own, as to fire the shot without making a thorough examination of the place for gas.

The Coroner asked Mr. Higson if he thought blasting in this mine should be discontinued and Peter Higson replied that he had given the matter much thought and had, a few months before, suggested to the Secretary of State, that blasting should be prohibited, not only in this, but in all gaseous mines. With the Secretary of State's knowledge and approval, he had sent a circular to all the colliery proprietors in his district concerning the precautions that should be taken to avoid accidents.

With particular regard to blasting the circular read-

"The great loss of life from the unskilful use of gunpowder clearly proves that blasting in mines which emit inflammable gas should at once be discontinued in getting coal.

In those mines which do not give off gas it should be allowed under competent supervision."

After the circular had been read to the court, Mr. Higson said-

"It is sufficient for the purpose of this inquiry to say that I issued that circular as the forerunner of what may come some day. Mr Mercer, it appears, who had a copy of it, paid little attention to it, for he did not stop blasting."

Mr. Mercer replied that it was not an order to stop blasting. Mr Higson said that he would not only stop blasting but see that the ventilation was increased.

This brought the gathering of evidence from the workmen and the expert witness to a close and the Coroner made his summing up to the jury, who retired to consider their verdict.

Mr. C.E. Driffield summed up and the jury retired to consider their verdict and after a short deliberation returned and delivered the following verdict-

“We think that the accident has occurred from an explosion or explosions of gas in the Four-Foot mine at High Brooks pit on the 1st. inst that it is shown that gunpowder has to a greater or lesser degree contributed to these explosions and further, that these explosions originated, in all probability, with Leyland’s blown out shot, fired by the deceased fireman Gorton, but how the firedamp gas came to be present there is no evidence to show.”

The verdict and the proceedings attracted much interest from all over the country and a letter which appeared in the *‘Colliery Guardian’* dated 14th. May, 1869 was critical of the ventilation at the colliery.

“To The Editor,

In looking at the plans of the High Brooks colliery workings, I find it a bad ventilation system, taking it round the Five Foot and then through the Four Foot also having those wooden doors made double with cloth ones near the jig-wheel and all connecting with the main airways.

If any of those doors became defective in any way, say by a piece of coal jamming them, the wind would pass the wrong way into the returns as if nothing were before it. I look upon the doubling of the ventilation doors with cloth a mere show. If it be necessary to have the doors between the intake and the return roads, there should be duplicate wooden ones made close with bricks and lime.

There are too many cloth doors in the pit. So long as they are used as ventilation, the public will hear of more explosions and loss of life.

I hope the Government Inspector will look into this.

A Collier.

Cumberland 6th. May 1869.”

CWMNANTDDU. Llanerch, Monmouthshire. 25th. May, 1869.

An explosion at the colliery owned by the Ebbw Vale Coal Company, about two miles from Pontypool, claimed seven lives and on the 1st. June Mr. Lionel Brough, the Inspector went down the pit to examine the No.1 deep heading and a group of nine stalls in the Meadow Vein coal where the disaster took place. The heading was about eight feet high and the seam was not considered to be fiery. For the most part the Meadow Vein had a shale roof often called ‘cliff’ or ‘clod’, but in the neighbourhood of the No.1 heading the roof was composed of laminated, carbonaceous rock which was known to give off gas if it was disturbed and this was the state of the roof over the nine stalls in the No.1 heading.

About eight months before the disaster, the upper stall in the heading had to stop work because there had been a heavy fall but no firedamp was found after the fall. When the fall was cleared, the stall was then worked and merged into another and work continued here until another fall took place. This was accompanied with firedamp. The night before the disaster the roof weighted and caused a fall but Mr. Brough found it impossible to say whether this was before or after the explosion but there was no doubt that the fall was accompanied with a release of firedamp. About midnight on the fatal night there was evidence that a fall was heard.

There was reason to believe that certain men killed in the disaster found gas coming from the face and that they were alarmed by the grinding noises coming from the roof and considered it necessary to leave the face. The Inspector thought that the men went down to Stall No. 7 where they had agreed to cut the bottom for other workmen. It was thought that on the way they stopped to fill a tram and then passed down to cut the bottom coal.

After that they went back to stall No.1 to get their clothes and they were doing this when the pit fired.

Those who died were-

Hananiah Williams, collier of Abersychan,
Thomas Williams, bottom cutter, single of Garsdiffaith,
Thomas Jones, collier, David Rees, collier, left a wife and 3 children,
Henry Rees aged 14 years,
William Cooke or Coope jnr., bottom cutter, left a wife and child and
Alfred Davies, collier. Two horses and a donkey were also killed.

Thomas Green, John Morgan and John Mitchell had miraculous escapes. Green covered his mouth with his cap after the explosion and managed to crawl to the level from where he got to the bottom of the shaft and raised the alarm. Morgan was blown behind some timbers and had lost hope when he was rescued by the ostler, James who had a light and found him. John Mitchell was found unconscious lying in the level and brought out of the pit. The three men were treated by a doctor at the surface and taken to their homes.

At the inquiry into the men's deaths, Mr. Brough stated-

"I have had to inquire into many cases of serious explosion, and in most of these some person or other remained to afford a reasonable idea of what had really taken place but in this matter which renders it necessary that we should meet here this day, there are none to appeal to not one link of the human chain is left to give the slightest clue as to the actual nature of the occurrence. I have had to find it all out and elaborate it as best as I could by patient investigation."

Whether the brattice was close enough to the face was not in question but the Inspector thought it would not have cleared the gas. He found that the blast went down as far as No.5 stall and then went to the deep heading through the top door and almost into the main level. The head viewer expressed the idea that the top door had been left open and so the accumulation of gas has ensued. There were 6,000 cubic feet of air per minute passing directly from the surface and although Mr. Brough commented that this did not seem to be a lot, he expressed the opinion that there was no violation of the First General Rule. He thought that the gas came from a blower and at the time of the inquiry commented that gas was still issuing from this blower. He thought it was the change in the roof that had caused the disaster and it was from this that the gas came.

The jury brought in the verdict that-

"The deceased were accidentally killed by an explosion of gas caused by a blower in the top stall of the Cwm-nant-ddu works."

FERNDALE. Rhondda Valley, Glamorganshire. 10th. June, 1869.

The colliery was the property of Messrs. Davis and Sons and was at Porth in the Rhondda Valley. There had been previous explosions at the colliery, namely on the 8th., November, 1867 when almost two hundred lives were lost. After the explosion had been down to improve the safety in the mine. Mr. Vivian M.P., suggested after the first explosion that the three districts of the mine should be quite separate and should not communicate with each other. The workings were not very old and the workings were at 300 yards in the Four Foot Seam which gave an excellent quality coal but the seam was known to be of a fiery character. The mine was divided into three districts, by faults, the East, West and South and it was in the South District, the Duffryn District, that this explosion took place.

The manager was killed in the previous explosion and the new manager was Mr. David Rees who had previously been at the Mountain Ash Colliery. The proprietors also employed Mr. Richard Bedlington as a consulting engineer

Six hundred men descended the mine at 7 a.m. and 120 went to work in the Duffryn or south workings. At 4 a.m., Thomas James, the fireman, went down the pit to make his inspection and by 6 a.m. he had inspected all the working places and made his report to Mr. Walters the overman and told him that everything was all right. By 7 a.m., all the lamps had been given out and the men were at work when a cloud of dust came up the upcast shaft and a report was heard.

News quickly spread and help came from other collieries and Dr. Roberts, assistant surgeon to the pit was informed and he and several other local doctors arrived at the pit. Rescue teams under the leadership of Hugh Beg were organised and the Duffryn side of the pit was found to be extensively damaged. there were many falls and progress was very slow. Bodies were found lying on their backs and suffering the effects of afterdamp and some were scorched. The bodies were brought to the surface to greeted by wailing crowds who carried away their loved ones to their homes. Richard Evans was brought to the surface alive but with a compound fracture of his leg and he died a short time later.

By 4 p.m. only a few stalls had yet to be explored when it was found that the air was becoming oppressively hot and there was a fire on the dip heading and. Mr. T.E. Wales, the Inspector had arrived at the colliery and he and along with others decided that it would be best if the fire could be contained by a stopping. Under the direction of Mr. Henry James, a stopping of turf was constructed but this did not contain the fire and it was decided to flood the mine.

Iron pipes were procured from Birmingham to convey the water down the shaft and into the workings but it was found that the turf wall was too hot for men to work there to penetrate it. Eventually a stream of water was got to the workings and the fire extinguished.

Those who died were:-

George Allen aged 33 years, single.

George Chamberlain aged 29 years.

Daniel Davies.

Samuel Davies aged 28 years, single.

John Davies aged 21 years, single.

Edmund Davies.

Able Dore aged 24 years, single.

John Edwards aged 32 years, left a wife and 4 children.

Thomas Elliott aged 40 years, left a wife and 2 children.

Henry Exell.

Joseph Exell.

James Griffiths.

William Hughes.

Richard Jones.

Morgan Jones.

Thomas Jones aged 24 years, single.

James Jones aged 50 years, widowed.

John Jones aged 21 years, single.

David Jones aged aged 24 years, single.

Morgan Jones aged 13 years, doorboy.

Morgan Jones father of Morgan.

Thomas Jones aged 28 years, left a wife and child.

Thomas Jones aged 14 years, doorboy.

William Jones aged 30 years, left a wife and 4 children.

David Jones aged 24 years, single.

William Llewellyn aged 17 years.

William Mathews.

John Mathews aged 28 years, single.

Abraham Mathews aged 14 years, doorboy.
Jacob Mathews aged 48 years, left a wife and 4 children.
John Morgan aged 22 years, single.
James Morgan aged 34 years, left a wife and 3 children.
James Morris.
Richard Llewellyn Morris aged 23 years, single.
James Nash aged 32 years, left a wife and child.
Evan Phillips aged 43 years, single.
Thomas Price.
John Price aged 50 years, left a wife and 3 children.
Evan Richards aged 48 years, left a wife and child.
Windsor Roderick aged 23 years, single.
David Samuel aged 59 years, left a wife and 5 children.
Samule Straide left a wife and 4 children.
Charles Taylor aged 43 years, left a wife and 7 children.
George Benjamin Thomas aged 31 years, left a wife and 2 children.
Thomas Thomas aged 34 years, single.
Thomas Thomas aged 27 years, single.
Edward Waddleton aged 30 years, left a wife and child.
Bendigo Weeks aged 24 years, single.
James Wilkins aged 13 years, doorboy.
Evan Williams aged 25 years, single.
David Williams aged 21 years, single.
William Mathews, father of two boys killed in the pit, was also in the mine but in a district which was unaffected.

The inquest was opened at the new Inn, Pontypridd by Mr. George Overton, Coroner for the County of Glamorgan where evidence of identification of the 53 bodies that had been recovered was taken, but it was not until the 3rd. September that the mine was cleared and inspected and all the bodies recovered, that the full inquiry took place. An unlocked lamp had been found which was against the rules and this was thought to have played a major part in the disaster.

After hearing all the evidence and the Coroner's summing up the jury returned the following verdict-

"We find the deceased came to their deaths by an explosion of firedamp on the 10th June last at he Ferndale Colliery but we have not sufficient evidence as to what caused it.

We are of the opinion that the air was not properly distributed over the whole of the workings and that the windways were not of sufficient size. We regret that we should have to investigate another explosion in the colliery so soon after the terrible catastrophe of 1867. Ee regret also that the suggestions of the jury in the occasion has not been fully implemented by the mangers and officials of that pit. The explosion shows a lamentable want of care on the part of the officials of the pit.

We put forward the suggestions that first a Government Inspector should visit the pit at least once on three months and that a sufficient number of Inspectors should be provided."

QUEEN PIT. Haydock, Lancashire. 21st. July, 1869.

The colliery was the property of Richard Evans and Company and was part of the Haydock Collieries. There had been an explosion at the colliery in December 1868 and since the December explosion, work had continued at the Queen Pit and the workforce had a generally good opinion of the conditions in the pit and the management of the colliery. It was considered a safe mine, despite the occurrence of the last explosion.

Evans & Co. had made important alterations to the system of ventilation of the mine in accordance with the recommendations of the Mines Inspector but the work had not yet been completed. The colliery could have employed about three hundred and fifty men but due to the work on the ventilation system and the general decline in the coal trade, there were seldom above one hundred employed at any one time.

The underground work had been concentrated close to the pit eye and special care had been taken in the the Wigan Nine Foot Mine where the last explosion took place. The work that had been done was carefully planned and inspected but the Inspector of Mines had not been asked to make an inspection since the work was not yet complete.

On Wednesday 21st. July about one hundred men descended the pit. A full inspection of the workings had been made and everything was found to be satisfactory. Work commenced about six a.m. and all went well until five minutes past eleven when the banksman, Thomas Taylor, who was working near the mouth of the shaft saw a momentary reversal of the ventilation and a cloud of dust come from the downcast shaft. He sent someone to look for Mr. Billinge, the underlooker of the mine and repeatedly sent signals to the bottom of the shaft. For several minutes there was no reply and then the cage came to the surface bringing a young man whose name is not recorded, who said that there had been an explosion in the Wigan Nine Foot workings.

Mr. Billinge, who had been down the pit at the time that the explosion occurred, was in the opposite return air course when he was blown off his feet and banged against the wall of the tunnel by the force of the blast. He recovered quickly only too well aware of what had occurred and made his way to the bottom of Legh Pit and from there he hurried the few hundred yards to Queen Pit.

Mr. Chadwick, the underground manager and Mr. Harvey, the Company secretary were quickly at the colliery organising the exploring parties. As news of the accident spread throughout the village, a large crowd of anxious men and women gathered at the pit head. Many were agitated and asked for information as to who was in the mine. Volunteers for the search parties willingly came forward and it was about one p.m. that operations were ready to commence. Up to midnight about sixty men were working in relays and they found that the stoppings were badly damaged, waggons blown to pieces and the first two parties reported that they had found about twenty bodies.

Mr. Harvey and other pit officials set about making arrangements above ground. Twenty three carts were obtained to take the thirty survivors that had been rescued home. Many of these men were in a very bad state suffering from the effects of the afterdamp and some were badly burnt. One of the survivors, William Blinstone, died in the cart on the way home. Drs. Twyford and Jameson from St. Helens arrived at the pit head and tended the survivors. The Reverend Sherlock, the Vicar of Haydock, was also at the scene comforting the anxious crowd.

Mr Richard Evan's sons Joseph and Josiah, were at a meeting in Manchester when the disaster occurred and they were sent a telegram informing them of the event. They were very soon at the colliery. Telegrams were also sent to the Government Inspector of Mines and to Mr. Driffield, the County Coroner. Help also came from the local colliery owners. Mr. Clark, mining engineer to Sir Robert Gerard of Ashton-in-Makerfield and Mr. J. Stone of Stony Lane Collieries, Hindley, near Wigan together with Mr. Chadwick supervise the early rescue operations.

One of the rescue parties had a very narrow escape when they were working at the far end of the workings. They came across a large body of afterdamp and first one and then another member of the party collapsed. Mr. Chadwick and Mr. Billinge began to feel the effects of the gas. Billinge went back to get help and Chadwick stayed with the two unconscious men. Mr. Chadwick then began to feel the effects of the gas and decided to go down the tunnel after Mr. Billinge. He saw the glimmer of a lamp in front of him and when he got to the spot he found Billinge unconscious. He went on and very soon found a rescue party who got Billinge and the two men safely out of the pit.

By ten p.m. all the workings had been searched and fifty six bodies recovered. It was after midnight before all the bodies were at the surface, many of them burnt and badly mutilated. They were taken to a shed that had been prepared as a temporary mortuary at the pit head. Here, during the night, they were washed and laid out to await identification. This was a difficult task due to the state of the bodies which indicated the force of the explosion.

During the following morning a constant stream of friends and relatives made their way to the shed to find their loved ones. They had to make their way through a crowd of the curious who peered through the cracks in the shed walls and glanced through the door as it was opened and closed. One man had to visit the place four times before he recognised his son. The floor of the shed was covered with sawdust and disinfectants had to be liberally used, necessary precautions due to the state of the bodies and the hot July weather.

On Thursday, the day after the explosion, Mr. Peter and Mr. John Higson, the Government Inspector and his assistant arrived at the colliery. They, together with Mr. Chadwick and Isaac Billinge descended the pit at about nine a.m. to examine the workings and try to find the cause of the disaster. They were later joined by Mr. Mercer of the Park Lane Collieries, Ashton-in-Makerfield and Mr. Smethurst of the Bryn Collieries also of Ashton. The party came to the surface about noon.

The Nine Foot workings were ventilated by a tunnel, called a jig brow, at the top of which, the air was split and sent east and west. Not many men were working on the east side. The majority of the victims were found on the west side and they had suffered serious burns. There was a tunnel leading from the Nine Foot workings into the Ravenhead Six Foot Mine and some of the victims were found in the latter killed by the afterdamp. In the early editions of the press it was thought that Mr. Higson would make another inspection later in the week. As to the ignition of the gas, it was suspected that gunpowder used in a shot was responsible.

Most of the injured that had been got out of the pit were progressing favourably but some were not. William Yates, the fireman, was said to be the most seriously injured and very badly burnt. A man named Owen was suffering from the effects of afterdamp. William Lucas aged twelve years was reported to be in a critical condition suffering from a severely lacerated scalp and a fractured skull and Henry Picton, a dataller of Ashton-in-Makerfield, whose arms, legs and face were badly burnt was also said to be in a critical condition. William Yates and Henry Picton appear on the list of victims but William Lucas, although reported to be so badly injured does not appear on the list and so presumably, survived.

The identification of the dead was a difficult process due to the state of the bodies. One man described as '*hale and hearty*' arrived at the shed to protest that a corpse that had been labelled with his name was not in fact him and an accurate identification had to be found for the corpse. The families of two lads could not decide which was which but by Thursday all fifty six victims had been identified. The Wigan Reporter wrote-

"There was lamentation, moaning and woe over these fifty six grizzley corpses and too truly did the tears of the women tell the story of the desolate homes which is recorded on the list of the dead."

By Friday the bodies had been placed in coffins to await the inspection of the Coroner's jury which met at the Rams head Inn, Haydock. On Wednesday 21st. July. Sergeants Gardiner and Murphy of the County Constabulary, the former of Ashton and the latter of Pemberton, Wigan were in charge of the arrangements at the Coroner's court. Present were Mr. Peter Higson, the Government Inspector for the district, Mr. John Chadwick, the underground manager for Richard Evans & Co., Mr. Isaac Billinge the underlooker of the Haydock Collieries, Mr. Clark, mining engineer for Sir Robert Gerard, Mr. Mercer of Park Lane Collieries and Mr. William Smethurst of Bryn Collieries all of Ashton-in-Makerfield.

The jury consisted of the foreman, Captain E. Browne, Mr. Joseph Gibbons, Mr. Joseph Radcliffe, Mr. James Cunliffe, Mr. William Finney, Mr. George Hewitt, Mr. James Buckley, Mr. Edward Johnson, Mr. John France, Mr Edward Birchall, Mr. James Clark, Mr. John Glover and Mr. Edward Edwardson.

Mr. Driffield opened the proceedings with a speech in which he told the jury that it was their sole duty to inquire into the deaths at the colliery. He said that he had no idea as to the cause of the explosion but he had no doubt that the inquiry would ascertain the cause of the disaster.

Those who died were-

Arnold Baxendale, aged 20 years. A drawer of Park road, Parr who was a single man. His body was found in the Six Foot Mine badly burnt and mutilated.

James Billinge, aged 44 years. A fireman of Gibraltar Row, Newton. Married with no family. He was brother to Isaac the underlooker and was found badly burnt in the Nine Foot Mine.

William Blistone, aged 15 years. Pony driver of Earlestown. He was brought out of the pit alive but died on the cart on his way home.

David Bunney, aged 13 years. A pony driver of Havannah, Parr. Found burnt in the Nine Foot Mine.

John Chadwick, aged 42 years. A married collier of Stone Row, Haydock who was found burnt in the Nine Foot mine. His son, John was also killed in the explosion.

John Chadwick, aged 13 years. A drawer of Stone Row, Haydock found burnt in the Nine Foot Mine.

John Chorley, aged 29 years. A waggoner of Slater's Yard, Haydock who left a wife and one child. He was found burnt in the Nine Foot Mine.

John Crossley, aged 42 years. A single man, drawer of Twenty Eight Row, Haydock. Found burnt in the Nine Foot Mine.

Patrick Diskin, aged 28 years A single collier of Unsworth's Cottages, Haydock. Found in the Six Foot Mine, suffocated.

Thomas Diskin, aged 23 years. A collier of Penny Lane Haydock. Found in the Six Foot Mine suffocated.

James Devine, aged 16 years. A pony driver of Haydock Green. James was licenced to Evans & Co. from the Liverpool Reformatory. He was found suffocated in the Six Foot Mine and identified by Thomas McComb.

John Duckworth, aged 15 years. A drawer of Twenty Eight Row, Haydock, who was single.

Thomas Dyson, aged 15 years A pony driver of Stone Row, Haydock. He was found burnt and mutilated in the Ravenhead Mine.

Joseph Edwards, aged 25 years. A drawer of Clipsley Lane, Haydock who was single. He was identified by Mary Ann Eden, wife of John Eden of Clipsley Lane. He was found burnt in the Nine Foot Mine.

Sylvester Fairclough, aged 40 years. A tunneller of Wigan who was lodging at New Boston. He left a wife and four children and was found suffocated in the Nine Foot Mine.

John Foley, aged 35 years. Collier of New Boston, Haydock. He was found suffocated in the Wigan Six Foot Mine and. He left a wife and four children.

Thomas Foster, aged 36 years He left a wife and two children. He was a collier and was identified by his wife, Mary Ann who lived in Blackbrook, Haydock. His body was found in the Six Foot Mine, suffocated.

Joseph Finney, aged 32 years. A collier of Coal Pit Lane, Haydock who left a wife and four children. He was found in the Nine Foot Mine burnt and mutilated and was . who said that Joseph's brother, James was also killed in the explosion.

James Finney, aged 20 years. A single man, collier of Park Road, Parr. He was found burnt in the Nine Foot Mine and was ..

Thomas Garnett, aged 20 years. A collier of Blackbrook, Haydock who had been married only a few weeks. He was found in the Nine Foot mine burnt and mutilated. David was his brother.

David Garnet, aged 32 years. Collier of Toll Bar, Haydock who left a wife and four children and was found suffocated.

John Garretty, aged 38 years. Collier of Penny Lane, Haydock. he was a widower who left five children. He was found suffocated in the Nine Foot Mine.

□ohn German, aged 13 years. A taker-off of Gibraltar Row, Newton. He was found in the Nine Foot Mine and was badly burnt and mutilated.

Joseph Hall, aged 16 years. A drawer of Stone Row, Haydock and the grandson of Abraham Livesley who was also killed in the explosion. He was found in the Six Foot Mine burnt and mutilated and was ..

John Halsall, aged 51 years. Collier of Haydock Lane married with three children two of which, James and William were killed in the explosion. He was found suffocated in the Six Foot Mine.

James Halsall, aged 13 years. A drawer of Haydock Lane and the son of John. He was found suffocated in the Six Foot Mine.

William Halsall, aged 11 years. Dataller of Haydock lane. Son of John and brother to James. Found burnt near the pit eye.

Richard Harrison, aged 41 years. A collier of Toll Bar, Haydock who left a wife and three children. He was found burnt in the Nine Foot Mine.

James Hatton, aged 16 years. A drawer of Stone Row, Haydock. Brother to William and found suffocated in the Six Foot Mine. Identified by Thomas Reed.

William Hatton, aged 16 years. A pony driver of Stone Row Haydock, Brother to James and found suffocated in the Six Foot Mine. Identified by Thomas Reed.

James Houlton, aged 23 years. A married dataller of Twenty Eight Row, Haydock. Found suffocated in the Six Foot Mine.

David Holding, aged 17 years. A labourer of Haydock. He was found in the Nine Foot Mine burnt and mutilated and identified by Abraham Lowe of Ashton who also worked at the colliery.

Thomas John, aged 21 years. A single drawer who lived at Baines's Row, Haydock. He was found in the Nine Foot Mine burnt and.

Abraham Livesley aged 59 years. A collier of Stone Row, Haydock. He left a wife and eight grown up children. One of his grandsons, Joseph Hall, was also killed in the explosion. He was found suffocated in the Six Foot Mine and.

John Lowe, aged 14 years. A dataller of Town Green Ashton. He was found near the pit eye.

Edward Molyneau, aged 11 years. A pony driver of Blackbrook, Haydock who was identified by Elizabeth Marsh of New Boston, Haydock who was his mother. He was found in the Nine Foot Mine burnt and mutilated.

Thomas Molyneau, aged 50 years. A collier of Park Road, Parr. a widower with two children. He was the father of Thomas aged 15 years.

Thomas Molyneau, aged 15 years. A pony driver of Park Road, Parr, son of Thomas. He was found in the Nine Foot Mine, burnt and was ..

William Moore, aged 45 years. A collier of Twenty Eight Row, Haydock who left a wife and one child.

James Morgan, aged 25 years. A single man who worked as a tunneller and lived in Barnes Row, Haydock. He was found in the Nine Foot Mine, suffocated and.

James Owen, aged 20 years. A single collier of Clipsley Row, Haydock who was identified by Mary Ann Smith as her husband's drawer and her cousin. He was found suffocated in the Six Foot Mine.

Thomas Parr, aged 16 years. A pony driver of Toll Bar, Haydock. He was brother to Henry and was found suffocated in the Six Foot Mine. he was identified by Thomas McComb.

Henry Parr, aged 12 years. A drawer of Toll bar, Haydock and was identified by Aaron Livesley of Stone Row, Haydock who was an engine tender.

Joseph Parfett, aged 25 years. A collier who left a wife and two children. He was found burnt in the Six Foot Mine and identified by Esther Evans with whom he lodged.

Henry Picton, aged 29 years, dataller of Newton Heath. He was found in the Nine Foot Mine badly burnt but he was brought out of the pit alive. He died on the Sunday after the explosion. He was identified by his brother, Thomas a hingemaker of Ashton-in-Makerfield.

James Pilkington, aged 36 years collier of Coal Pit Lane, Haydock who left a wife and six children all under the age of eight. He was found in the Nine Foot Mine and.

John Render aged 27 years, tunneller with two children of Spring Terrace, Haydock. He was found in the six Foot Mine and identified by Esther Lightfoot with whom he lodged.

Peter Roscoe, aged 32 years collier of Toll Bar Haydock who left a wife and four children. He was found in the Six Foot Mine, suffocated.

Thomas Russell, aged 30 years collier of Toll Bar, Haydock with two children who was found burnt and mutilated in the Nine Foot Mine.

Thomas Seddon, aged 45 years collier of New Boston, Haydock who left a wife and three children. He was found in the Six Foot Mine and was identified by Thomas Lee with whom he was working at the time of the explosion.

Henry Smith, aged 26 years. He left a widow and two children. A collier of Park Road, Parr who was.

Mathew Southern, aged 41 years, collier of Clipsley row, Haydock, married with seven children. Robert was one of those children. he was found in the Six Foot Mine, suffocated.

Robert Southern, aged 18 years, dataller of Clipsley Row, Haydock, son of Mathew. he was found in the Six Foot Mine, suffocated.

John Topping, aged 53 years. A tunneller of Chapel Lane, Wigan who was lodging in New Boston, Haydock. He was a widower with two children and was found suffocated in the Nine Foot Mine.

James Westhead, aged 11 years. A pony driver of Twenty Eight Row, Haydock who was found burnt in the Nine Foot Mine. He was identified by his brother, William.

Ralph Wilcock, aged 25 years. A collier of Haydock. A single man who was found suffocated in the Six foot Mine.

William Winstanley, aged 42 years. A collier of Twenty Eight Row, Haydock who left a wife and three children. he was found in the Nine Foot Mine burnt and mutilated and was.

William Yates. A fireman of Haydock. He was rescued from the mine and was badly burnt and injured. He was identified by Jane Prescott of Spring Terrace, Haydock. She said that she had heard him ask where the gas had fired and it was her opinion that he did not know.

Relief of the victim's families relied on public subscription and, as there had been several disasters in the district about this time, the difficulties in raising money for yet another were voiced in the press. There had been an explosion at the Hindley Green Colliery, at the Norley Collieries just outside Wigan and at the Rainford Colliery near St. Helens where three men had been killed and four injured.

Richard Evans & Co. provided the families with coffins and a Fund for the Relief of the Victims Dependents was opened with a donation of £800 from the Company. Mr. Legh M.P. and Sir Robert Gerard each donated the sum of £200 and donations came from people of standing in the district and from local firms. The workers of the Haydock Collieries collected £456-6-0d. over two months and the subscription list published in the St. Helens Newspaper dated 2nd. January, 1869 shows that a total of £1717-0-0d. had been raised.

At meeting held in Haydock in January, the subscribers expressed a desire that the funds that had been collected for the various disasters should be amalgamated. To this

end there was a meeting of the people concerned with the administration of the funds at the Quarter Sessions Court in Wigan. The Mayor of Wigan was in the chair and heard that the Hindley Green Fund stood at £2,480 and together with the funds from the Rainford and the Haydock disasters, a considerable sum had been accumulated,

At this meeting it was resolved that the Local Disaster Committees should be instructed to put their funds together and it should be shared for the relief of the families of all the victims of these explosions. It was also resolved that the scales of relief should not exceed in any case the maximum for widows of five shillings a week until death or marriage and for children three shillings a week until the age of fourteen. The Local Committee should look at each individual case and agree the amount of relief with the dependants.

The inquest into the disaster was held at the Rams Head Hotel, Haydock and many of the tensions that the two disasters following each other so closely, had caused came to the surface.

There was a reluctance of witnesses coming forward from the workmen to give their evidence as it was thought that Hugh Arnold, the only survivor of the explosion the previous December, had been victimised by the Company.

The whole question of getting coal by blasting it down by gunpowder was examined and Mr. Higson related, that the colliery owners had not responded to a circular he had sent them on the subject. Joseph Dickinson, the Inspector for Manchester was very much against blasting to get coal but the coal in this seam was very hard and a mining engineer put forward the point of view that hard coal like this should be left until there was the technology to mine it safely.

The atmosphere in the room was sometimes electric and always strained. The Coroner's authority was questioned and Mr. Higson displayed signs of strain. The Coroner made his summing up and the jury returned the following verdict-

"We find that Joseph Edwards and the fifty eight others came to their deaths from an explosion occurring in the Nine Foot Mine at the Queen Pit, Haydock on 21st. July, 1869 last and that the explosion was of firedamp caused by a shot igniting the gas brought up by a fall in Pilkington's place and we are also of the opinion that the explosion was aggravated and the loss of life considerably increased by the quantities of gunpowder in the mine. We further find that if proper care had been taken to remove the gas in the cavity this fall, the explosion would not have taken place. We recommend that the coal should be got in that manner spoken of by Mr. Dickenson, that is, cutting on one side and that further blasting operations shall be carried out at night in the absence of the workmen. We also consider it objectionable for the Nine Foot air to be returned through the Six Foot workings."

The Coroner asked directly if they thought the explosion was '*a point of accident*?' and the Foreman said that the jury did not wish to have the words 'unexpected or accidental' in the verdict.

The proceedings prompted many reactions in the Press both National and Local the '*Times*' thought the verdict threw a serious reflection on the men who were responsible for the mine and that if the jury had been prepared to say that there was neglect, then criminal proceedings would have been taken against those who were thought to be responsible.

NEWBURY. Westbury, Somersetshire, 22nd. October, 1869.

The colliery was the property of the Westbury Iron Company and was about six miles from Frome in the Mendip Hills of Somerset and an explosion claimed seven lives. The disaster took place on the 'Mackintosh' side of the pit.

The ventilation of the pit was provided by a furnace and the air went down the Newbury downcast shaft, straggled and struggled through narrow roadways and made its way to the surface up the Mackintosh shaft and the air travelled about 800 yards underground. At the time of the explosion there were 'branches' or stone drifts being made and no coal

was got near the bottom of the staple and in the colliery as whole there was not much coal getting but the coal was got at the end of a very long travel and the air had to travel through very narrow roads for many hundreds of yards.

At the time, the men were descending for the days work but not all had gone down. The first indication of the accident was a very loud report which was heard miles away and smoke and dust came from the upcast shaft. The many persons rushed to the pit including wives and children.

Mr. Baker , the bailiff of the pit, with Mr. Coles, the lamp man, at once descended the, downcast shaft. When they reached the bbottom, they found an explosion had occurred and going along the main level from the furnace they came across the body of an behind a pillar who had just started work and there was every indication that the gas had ignited there. There were six or seven men quite dead who were fearfully burnt. One had been blown into the sump hole from the level. Two of the unfortunate men had just got out of the cage when the blast hit them and they were hurled a considerable distance. The bodies were removed to the surface and agonised scenes took place as relatives recognised their loved ones.

Those who died were-

John Coles aged 50 years who left a wife and three children,
James Button who left a wife and eight children,
Arthur Button aged 22 years left a wife and child,
William Edwards aged 20 years,
Farnham Gurney aged 43 years left a wife and five children,
John Plummer and
James Francis.

Those who were injured were-

John Button, son of James who was badly burned,
Eli Plummer who was burnt and had a broken thigh,
William Hancock and
another unmamed man.

The was no fund for the relief of the sufferes and the colliery owners paid for the funerals of the victims.

The inquest was opened on Saturday at the Anchor Inn, Coleford before Mr. Wytrants M. D. Coroner for the north east division of the County of Somerset.

John Steeds, miner, said -

“I had just gone down the pit when I heard the explosion and I went to the shaft as quickly as possible. I called out but got no answer and I got a light at the furnace when a man came uo behind me. We found young George Plummer burnt and almost dead as were Button and Hancock. James Button, fireman and James Francis were dead.”

Of the twelve men who went down the pit that morning, eleven were injured and of those, six lost their lives. Some were brought out of the pit and died shortly afterwards and some lingered many days before They passed away suffering terribly from burns, contusions and the effects of the afterdamp and from the amount of dust blown up.

The Inspector commented-

“Pulverent matter is a serious import to the coal miner at all times, even in the absence of explosion, and under the most favourable conditions of good management it affects his digestive organs seriously it enters his lungs, and too often becomes the nucleus of disease. Professor Tyndale has shown by a beam of light what we inhale on the surface, but that is nothing to the mass of organic and inorganic particles met with in colliery roads and working places. By explosive action

theses become an actual proportion of the underground atmosphere, and the result is too often most painful suffering and death.”

Mr. Brough went down the pit and in his opinion the explosion originated in Gunning's place where he found the coalface was about seven feet wide and eighteen feet beyond the end of the brattice and he was informed by Hamblin, the under bailiff, that before the disaster the brattice cloth was thirteen feet back from the face and that the explosion had stripped off the other five feet. He found some gas but not much and at the inquiry several witnesses stated that there was gas present before the explosion

Besides Gunning's place there was another place further down where Curtis worked and again the inspector found gas in this place. The first general rule was not obeyed and the Inspector heard evidence from several witnesses that supported this view.

The Inspector commented that certain rules had been neglected and that if they had been obeyed, the lives may have been saved. The pit was only examined on Mondays and if the pit had been examined on the morning of the explosion the disaster might have been avoided.

As a result of the evidence the jury brought in a verdict of manslaughter against William Baker, Abraham Hamblin and John Bainton. They were committed to appear at the Somerset Assizes at Taunton.

HENDREFORGAN. Swansea Valley, Glamorganshire. 11th. November 1869.

The colliery was the property of Mr. Alexander Bain and was in the Parish of Ystradqunarlis in the Swansea Valley. On the morning of the disaster thirteen men and boys went to work and had only just begun when an explosion was heard. A vast number of people gathered round the pit head. It was feared that all had lost their lives and a party was organised and a search made. In a short time three men were brought up exhausted. Four others were subsequently rescued and five bodies brought to the surface.

All work in the valley was suspended and the explosion caused a sensation as there had not been an explosion in the valley for a large number of years and the anthracite coal that was worked at the colliery did not give off gas.

The colliery had a sloping engine plane or 'bully', dipping at 12 to 20 inches to the yard, 400 yards long which intersected six or seven coal seams. The colliery worked the Little Vein, the Big Vein and the Brass Vein seams and the explosion occurred in the latter.

The colliery was worked for the most part with open lamps and it was ventilated by a furnace at the bottom of the upcast shaft which passed only 3,600 cubic feet of air per minute round the workings. A few days before the explosion the ventilation of the colliery had been changed and a stopping was not placed and the same air ventilated the three workings in succession and did not have a separate system for each.

All the victims were listed as colliers.

Richard Nicholas aged 36 years who left a wife and six children,

William Hopkins aged 30 years who left a wife and two children,

Thomas Evan Jones aged 25 years,

David J. Davies aged 20 years,

David Jones aged 19 years and

Samuel Arthur aged 11 years who was probably a drawer or worked on the haulage.

The inquest was held before Mr. Edward Strick, Coroner at the Ystalyfera Hotel and was complicated since some of the victims lived in Carmarthenshire and some in Glamorganshire. The jury was sworn and viewed three bodies on which the inquest was held.

Evidence was given that there had been no gas seen in the mine which worked the Brass Vein and Big Vein Seams. Samuel Jones had worked at the colliery since 1871

and was one of the survivors. He heard the explosion and he went to leave the pit. Thomas Jones was waiting for him and asked for a light. He lifted his lamp to the roof to test for gas and finding none, opened it and gave Jones a light. They went to the bottom of the drift where they heard people calling for a light. He answered and said that would come as soon as he could. They went on and found William Hopkins near the shaft bottom with his clothes blown to rags. David Evans joined them and went ahead. Jones went on slowly leaving Hopkins who was unable to walk. He was followed by Samuel Arthur, David Jones and Thomas Jones. They found David Davies caught in some timber with his clothes burned off him and released him. William Hopkins was crawling on his hands and knees. Samuel then found that there was gas in the pit and it put out his lamp and he went on alone telling the others to wait. As he felt his way along, he thought he was getting drunk but was being affected by the gas but he managed to get to the mouth of the drift and found David Evans who had got out and the engineman was putting oil on his burns. They went to the overman, Enoch Howell and in the company of others, they went into the drift. On the way they met William Hopkins and his brother coming up. Jones found the gas almost suffocating him and as soon as they returned they were helped by others.

At the inquest into the deaths of the men the jury returned a verdict of 'Accidental Death' and recommended that the coroner severely reprimand Mr. Alexander Bain for entrusting the management of the colliery to an incompetent person.

Mr. Wales, the Inspector commented-

"In my opinion the quantity of air was much too small for the proper and safe ventilation of the colliery and its distribution or application was most defective so much so that the gas in the old workings was allowed to pass onto the bully where doubtless it came into contact with a naked light and caused the explosion."

After the jury had returned their verdict and recommendations Mr. Wales said-

"I will strongly recommend that the colliery at once be placed under the care of an experienced mining engineer that the quantity of air be increased to 12,000 or 15,000 feet per minute and that the workings in each vein of coal be supplied with a fresh current of air to each."

LOW HALL. Wigan, Lancashire. 15th. November, 1869.

The colliery was the property of the Moss Hall Company, Platt Bridge near Wigan. and an explosion which caused the deaths of twenty seven persons and set the colliery on fire. The colliery was managed by one of the Company directors above ground and an underlooker below ground. The No.5 Pit was in Hindley, about 150 yards from the Platt Bridge Station on the Eccles, Tyldesley and Wigan Railway. Close by, was the No.6 shaft which was the downcast to the three seams that were worked, The Wigan Five Feet, The Wigan Four Feet and the Six or Nine feet as it is sometimes called, this at 275 yards from the surface, worked by straight work and it was in this seam that the explosion occurred. In no place were the workings more than 350 yards from the pit eye. The colliery was a new one opened two years before and work on the engines at No.6 shaft had not been completed so all the winding was done at the upcast shaft.

In the preceding years, it was reported that many hamlets had sprung up in the area. About 4 p.m. on the day of the disaster, the residents of number of cottages were startled by a loud report which was described like the discharge of heavy artillery and dust and a dense cloud of smoke came from No. 5 Pit and soot fell from the sky up to a mile and a half away.

The pit officials lived in cottages close by and were quickly on the scene. They found that a very great deal of damage had been done to the No. 5 shaft and the cage was badly mangled. A pulley was set up over the No. 6 Pit and after the guide rods had been removed, a descent by the explorers was possible.

Help had arrived from other collieries nearby and Mr. Clark, the underground manager of Strangeways Hall Colliery, Mr. Howarth of Crompton and Shawcross and John Higson, son of the Inspector of Mines for the district organised a party to go into the workings. They arrived at the bottom of the shaft to find two bodies at the mouthing. The man had died from the concussion of the explosion.

A great crowd assembled at the pit bank and there were many fires to be seen as the crowd waited patiently for news of their loved ones as the men explored the workings. A man named Sharratt travelled 200 yards from the pit eye and encountered chokedamp and the party returned to the surface.

Mr. Peter Higson the Inspector, arrived at the colliery and was conducting a conference with mining engineers when a man named Green, a fireman, came to the surface and informed the men that the coal was on fire. There was not enough nearby water to flood the pit and it was decided to fill the shafts and try to starve the fire of air.

The Rivington aqueduct, which supplied Liverpool with water, passed close to the colliery and a message was sent to Liverpool Corporation seeking permission to tap into it to flood the workings. A telegram granting permission, arrived at 1 p.m. and the pipe was tapped into under the supervision of officials from the Water Company. The dead that had been found were the from the pit and taken to an untenanted farm house nearby, Low Hall, which was used as a temporary mortuary.

The seat of the explosion was in a place where a shot had blown out and the Inspector commented that the explosion was a surprise as the ventilation was so very good but it was supposed that the liberated gas was carried by the ventilation and ignited at a naked flame of one who was working. Whether the gas was an accumulation or a sudden outburst was not known but the fireman had inspected the area just before the explosion and pronounced it safe.

The shot lighter was found dead in a place where he would have retreated for safety. The Inspector commented that if the place had been carefully examined then the calamity might not have been so great if the gas had been found.

Those who died and were recovered immediately after the disaster were-

William Goulding aged 14 years.

Peter Simm aged 16 years, drawer.

William Seddon aged 20 years, dataller.

John Ormishaw aged 23 years, fireman.

James Winstanley aged 14 years, jigger.

Henry Wood aged 17 years, dataller.

Robert Walls aged 15 years, runner-in.

Richard Hilton aged 32 years married with four children.

Richard Monks, drawer was badly injured and not expected to recover.

Those whose bodies were recovered later were-

Samuel Simm, drawer.

John Fairhurst, collier.

Peter Fairhurst, John's son.

Luke (?), drawer.

Albert Duxbury, collier.

Cain Hart, collier.

Thomas Pimblett, collier.

James Slater, drawer.

George Harrison, collier.

Peter Dickson, collier.

William Oliver, collier.

James Hampson, drawer.

Peter Bolton, collier.

Henry Foster, drawer.
William Hampson, drawer.
William Ridyard, jigger.
William Hurst.
John Bennett.

The inquest was held in the Victoria Inn, Platt Bridge by the County Coroner, Mr. Driffield. The inquest could not be concluded until the pit was clear of the water and this took some time.

From *'The Colliery Guardian'*. 3rd. December, 1869-

"At the adjourned inquest at the Victoria Inn, Platt Bridge The jury heard of the death of Richard Monks which had taken place since the last session. His widow was called and gave the evidence of identification. Mr. Caldwell the proprietor of the colliery said it would take two to three weeks to get the water out of the mine and it had been lowered by only six feet and they had 30 yards to go. Mr. Higson was satisfied and the inquest was adjourned for two weeks."

From *'The Colliery Guardian'*. 10th. December, 1869-

"The winding of water continued in the No.5 shaft and a tank that held 351 gallons and No.5 with two buckets each holding 200 gallons but one caught in the shaft at the Four Feet mouthing on the conducting rods that were broken the explosion. It was decided to continue winding at No. 3 and 100 gallons in 5 minutes or 12,000 gallons per hour were being raised. It is hardly possible that the bodies will be got out before the resumption of the inquest."

From *'The Colliery Guardian'*. 17th. December, 1869-

Winding of water was going slowly and the inquest was adjourned for another week.

From *'The Colliery Guardian'*. 24th. December 1869-

"Twenty seven deaths in the explosion and the water was then reported at the floor. No.5 stopped as the tank could no longer reach the water and the proceedings were adjourned for another week. '

From *'The Colliery Guardian'*. 18th March, 1870-

"The inquest was resumed and the identification of the bodies carried out. They were William Oliver aged 26 years, collier of Hindley who left a wife and two children, John Hampson aged 22 years of Platt Bridge a drawer married with one child. It was feared that they would not be found because they were in the area where the coal caught fire. They were brought to the surface for identification and burial.'

The jury returned the following verdict_

"The jury find that John Ormsher and the twenty seven others died by an explosion of gas in the Six Feet seam caused by a blown out shot in No.5 level but how the gas originated we have difficulty in ascertain.

We are of the opinion that there was a sudden outburst in the immediate district.

We recommend in future no shot shall be fired in the Six Feet seam at this colliery unless charged by or in the presence of with the assent of the fireman or shotlighter.

We find no blame attached to any quarter."