

ROTHWELL HAIGH. Victoria Pit. Leeds, Yorkshire. 24th. January, 1840.

The pit was originally called the Garden Pit but the name was changed to commemorate the Queen's accession. In the explosion and seven workmen, two men and five lads were killed. They had been provided with safety lamps but were using candles.

Men were taking away props which supported the top end and it was thought that gas had accumulated in the space. Near by men were getting coal. The props were set in rows and the furthest props were taken first causing the roof to fall and fill the space to the props that were left standing. On this occasion the roof had not fallen for a considerable distance. When the roof did eventually fall, large volumes of dust were raised so the men could not see each other and all the candles were extinguished with the exception of one held by Samuel Worth. The gas ignited at this candle.

Those who died were:-

Thomas Hopton aged 52 years.

Edward Bell aged 12 years.

George Lister aged 19 years.

Samuel Ward aged 9 years.

John Worth aged 15 years.

William Worth aged 13 years.

Samuel Worth aged about 40 years and father of William and John. He left a wife and six children.

When the gas exploded, it set fire to the pillars of coal which supported the top and caused a fall 120 yards long. Though it was hazardous, the men dug a burgate to try to find Samuel Worth's body but he was not found. It was thought it had been 'calcined to a cinder.'

MOSTYN. Mostyn, Flintshire. July, 1840.

The shaft was 390 feet deep and when the pit fired, large lumps of coal were blown up the shaft. Eight were killed in the explosion and one man and a boy were brought out fearfully burnt. Eleven lost their lives and five others were seriously injured. The disaster left six widows and thirty children fatherless.

St. DAVID'S PIT. Llangennech. Llanelli, Glamorganshire. 6th. July, 1840.

The pit was 660 feet deep and was the largest and deepest in the district. Two men and three boys were killed in an explosion at the colliery and twenty six others injured. Some accounts give the death toll as four but it is probable that some of the injured later died. The men were killed by the afterdamp when they stayed in the workings after the blast. and the gas accumulated while the men were eating. The jury returned a verdict of 'Accidental Death' and did not attach blame to any party.

FARNACRES. Farnacres, Durham. 23rd. October, 1840.

The Wheels Pit, Farnacres Colliery, Dunston, near Gateshead. a rush of water filled the pit in the morning of the 23rd. shortly after midnight, when five men were engaged in the workings. The colliery had not been working for long and on the morning of disaster, the banksman heard a noise like thunder and filled that shaft was completely filled with water which had reached the top and was overflowing.

The pit was twenty one fathoms deep and all efforts of the fifty horsepower pump to lower the level was to no avail. Greater pumping power was arranged and it was reported that level of water was dropping.

Five men died:-

All men in the mine were killed:-

James Rankin, sinker aged 40 years, left a wife and six children.

James Heslop, sinker aged 40 years, left a wife and child.

William Wilkinson aged 28 years, widower with one child.

William Weatherby, aged 25 years, single.

Andrew Evans aged 25 years, single.

Wilkinson's body came to the surface of the water when it had been reduced several fathoms below the top of the shaft.

The inquest was held before Michael Hall, Esq., at Mr. Thoburn's, the Frame public house near the pit to which the body had been removed. The following were sworn on the jury, Mr. John Thompson (foreman) and Messrs. Thomas Thompson, Joseph Blenkinsopp, George Grey, John Young, Allison Bell, Robert Surtees, William Hunt, Robert Dodds, John Fawcett, Robert Thoburn and John Stokoe.

Two witnesses only were examined, Thomas Wetherby, of Low Bensham, the overseer of the colliery, and Thomas Dobinson, one of the pitmen.

Thomas Wetherby, examined by the Coroner, deposed that he was last in the pit at 3 o'clock in the afternoon of Oct. 22nd. when the pit was in a proper state and all persons employed in the workings thought themselves as safe as at their own homes. There were five men down and at four o'clock, when they came to bank, they reported the pit to be perfectly safe, so far as they could tell. Five other men went down at four, and remained till ten when they were replaced by the five now dead, one of whom was witness's son. Shortly after 12 o'clock in the morning of the 21st, word was brought that the pit was filled with water and he went down to the pit mouth. It was then nearly full but did not run over till four or five hours afterwards. He could not tell the cause of the accident. The pit appeared to him perfectly safe. He had heard that the colliery was worked 80 or 90 years before.

Mr. Forster, the underviewer) stated that his instructions were, that no expense was to be spared to protect the lives of the workmen under his charge the pit was to be kept safe at whatever cost and the day before the accident the pit was drier than he had ever known it before. There had never been a flow of water previously. He had two sons engaged in the pit and would not have exposed them to peril, if he had known of it.

Thomas Dobinson deposed that he was down the pit with four others, from 4 o'clock to 10 at night on the 22nd. The pit was then in a good working state, there was no apparent danger. At 10 o'clock, they were relieved by the men now dead. Not long after midnight, he heard of the accident, and came to the pit. It was full of water and the five men were drowned. He believed the water had burst from the sides of the shaft but he could give no reason for thinking so. He saw Wilkinson's body brought the bank on Thursday night.

Mr. Forster concluded by stating the cause of the accident, which he had now clearly ascertained. Shortly after the accident four old pit shafts in the immediate vicinity presented themselves to view, the existence of which was previously unknown to any persons now living. They had been scaffolded over and covered with earth and when the water was withdrawn, the scaffolding had fallen in. From one of these pits, he had no doubt that the second seam of coal, fourteen fathoms down had been wrought. The seam which had been wrought in the Wheels Pit was the third and in sinking the shaft neither the first nor the second seam appeared to have been worked. The first was definitely unworked but it was now evident that the

second seam had been worked a long time ago and he had no doubt that in sinking the shaft they had passed through a pillar of coal in the second seam and the fact that it had been previously worked was not apparent. The water accumulated in the old workings had burst through the remains of the pillar into the shaft. Unfortunately there were no records of the old workings.

The jury returned a verdict of 'Accidental Death'. The accident showed a necessity for the registration of plans.

QUARTER. Hamilton Fifeshire. 16th. March, 1841.

Eleven lost their lives including four men who went to the rescue. The cause was thought to have been caused by a sudden outburst of gas from a fault.

BIGGES PIT. Willington, Northumberland. 19th. April, 1841.

There was an accident reported at the colliery which claimed thirty two lives. An explosion occurred at about two o'clock in the Besham seam. At the time of the explosion it was raining and a very strong wind was blowing and the force of the explosion shook the earth like an earthquake and the noise like that of a cannon with smoke rushing from the pit mouth that blacked out the daylight. There were only three survivors of those down the pit. These three were working in a stone drift in another part of the mine. Two or three of the victims were brought to the surface alive but all later died.

Those who died were:-

Thomas Wood aged 38 years who left a wife and six children.

Michael Martin aged 36 years, who left a wife and four children.

William Martin aged 10 years, son of Michael.

John Campbell, unmarried.

George Campbell aged 20 years, recently married. The Martins and the Campbells were related.

Thomas Dodshon, a young man recently married.

William Dodshon, brother of Thomas.

Jonathan Crosier aged 51 years, unmarried.

John Joyce aged 21 years, unmarried.

William Howe aged 22 years, who left a wife and two children.

Robert Brown aged 20 years, unmarried.

George Martin aged 21 years, unmarried.

William Coxon, widower, who left one child.

Joseph Johnston aged 26 years, unmarried.

Thomas Bainbridge aged 19 years, unmarried.

W. Bainbridge aged 9 years, brother of Thomas.

Simpson Mason aged 9 years.

T. Bolton aged 9 years.

J. Liddell aged 16 years.

T. Pearson aged 15 years.

R. Pearson aged 9 years, brother of above.

J. Pearson aged 20 years. unmarried.

J. Reed aged 18 years, unmarried.

R. Black aged 15 years.

J. Crawford aged 20 years, unmarried.

R. Cooper aged 10 years.

M. Ranson aged 16 years.

J. Hall aged 18 years, unmarried.
J. Brown aged 9 years.
R. Campbell aged 14 years.
J. Crosby aged 18 years., unmarried.
George Scott aged 18 years, unmarried.

At the inquest into the disaster Thomas Campbell, deputy viewer of the colliery stated:-

“I have been employed in the Bersham seam, Bigge pit for the last three months. I was accustomed to go down every day and remained down for seven hours. On the morning of the explosion the men complained of being cold. That was an indication that the air was good and the pit safe. The pitmen used candles. The pit was a considered safe. The explosion had originated at the main door in the middle of three occasioned by the neglect of it. The trap doors are made to shut by themselves, the current of air passing upon them, that is, they open against the current of air. I am further of the opinion that the accident happened as I have stated, from the body of the boy, the trapper, Cooper, being found at a place he could not have been forced by the explosion and who must, in all probability, gone there to play with two other boys, who had also charge of trap doors near to where he was found, add one of whom was found close to him. My son had come through the supposed deserted trap door, to put some coals from the board where the explosion took place. The consequence of that door being left open would be the accumulation of the gas in the middle and northwards boards, from the total absence of the proper current of air which would have passed through them had the door been kept shut.”

Several other witness were of the same opinion and the jury returned a verdict of ‘Accidental Death from the explosion of hydrogen gas.’

THORNLEY. Thornley, Durham. 5th. August, 1841.

Mr. Wood was one of the owners of the Thornley Colliery and one of his viewers gave an account of the explosion which occurred there. The explosion took place at about 4.14 p.m. in the north west district of the Harvey Seam ‘A’ Pit and was caused by an accumulation of gas in the third board past the waggon bord which had accumulated by a trap door being left open by a trapper by, Robert Gardener, who was under nine years of age. The gas was ignited by a naked candle. There was downcast shaft at the colliery and the upcast was a staple from the Hutton Seam which was 21 fathoms above the Harvey and 145 fathoms below the surface.

Those who died where-

Peter Graydon, aged 11 years, a driver.
George Ord aged 17 years, a flatman.
Thomas Haswell aged 42 years, a hewer.
Robert Gardiner aged 9 years, a trapper.
Thomas Hall aged 18 years, a putter.
John Graham aged 15 years, a half marrow.
George Graham aged 17 years, a half marrow.
John Armstrong aged 15 years, a putter.
John Gardner aged 16 years, a putter.

Those who were injured-
George Crozier, way-cleaner.
James Maudlin, an overman.
Thomas Pyle, a trapper was lamed.
All the dead were buried at Kelloe.

Those who escaped were:-
John Humble, trapper.
J. Wilson, trapper.
W. Willis, trapper.
George Gillings, a driver.
Andrew Benes, water leader.
W. Woolcott, water leader.
George Morgan, shifter.
Thomas Atkinson, shifters.
R. Palmer, putter.
Thomas Welsh, putter.
W. Eltringham, putter.

On the arrival of Mr. Seymore of Wingate Grange, the head viewer, about two hours after the disaster, he and Mr. Hackles started an investigation as to the cause of the blast. It was soon apparent that a door kept by Robert Gardiner, one of the boys killed, had remained open for too long, allowing gas to accumulate and ignited at his candle.

At the inquest at the Thornley Colliery Inn the jury returned a verdict that the deceased had met their deaths from an explosion of gas and that no blame could be attached to the colliery management.

BRIETWHISTLE. Dewsbury, Yorkshire. 19th. October, 1841.

Five were killed in an explosion. There was no satisfactory explanation but it was thought to have been caused by the greasy state of one the men's lamps. The ventilation at the colliery was described as 'strong.'

MOUNT OSBORNE. Barnsley, Yorkshire. 21st. or 22nd. November, 1841.

The colliery was the property of Day and Twibble. A man was working in one of the working roads when a steward prohibited him from working there and sent him to another part of the mine. The man returned for his tools and went into the place with a naked light. An explosion occurred at the colliery about 6 a.m. when four miners and eleven hurriers were killed. A man named Edward Walton also lost his life while he was ascending the shaft in a corve but two other boys who were descending escaped with their lives. The foreman of the works named Mitchell was suffocated during the rescue operations.

BLACK MINE Flowery Field. Hyde, Cheshire. 8th. April, 1842.

FLOWERY FIELD, Hyde, Cheshire. 15th April 1842.

The colliery was the property of Messrs. Swyre and Lees and was in Newton, near Hyde and employed about fifty or sixty men and boys. The mine was entered by a shaft about 160 yards deep and at the bottom there was a tramway or inclined plane over 300 yards long up which the wagons of coal were drawn by a steam engine worked in the mine. At the end of the tramway there was a landing place or

level of about 10 yards. From here there was another tramway up an inclined plane about 300 yards long at the end of which there was another landing place. The coal was drawn from parts of the mine to this place by mules and then attached to an endless chain and then to the shaft bottom. Another tunnel went from the pit eye for 800 yards level. The place where the accident occurred was on this level about 200 yards from the extreme end of the pit.

At about eleven o'clock the banks man heard a terrible rumbling and saw flames appeared from the mouth of the pit. The alarm spread and rescue teams of volunteers were quickly on the scene as was a large crowd of distressed mother, wives and relations. It was known that there were twenty six persons in the pit and that an explosion had taken place.

Mr. F Tinkler and Mr. Potter, surgeons arrived to give what help they could but it was several hours before it was deemed safe to go down the pit. The underlooker descended and after a protracted an dangerous search he and his party succeeded in finding eight of the missing colliers. All were however dead, some bruised, some suffocated and other much bruised. Shortly afterwards another seven bodies were located and all were taken to the pit head.

The search continued and after about an hour the remaining ten were discovered at the extreme end of the mine where they had run for safety. Bowker and Grimshaw were alive but in a desperate state. Bowker died soon after he was found and Grimshaw expired in the arms of a fellow workman but four of the weight recovered and made their way to the pit.

Those who died were:-

Samuel Derbyshire aged 17 years, son of the head banksman who died from suffocation.

John Wild aged 40 years, collier who was shoeing a mule in the stables at the time of the explosion and was killed when the roof fell on him.

William Williams aged 17 years, killed by afterdamp.

Robert Unwin aged 20 years.

James Oldfield aged 13 years., eldest of six children who was scorched and bruised.

John Brookshaw, alias Lees aged 14 years, burnt and suffocated.

Thomas Williams aged 15 years, showed only a slight injury to his forehead.

Robert Downing aged 16 years., taken from the pit alive and died in Manchester Infirmary twelve hours later.

William Wragg aged 18 years, eldest of nine children.

John Aspinall aged 44 years, collier.

John Aspinall aged 18 years, collier.

Adam Gill aged 41 years, collier, left a widow and four children, the eldest 11 years and the youngest 8 years.

John Hardy aged 33 years, collier.

William Bowker aged 17 years, eldest of nine children.

John Bowker aged 47 years., collier, left a widow and eight children and was found not much disfigured.

Henry Lees aged 15 years.

William Grimshaw aged 45 years, left a widow and one child.

Those who were taken from the pit injured were:-

Joseph Moday.

Henry Bradshaw.

William Hurst.

James Dunk.

Robert Merrick.
Thomas Merrick.
Joseph Merrick.

The inquest heard from men who were in the pit at the time of the explosion and the jury returned a verdict that:-
"We all agree that the accident was accidental death with no blame to anyone."

FARNACRES. Gateshead, Northumberland. 9th. December, 1842.

The colliery was inundated with the loss of five lives. This reference appears in Galloway but it may be consued with an accident through an inundation which occured at Fenwick colliery near Belford in which two men lost their lives.

STORMONT MAIN. Wreckington, Durham, 5th. April, 1843.

The colliery was known as the Wreckington, King Pit and there had been foul air in the pit for some days and the men had been advised to take extreme care. The colliery was the property of John Grace. A man left the pit half an hour before the explosion saying that his life was in danger. There were about fifty men in the pit at the time and only twenty six were brought out alive of which four died from their injuries. The explosion was said to be slight but claimed the lives of twenty eight, sixteen men and twelve boys and caused serious injury to seven others. It was thought that gas in a working place had been ignited by a candle as some one passed the place.

Those who died were:-

Matthias Gray aged 20 years the son of the Felling underviewer.
Thomas Charlton aged 25 years, overman left a wife and two children.
Robert Spence aged 34 years, deputy overman.
Thomas Hedley aged 32 years, hewer left a wife and three children.
Humphrey Ditchburn aged 58 years, hewer left a wife.
George Ditchburn aged 21 years, hewer, son of Humphrey and left a wife.
Michael Cleghorn aged 30 years, hewer left a wife and two children
Thomas Cleghorn, his brother aged 28 years a single hewer.
John Robson aged 28 years, hewer who left a wife and three children.
Edward Robson aged 23 years a single hewer.
Thomas Moulters aged 31 years, shifter who left a wife and two children.
John Jacques aged 21 years, single hewer.
James Waters aged 20 years, hewer who left a wife.
John Richardson aged 26 years. hewer left a wife.
James Young aged 29 years, hewer who left a wife and four children. This was the first time he had been down the pit.

The following were drivers and putters:-

David Kidman aged 14 years.
John Kidman aged 10 years, brother of David.
Matthew Doxford aged 19 years.
Thomas Dixon aged 16 years.
John Dixon aged 12 years, brother of Thomas
George Felton aged 13 years.
John Young aged 12 years.

John Tulip aged 15 years.
John Smith aged 14 years.
Abraham Field aged 12 years.
Hugh Hughes aged 11 years.
Thomas Morris aged 16 years.

The inquest was held at the Half Moon Inn, Wreckington. Several pitmen were examined. George Ritchie stated that he had been down the pit on Wednesday morning and had remained there until seven o'clock. He had been cautioned by the deputy overman to put out his light as he passed a board in the west district. He went to the board where James Young was working but as the air was foul. He remained there only a quarter of an hour. He told the court that this foulness had been standing in the board for two mornings.

John Burns said that he was down the pit on Tuesday morning and had been in the company of George Ditchburn and found that the air in their board was foul and they could not stay. He went the next morning and the danger had been removed.

The jury heard from many more witnesses but no light was thrown on the cause of the disaster and it was concluded that every device had been made by the owner for the ventilation and the safety of the men. The jury recorded a verdict of accidental death.

CLEVELAND. Staffordshire. June, 1843.

Seven were killed in an explosion caused by a naked light.

GREENFIELDS ASH PIT. Broadfield, Staffordshire. 26th. June, 1843.

The colliery was the property of the Broadfield Colliery Company and was near Fenton. The men used candles and there had been two previous explosions at the colliery since April but there had been no fatalities.

On the day of the disaster twenty seven men and boys were working and at the end of the day's work, some were making their way to the shaft when the explosion took place about 500 yards from the shaft bottom. Seven men were still in the workings and they all lost their lives. It was thought that one of the men, James Dawson, went into the mine to fetch some tools and powder with a naked candle in his hand and was returning when he met the five men who had finished their work. One of the five was James Smith, the underlooker. He closed a 'wall' to enable work to go on in another part of the mine the following day which was supposed to have driven gas onto the naked candle. Two other men who were working in the mine died from the effects of afterdamp. They were Samuel Thornton and Alfred Tompkinson.

Those who died were:-

John Smith aged 36 years of Fenton who left a wife and two children.

James Dawson aged 33 years of Fenton who left a wife and four children the last one being born the Saturday before the disaster.

Jacob Tipton of Fenton aged 11 years.

Samuel Thornton aged 35 years of Fenton who left seven children and a wife who was not living with him.

Alfred Tomkinson aged 18 years, of Fenton, single.

Peter Bolderstone aged 36 years of Longton, widower with three children.

William Shone aged 22 years, married but no family.

William Baker aged 23 years of Longton, single.

Moses Heath of Fenton aged 16 years.

The inquest into the disaster was held at the Canning Inn, Fenton when Elijah Mountford told the court that on the day of the explosion he had just descended the pit to go to work when the explosion took place. He was thrown down and bruised and he made his way back with difficulty. He met Samuel Heath and they went in with a candle to see if they could help anyone. In about half an hour they found Moses Heath lying dead. Twenty yards further on they found the body of Peter Bolderstone and they went on to find the rest of the dead. By this time they were being helped by Samuel Thornton and Alfred Tompkinson. Mountford was suffering badly from the effects of the afterdamp which killed Thornton and Tompkinson.

Aaron Barton, the agent for the Colliery Company gave evidence on the ventilation of the mine and the Coroner summed up. The jury brought in the verdict of 'Accidental Death', adding that the men were killed by the explosion and Thornton and Tompkinson were killed by the afterdamp.

SHERIFF HILL, Durham. 5th. August, 1843.

Atkinson says that there was an explosion in the Baumont seam which was dry and dusty in which mixed lights were used. The depth of the seam was 190 feet. Twenty eight lost their lives and the stables were set on fire. The fire reached the downcast shaft.

HOLLY HALL, Dudley, Staffordshire. 30th. August, 1843.

Six were killed in an explosion. All the bodies were burned and a cause was never found.

WINSTANLEY. Wigan, Lancashire. 20th. November, 1843.

The pit exploded on a Monday morning after being left over the weekend, killing and injuring several others.

DINAS MIDDLE PIT. Glamorganshire. 1st. January, 1844.

The overman had left the examination of a stall to a little boy who accompanied him. When the men who worked there entered with a naked light, there was an explosion. Eight men and four boys lost their lives and three other lads were injured. There had not been a serious accident at the colliery for years and this was supposed to have made the men confident and careless.

The day shift had descended and the explosion occurred about 8 a.m. after the overman, Griffith Williams, had gone down about 4 a.m. to make his inspection. He took a boy with him, Edmund Llewellyn, who made the tests in the heading where the explosion took place and was confined to one of the two headings. Had the accident occurred half an hour later, the loss of life would have been much greater.

Those men who died were:-

William Harray aged 20 years.

David Job aged 14 years.

Thomas Leyshon aged 16 years.

David Morgan aged 14 years.

Thomas Morriss aged 48 years.

William Morriss aged 17 years.

Lewis Morriss aged 12 years.

David Phillips aged 22 years.
Edward Powell aged 21 years.
John Richards aged 14 years.
Thomas Rowlands aged 61 years.
David Rowlands aged 9 years.

The injured were:-
William Llewellyn,
William Williams and
Thomas Evans.

At the inquest, the Coroner severely censured the overman and invited the jury to return a verdict of manslaughter against him. Edmund was a son of the manager of the colliery, Mr. Daniel Llewellyn and the jury returned a verdict of 'Accidental Death.'

DUKE PIT. Whitehaven, Cumberland. 11th. January, 1844.

The colliery was the property of the Earl of Lonsdale and the explosion occurred about 4 p.m. when the workings had just been vacated by the day men and the night shift had descended. The air at the colliery was thought to be pure and one of the best ventilated in the district and lamps were used without their caps. This was the cause of the resulting explosion and claimed the lives of eleven people.

Those who lost their lives were:-
John McCasham aged 27 years of West Strand.
Peter Pladdy aged 23 years of New Houses.
John Atkinson aged 22 years of Front Row.
Lancelot Atkinson aged 20 years of Front Row.
Bernard McAmesty aged 27 years of Front Row.
William Robinson snr. aged 47 years of Comyas Lane.
William Robinson jnr. aged 19 years of Comyas Lane.
George Clockton aged 23 years of Comyas Lane.
Thomas Slaney aged 22 years of Middle Row.
Benjamin Cowan aged 221 years of Middle Row.
Joseph Brown aged 26 years of Back Row.

The inquest was held at the Public Office before Coroner William Lumb, jnr. John Armstrong, the overman at the pit identified all the dead as 'haggers' who went down the pit on the day of the disaster a little before 4 o'clock. He had examined the pit and found it to be in a good state. He went up with John Westray and Joseph Fell and was informed of the accident about 5 o'clock by David Ruddick

He immediately returned to the colliery and descended with three men and found bodies straggled over a distance of about two hundred yards. The air at that time was good. He found three dead horses lying about 50 to 60 yards from the bottom of the shaft and further on he found Peter Pladdy and another man, dead. He gave instructions for the bodies to be taken to the surface and went on to find the bodies of the two Atkinsons and the two Robinsons Armstrong told the court that he had seen men working with the tops off their lamps but as he had found the pit safe, he could see no reason for apparent danger.

William McAvery, who was in the pit at the time of the explosion stated:-

"I live at new Houses. I was sitting at the bottom of the shaft waiting for the others to come up with two others where we had to remain until three or four

baskets were raised, when the blast took place and we were knocked down. It was like a shower of stones rushing along the workings. I got up but the stythe was so strong it knocked me down again. I was too far gone to help myself. I have no recollection of anything until I found myself at the top. We work with the tops off our lamps when there is no danger because we can see better with the tops off. The men were all killed by chokedamp and I would also have been killed if I had remained where I was working."

After hearing all the evidence the Coroner summed up and the jury returned a verdict of 'Accidental Death' in each case.

WEST MOOR. Killingworth, Northumberland. 18th. January, 1844.

The colliery was the property of Lord Ravensworth and partners and was one of the largest in the district which employed two to three hundred men. The pit was reported to have exploded and five persons lost their lives and another was burnt. The gas was supposed to have come from a fall of stones and ignited at one of the men's candles. Six persons were burnt but left the pit alive but five dies from their injuries.

They were:-

John Storey, married with a family.

William Hardy, married with a family.

John Nicholson, married with a family.

William Richardson.

Joseph Hindmarsh.

Thomas Bates or Bales.

On examining the mine afterwards, it was discovered that the explosion was purely accidental.

LANDSHIPPING. Haverfordwest, Pembrokeshire. 14th. February, 1844.

The colliery was the property of Colonel Owen. The colliery had been worked for many years and the workings were carried under the River Dunleddy but for sometime this are had not been worked for three years. When these workings were reopened the water broke in when about fifty men and boys were at work. there was a violent rush of water into the workings and they ran for their lives but about and forty lives were lost.

Immediately after the accident it was found that the ground underneath the mud on the river bed, a little above low water mark and directly above the level, had given way and eyewitness stated that the water rushed down into the workings with great force. A contemporary writer observed-

"It is possible, that, on the minds of many who read the account, an impression may be left, that as the calamity was occasioned by the sudden bursting of a mass of water, which, rushing at once through all the levels, penetrated directly to the exterior shaft. It may be supposed that a permanent communication would thus be opened between the pit and the river, in which case the probability of the bodies of the unfortunate men being sooner or later found, might be reasonably inferred. But this must go on the supposition that the level of the water now in the pit is the same as that of the river in all circumstances, in which case the aperture, through which the water rushed, must lie considerably lower than any part of the river's bed left dry by the ebbing of the waters. The case, however, is known to be very different. At the time the alarm was given, the attention of some bystanders was directed to the

appearance of the river at such short a distance from the quay as could easily be known with general accuracy. In this place the waters were seen eddying and rolling in the most violent agitation, a certain proof that the part where the ground have given way, lay directly underneath. This spot, with a considerable space outside it, was left bare by the retiring river but not the most distant sign was exhibited from any such occurrence having taken place! The only conclusion is that an immense body of mud, earth and stones was forced into the opening, completely choking up the passage through which the flood had previously entered and which, it is supposed, may n time become reconsolidated as event to allow of the working of the pits, if the water now lying between it and the shaft were drained, but of this being done, no one entertains a thought. It is, therefore, almost certain that the unhappy sufferers, so suddenly overtaken by this overwhelming destruction, will be no more seen until till the earth and sea shall yield up their dead.

Some men have descended the shaft and employed grapnels for a considerable time, but with no effect. There is something peculiarly touching in the perfect absence of every outward sign which indicate the calamitous event. With the exception of the machinery remaining idle and the appearance of the sullen water far down the pit, everything is the same in its external character, nothing whatever to tell the passenger that within a few yards of him forty individuals have found a grave.”

Those who died were:-

Thomas Gay who left a wife and six children.

Benjamin Hart, left a wife and three children.

Benjamin Harts' son.

William Llewellyn who left a wife and child.

William Llewellyn's son.

Thomas Llewellyn who had a sister dependent on him.

William Llewellyn who left a wife and grown up children.

Benjamin Jones, left a wife.

Joseph Picton and three sons and left a wife and three children.

John Cole left a mother and sisters who were dependent on him.

Hitchings, unmarried.

Bedford, unmarried.

Thomas, a boy.

Owens, a boy.

Two boys named Daves.

Two boys named John.

Two boys named Picton.

Cole, a boy.

A boy named Hughes.

A boy named Hitchings.

A boy, Llewellyn.

Jones, a boy.

Davies, a boy.

Day, a boy.

Two boys named Butler.

Two boys named Cole.

Jenkins, a boy

Two orphans of the late Jane Wilkins.

An account of the accident was related to Mr. Dunn and he was told that only four feet of rock and sixty feet of sand were between the workings and the bottom of the river. A subscription fund was set up for the dependants of the victims and £400 was raised in a very short time.

FIVE WAYS. Rowley Regis, Staffordshire. 19th. August, 1844.

The pit was owned by Mr. Darby and an explosion was reported to have killed eleven.

HASWELL. Haswell, Northumberland. 28th. September, 1844.

This was the most destructive explosion in the Durham Coalfield up to that time. The colliery was the property of Messrs. Plummer, Taylor and Company. Ninety five men and boys lost their lives and only four got out of the pit alive. The colliery was one of the largest in the county and employed over 300 men and boys who produced a very high quality coal. The mine was divided into two separate workings, the Big Pit and the Little Pit. The explosion occurred in the Little Pit, Hutton Seam, which employed one hundred men. the survivors were saved by waggons in the rollerway and four escaped near the shaft. They saw flame smoke forked lightning down the tunnels that hit boxes and threw a horse over on it's back.

Mr. Mather gave an eyewitness of the disaster. He said-

“At the time of the explosion there were four men in the pit whose lives were saved. They were John Thompson, John Smith, William Chisholme and John Davidson. They happened to be near the upcast shaft and the flames did not reach them having been stopped on it's destructive passage by a waggon and horse and a number of empty tubs, which, by the force of the explosion, were jammed together in the rollerway. Two boys wee also saved by the same protective agency. All felt that something had happened but could not tell what. The candles of the boys were blown out and they saw a flash. The furnacemen, Chisholme, observed that the air was stopped. Thompson went towards the workings, Smith first having given the alarm to the men in the engine pit, ascended by the downcast shaft and communicated his fears to Mr. Scott, the underviewer, who was then at the colliery office. Mr. Scott then descended the shaft and others joined him but shortly after going 500 yards, they were unable to proceed any further in consequence of the choak-damp. The first body that was found was that of John Willis, a boy of 13. It was brought to the bank at 9 o'clock and others followed.

The delay in getting the bodies out was occasioned by the pit being filled with choak-damp the stopping have all been blown down by the blast and it being necessary to replace them in order to obtain a current of air. Till this was done no effectual progress could be made. The boy, Willis was much burned and as he was washed, the skin and parts of the flesh peeled off one thigh was broken in two with the bone from the upper part protruding. Others were much more burnt, the features being quite black and drawn up as in agony whilst in many cases the head was broken as if it had been dashed against a wall. These above referred to were killed by flame but those killed by choke-damp were not disfigured at all and for the most part had no expressions of pain on their features. Some had place their caps in their mouths, no doubt with a view to preventing the inhalation of choke-damp. At one part of the mine at the Brockley Flat, there were about 20 putters found who had been in the act of getting their clothes. Some were dressed, others nearly so. I the pit it must be understood, the men worked nearly naked, their only dress being a small shirt

and short trousers half down the thighs. These poor fellows were lying huddled together As if they had felt what was coming, and had so clasped each other to die. Death from choke-damp is not instantaneous, and probably most of them lived for a quarter of an hour or more, and some much longer with the certainty of quick coming death.

On Monday afternoon the funerals of the bodies recovered began and by Wednesday, all who had thus lost their lives in this violent manner were interred. Some were buried at Easington, the Parish Church, Haswell, some at South Hetton and some at Hall Garth. the love of kindred was so strong with the miner an one was brought to Long Bretton, 25 miles off where all his family were while three lie at Gateshead, 18 miles from Haswell.”

Those who lost their lives were-

Thomas Briggs who left a wife.

John Briggs, his son.

John Whitfield and his son.

William and George Elsdon, brothers.

Henry Mather, a yopung man.

Joseph Gibson and his three sons.

William Favish who left a wife.

William Joblen who left a wife.

Ralph Surtees, a young man.

John and William Surtees, cousins of the above.

Robert Williamson, a young man.

John Williamson, deputy, brother to Robert who left six children and a pregnant wife.

Wanless Thompson who left a wife and a large family.

John Noble who left a wife and four children.

George Hall who left a son and a wife.

A boy named Hall.

William Routledge, a young man whose father was burnt to death in the colliery a short time before.

Daniel Lenman cousin to William Routledge who left a wife and child.

Henry Weightman who left a wife and child.

William Weightman, related to the above.

John Currie who left a wife and family.

John Pettley, a young man.

William and John Dixon, brothers, both young men.

John Curley who left a wife and child.

Eliott Richardson and his son who left a wife and family.

Michael Thurwell, a young man.

Christopher, John and Stephen Teesdale, brothers, whose father fell down the pit.

Robert Carr who left a wife and child.

Robert Rosecamp who left a wife and four children.

William Rosecamp, brother to the above and left a wife.

James Maughan, a young man.

Thomas Bottoms, a boy.

Joseph Wolfe who left a wife and child.

Peter Wolfe, Joseph's brother.

Four brothers named Dryden.

Edward Nicholson, brought up with the Dryden family.

R. Douglas who left a wife and four children.

John Brown, a young man.

Mark Dawson, a young man.
George Dawson who left a wife and six children.
Thomas Moody.
Hans Ward who left five children and a pregnant wife.
William Barras who left a wife and four children.
Son of William Barras who had been taken down the pit by his father to look at it for the first time.
George Bell who left a wife.
Johnathan Bell, brother to George.
William Taylor.
William Davidson who left a wife and three children.
Michael, Matthew and Henry Clough, brothers all under 16 years old.
James Sanderson who left a wife and two children.
William and John Harrison, brothers.
John Sanderson, who left a wife.
James and Thomas Turnbull, brothers.
John and Thomas Willis, brothers and both young men.
John Wilis, a boy.
Peter Robinson, a young man.
George Richardson, who left a wife and child.
Joseph Moffit who left a wife. Richardson and Moffit married two sisters.
John Ferry who left a wife and five children.
George Ferry, son of John.
George Heslop, a young man.
John Parkinson, a young man.
Robert and Thomas Nicholson, both young lads and brothers.
Two boys named Gilroy, brothers.
William Nichol, a young man.
William Dobson, who left a wife.
James Richardson who left a wife and four children.
James Leyland who left a wife and two children.
James Robson, a boy.
Robert Hogg, a young man.

Mr. Mather's account continues with an account of the inquest into the disaster-

"The inquest was appointed the following Monday at the Railway Inn Haswell, at 10 o'clock Mr. T.C. Maynard and the jury composed of farmers and shopkeepers at the district proceeded to view the five of those who had been killed, Thomas Robert, George and James Dryden and Edward Wilkinson. All were lying at one cottage and it was arranged that the inquest should be held on them only, the evidence as to one, of course applying to the others that were killed. The inquiry lasted through Monday and the following days and was adjourned for the of the jury and the Coroner for a week until Wednesday 9th. October.

Mr. Marshall attended on behalf of the owners Mr. Roberts for the relatives as well as on behalf of the other pitmen at the colliery. He was ably assisted by Mr. Jude and Mr.. Clough. On the first day of the inquest Mr. Roberts made an application that Mr. Mathias Dunn, a viewer, bearing a high character for the candour and integrity as well as of the great practical skill should examine the pit on behalf of those whom Mr. Roberts represented. The Coroner declined to enforce it and Mr. Roberts made an application for an adjournment of two days in order in order that he might obtain the attendance of some persons who might watch the proceedings on the part of the Government but this was also refused

On the adjournment of the proceedings, Mr. Roberts took advantage of the time afforded for securing this object and after consulting with Mr. Mather, and one or two friends of the pitmen, he went to London and thence to Brighton where he obtained an interview with Sir Robert Peel. The result was that professors Leyell and Faraday were appointed to attend and assist at the adjournment of the inquest.

On Wednesday 9th. October, the inquiry was resumed and after continuing until late the following Friday. On the Thursday in the intervening the pit was examined by Messrs. Leyell and Faraday and by Mr. Stutchbury from Bristol who had also been deputised for service by the Government.

On the Friday the inquest terminated with the verdict of 'Accidental Death' and on the suggestion of the Coroner the jury added, 'no blame be attached to anyone.'

Leyell and Faraday undertook their task with reluctance and looked only at the ventilation of the goaves. They proposed that as should be carried to the upcast shaft by cast iron pipes, twelve inches in diameter. Their views provoked much adverse criticism and the plan was by a Committee of the Coal Trades as impracticable, too costly and criticised its efficiency to prevent explosions.

This sudden end to the inquiry was not acceptable to many of those present and for the mining community in general and brought the matter to the attention of Sir Robert Peel who informed the gentlemen that- '*The Government had determined to bring the whole subject before Parliament early in the session.*'

A Fund was established for the relief of the victim's relatives which in January, 1854 amounted to £4, 403 - 2s. - 6d.

MINERA. Wrexham, Denbighshire. December, 1844.

The colliery was the property of Mr. John Barton and five lost their lives in an explosion and two others were badly burnt.

HAYES WOOD. Somerset. February, 1845.

The pit was the property of Messrs. S.S.P. Samborne and Company of Timsbury when men were working about one mile from the mouth of the pit when water rushed in. There were fourteen in the mine and only four escaped and ten were reported to have been lost.

The men were approaching old workings for which there were no plans. The shaft was 164 fathoms deep and there was a pumping shaft parallel to this, 190 yards deep. The wagon ways ran for another 400 yards with many branches.

About 2 a.m. on the day of the accident one of the overseers found that they were approaching water. The day shift of 100 men and boys came into the mine and the overseer on that shift, Mr. Evans went to the place and noticed that it was very damp. He went to another place in the mine that was also wet and had not gone far before the water broke in and the wind blew out his candle. The pumps worked at eight stokes per minute and it took many days before the mine was cleared and the bodies recovered.

Those who died were:-

John Flower aged about 55 years who left a wife and seven children.

George Palmer aged 43 years, single.

Joseph Gillick who left three children and a wife who was expecting their fourth.

John Carter, a widower with two children.

Daniel Pickford who left a wife and two children.

William Cleaves who left a wife and six children, two of whom worked in the mine.
James Evans who left a wife and two children.
Mark Brice, a lad.
Geore Lewis, a lad.
John Collins, a lad.
William Walter, a lad.

William Walter gave warning of the impending disaster by running through the workings and saved the lives of three individuals.

A contemporary account of the disaster said:-

“The overseer of the works, Mr. Evans, entered the mine about five o'clock and his attention was at once drawn to the unusual appearance of damp. It was known that the Hayeswood mines adjoined some closed and flooded workings. Having examined the spot where the supposed danger existed, Mr. Evans proceeded to another part of the mine but had not gone far before the candle which he carried was nearly blown out by a current of air and almost immediately he met a boy running without any light, his candle having, as he said, been extinguished by a rush of air. The danger was now clearly very imminent and as the fearful information reached the various labourers, the means of escape were eagerly sought. The rush of impure air speedily extinguished most of their lights and many of the men were left in darkness to grope their way to the main road which led to the entrance of the shaft. On their way from the several spots at which they had been labouring, various consultations were held as to the best roads to reach the point of safety and as they paused for consideration, they found the air becoming more and more impure and in some spots it was almost suffocating. Mr. Evans calculated that from the time he became aware of the existence of danger, to his reaching the bottom of the shaft, half an hour must have elapsed and he was then in an almost exhausted and fainting state. Eleven men were missing, only the faintest hopes being entertained in their reservation in some remote part of the works which the water might not have reached.”

HASWELL. Haswell, Durham. April, 1845.

The intake and the return were separated by brick stoppings which were all blown out by the explosion along the line of the rollerway in the north eastern districts where the explosion took place. this destruction left the pit without ventilation. Most of the victims were suffocated. There were 14 killed by the explosion and 81 suffocated.

WEST MOOR. Killingworth, Northumberland. 3rd. April, 1845.

Two weeks before the explosion, a fault had been cut through and a blower started between shifts. From the bottom of shaft there was a stone drift which ran south west bout 900 yards to the water level. From this three drifts branched off along the level for about 1,100 yards to south east from which there was a couple of headings into the solid coal, 300 yards to the north east. The explosion took place at the extremity of one of these headings.

The first indication of disaster came from two hewers. They described explosion as '*coming back on them*', that is from workings. The air in the workings rushed along the drift to the pit mouth, carrying with it dust particles which the men called '*stour*' and gave the indication at the surface that there had been an underground

explosion. A continuous stream of water was directed down shaft and this helped the rescuers.

Those who died were:-

John Sharp, hewer who left a widow and six children.

William Sharp, his brother also a hewer who left a widow and seven children.

Robert Hall, deputy aged 24 years.

Matthew Thompson, putter.

William Moulter, trapper boy.

Thomas Stewart, trapper boy.

Thomas Thompson, hewer left a widow and four children.

Peter Tweedie, hewer.

John Hindmarsh, trapper boy.

John Grey, putter boy.

At the inquest a collier who left workings said that pit was safe one hour before disaster. Joseph Browner, overman said that he had inspected pit and found it safe. John Wales, viewer at colliery said that lamps were not needed in pit.

It was believed that the gas was ignited by a little boy with a naked light, who was allowed to go down before the men, who had Davy lamps. Ten lost their lives, four men and six youths though some reports say ten lives were lost. The blower continued to issue forth gas for some time.

The Coroner said he could find no fault with the ventilation of the colliery and a verdict of "Accidental Death" was returned.

OLD DUFFRYN. Aberdare, Glamorganshire. 1st. August, 1845.

The colliery was owned by Mr. Powell and was referred to as the Upper or Old Duffryn Colliery. It had been won about three years before the accident and was about 3 miles from Aberdare and 6 miles from Merthyr. The downcast shaft was 828 feet deep and used for pumping. The return air went along the main roads. The upcast shaft was the furnace shaft 14 feet by 9 feet. The colliery was worked by lighted candles and the old stalls were systematically walled up. The gas was supposed to have been driven out of an old stall when the roof fell and to have ignited at the candles of the men working further up the heading.

There were about 140 men in the mine at the time but only twenty nine lost their lives, most of them from suffocation. The blast was confined to one heading of the mine and occurred about 11 a.m. on a Saturday. Three horses were killed and the bodies of some of the victims were not recovered until the following Monday. The explosion was spoken of as '*only a commencement in the valley of Aberdare.*'

Those who lost their lives were:-

Howell John David aged 20 years, single.

Thomas Davies aged 78 years, widower.

William Edwards.

Thomas Evans, left a widow and 2 children.

William Evans aged 31 years.

John Evans aged 22 years.

David Evans aged 9 years.

James James aged 23 years, single.

David Jenkins aged 37 years, single.

David Jones aged 32 years, single.

David Jones aged 27 years, left a wife and child.

John Jones aged 17 years.
Evan Lewis aged 19 years, single.
William Llewellyn age 18 years, single.
David Morgan aged 30 years, single.
Richard Morris aged 30 years, single.
Joseph Phillips aged 19 years, single.
Thomas Rees aged 23 years.
Thomas Smith aged 19 years, single.
George Thomas aged 33 years, single.
Evan Thomas aged 14 years.
Rees Williams aged 24 years, single.
Howell Williams aged 28 years, single.
John Edwards aged 35 years, left a widow and 2 children and father of William.
James Thomas aged 42 years, left a wife and 2 children.
David Thomas aged 10 years, son of James. Burnt to a cinder.
Nicholas Evans, a lad, was said to be badly injured which would bring the number up to the 28 victims that was reported.

Mr. Powell of Newport met the funeral expences and at the inquest the jury returned a verdict that:-

“The men met their deaths accidentally present system of ventilation at the Duffryn is as perfect as can be admitted but is inadequate to ensure the safety of those working there and we strongly recommend that a system that will prevent the gas oozing out of the coal and old, abandoned workings and roads be adopted as soon as possible.”

JARROW. Jarrow, Northumberland. 21st. August, 1845.

The Low Main and the Bersham Seams were worked at the colliery which had one single bratticed shaft which served as both downcast and upcast. The explosion took place in the Low Main on a Thursday at about 1 p.m. when there were about 75 men in the mine which was worked with naked lights. Of these, thirty six were working in the Low Main Seam from which there was only one survivor. The men who were working in the Bersham Seam, 120 feet above, suffered the effects of the afterdamp and three men and two boys lost their lives.

Those who lost their lives were-

W. Wallar aged 35 years, who left a wife.
James Hall aged 25 years, who left a wife.
Robert Bord aged 13 years. Not found.
Joseph Scranton aged 21 years.
John Charlton aged 18 years.
Thomas Wailes aged 44 years who left a wife and three children.
Thomas Wailes aged 20 years, his son.
William Bates aged 33 years who left a wife and three children.
John Musgrave aged 50 years who left a wife and child.
John Musgrave jnr. aged 18 years.
Benjamin Robson aged 19 years who left a wife.
George Atkinson aged 19 years.
John Foster aged 21 years.
Robert Foster aged 14 years.
Thomas Liddle aged 34 years who left a wife and four years.
William Charlton aged 42 years who left a wife and child.

John Elliot aged 20 years.
William Elliot aged 14 years.
Thomas Love aged 48 years who left a wife and two sons.
Joseph Barmborough aged 14 years.
John McLeod aged 40 years who left a wife and three children.
Robert Ramshaw aged 18 years.
John Hills aged 44 years who left a wife and three children.
Robert Fairclough aged 13 years.
Ralph Arrowsmith aged 24 years who left a wife and six children.
James Steward aged 67 years who left a wife.
Mark Willis aged 34 years who left a wife and six children.
John Bordis aged 59 years who left three children.
Thomas Bordis, son of John.
Joseph Wantess aged 41 years who left a wife and son.
William Waddle aged 42 years who left a wife and three children.
John Cockburn aged 32 years who left a wife and four children.
George Cram aged 29 years, who left a wife and three children.
George Willis aged 20 years who left a wife.
Cuthbert Bell aged 26 years who left a wife.
James Cockburn aged 27 years.
Jacob Defty aged 46 years who left a wife and six children.

The accident was thought to have been caused by an inrush of gas into the workings, none of which were more than 300 yards from the shaft. There were two explosions within a few minutes and the survivor from the Low Main Seam said he saw the second explosion bearing down on him. He said it *'was very dark and black'* and he saved himself by throwing himself to the ground. He saw no flame but there was great quantity of smoke and dust .

There were efforts after the disaster by the miners to get a full inquiry and they chose Mr. Mather, Mr. M. Jude and Mr. Horn as their representatives. Mr. Mather went down the pit after the disaster and when the inquiry started, Mr. Horn asked the Coroner to adjourn the inquest as Mr. Mather was suffering the effects of the afterdamp by the Coroner would not do so. Mr. Horn then asked if he could ask questions at the inquiry but again permission was refused. The Coroner said that he considered himself a competent person to conduct the inquiry and manage his court.

The miners were looking for legislation to govern their work and Leyell and Faraday had petitioned the House of Commons in March, 1845 but Parliament, while expressing their interest, did not fully understand the situation. Another Commission under Sir. H.T. de la Benche and Dr. Lyon Playfair was appointed in August that year. They were directed to inquire into the explosive gasses generated in coal mines. This Commission was sitting when the explosion occurred.

Dr. Playfair conducted an inquiry into the disaster and reported on the 1st. June, 1846. His conclusions cast doubts on the absolute safety Davy lamps and condemned the practice of working a colliery with a single shaft.

A Subscription Fund was started on behalf of the sufferers which realised about £7,000.

NEWTON, Haydock, Lancashire. 5th. November, 1845.

The colliery was the property of Messrs. Turner and Evans and was worked by day and night. The night men had just left and nineteen day workers had already descended when the explosion occurred. Planks that were across the shaft were

blown a considerable distance. Thirteen lost their lives and six others were injured. Had it occurred a little later there would have been more men down the mine and the loss of life would have been far greater.

TOFTSHAW BOTTOM. Bradford, Yorkshire. 1st. January, 1846.

The colliery was the property of the Bowling Company. The men were provided with safety lamps and the stewards continually urged the men not to go into the working with candles but on the morning of the explosion they took candles into the pit as some had '*left their lamps at home.*' They had been workings for a very short time when the disaster occurred and five men lost their lives. It was stated that the workings were inspected every morning.

The men who died were:-

J. Waker,
A. Waker,
H. Waker, father and two sons,
W. Hughes and
J. Schofield.

RISCA. Black Vein Pit. Monmouthshire. 14th. January, 1846.

The colliery was the property of Mr. J. Russell and Company. The explosion occurred about 8.30 a.m. and thirty five lives were lost.

There were two shafts, the downcast, 146 yards deep and 9 feet in diameter and the upcast 24 feet away to the same depth. This was oval shaped 16 by 10 feet and had a ventilating furnace fed by the return air. The ventilation was divided into two splits with the circuit to east 2,200 yards and that to west, 2,600 yards. The quantity of air was not stated by the return drift was only 5 feet by 4 feet so could not have been very great. The ventilation of the colliery was dependent on a large number of doors. If one set of doors near the shaft was left open or destroyed then the intake air would go directly into the upcast shaft with out entering the mine. The ventilation of each heading as also dependent on a door.

About 150 men and boys were employed underground of whom about two thirds used candles and the others Davy lamps. The men were paid extra if they used lamps which were tested by placing them in a small volume of firedamp. Two or three men worked with lamps because they could not keep candles lit in ventilation current.

Blowers were very common in the mine, some lasting for a few days, others for weeks. The blowers were more common in the soft coal and near faults and they came mainly from the top part of coal and the black shale above. Sometimes they caught fire but they did not explode. The way gas fired at a candle was described, '*it struck back like a train of gunpowder in the wind road, when it exploded.*' It was common to have a little firedamp in the top of the headings where the men worked and a little in some of stalls in a morning. If any place was thought to be dangerous, a cross made of two sticks, was put up by the fireman to prevent the men going further and if he could find their lamps, he brought it back and drove a nail in side of place and left it for them to see. The firedamp came mainly from the Black Vein Coal and an efficient ventilation system, was considered essential.

On the day before the explosion one of the guide chains in upcast shaft was broken by a fall of ironstone from part of the shaft and so the men were not allowed down that shaft. Many of them took opportunity to '*carouse and drink*' and several were intoxicated until after midnight. On that night the fireman was repairing some

fallen ground and did not personally visit the west side but man usually employed with him and lad, went through the various windways but did not examine stalls, concluding that if former were in good condition so would be the latter also. The finished their inspection about 5 a.m. and on their return to bottom of shaft one of them reported that all was safe.

That morning, the 14th., the day foreman did not arrive at work due to illness but he sent his brother in his place. He went down pit about 6 a.m. and went to back of No.2 cross heading, west of shafts where firedamp had been found on the evening of 12th. While he was there with other men beating out gas with their coats into airway and just about to test air for gas, the explosion occurred.

Those who died were:-

John Danks who left a wife and family.

John Danks, son of John.

John Watts who left a wife.

George Sommers who left a wife and two children.

Isaac Brison who had a wife and family in Somerset.

William Bryant of Somerset.

Bryant, son of James Bryant.

John Attwell.

William Harrison.

John Bath, a young man.

James Gambel, left a wife and children.

John Powell, left a wife and two children.

Charles Hoarse, a young man.

Elias Jones.

George Williams.

William Thomas.

Isaac Fuidge.

Emmanuel Crook.

James Crook.

Samuel Silous, a young man.

James Pike, left a wife and family.

Jesse Hedges.

Thomas Wendward.

John Peel, a young man.

John Evans, widower with five children some of whom were married..

Bodies not recovered:-

James Lease, left a wife and child.

George Curtin, a young man.

George Bamfield, left a wife and family.

George Bamfield jnr.

Thomas Bamfield, son of above.

Isaac Lavel, wife and five daughters.

James Gullock, wife and family.

John Crook, a boy.

A. Gething said that the place where he was working on the Monday prior to the explosion was so full of firedamp that he had failed to get it out after two or three hours brushing. Lamps were used in the colliery but the men worked mainly with candles. The colliers had not been working the day before the disaster and the

accident was put down to colliers approaching too near an old goaf with a naked light.

All the doors near the bottom of the shaft were blown out and this caused the ventilation to cease on the west side of the mine. Very few of the men were killed by the explosion but many of those who died died from suffocation by the afterdamp as they tried to make their way to the shaft. The explosion killed thirty five and was made the subject of a special inquiry on behalf of the Government by Sir H.T. de la Benche.

FIRE CLAY PIT. Bilston, Staffordshire. 15th. April, 1846.

The colliery was owned by Messrs. Pemberton and had been closed for the Easter Holidays. On the morning when the miners went back to work, six men and boys were lowered and the 'doggy' cautioned them to remain quietly at the bottom of the shaft until he came down. Instead of doing this, a man named William Jonestook his candle and went through the gate road. His mates told him not to do this but he persisted. He had not gone six yards when the gas exploded, hurling the men at the bottom of the pit a considerable distance. Jones was killed on the spot along with four other men and boys and several others were burnt. The mine was a new one and the accident was the most disturbing that had occurred in the Bilston district. The explosion was heard one and half miles away and fire was reported to have blazed out of the shaft.

Those who lost their lives were:-

William Jones aged 23 years of Brook Street.

Abraham Atkiss or Adkins aged 32 years of Temple Street.

Thomas Vinsom or Ensome aged 10 years of Oxford Street.

John Evans aged 18 years. Enoch Bettemy or Bevington aged 16 years of Bridge Street.

(The first surname came from the 'Staffordshire Advertiser and the alternative name came from the 'Mining Journal').

Jones and Atkiss each left a wife and six children and it was reported that two of the men in the second skip were in a very precarious state.

The inquest was held at the Fox Inn, Bilston before Coroner T. M. Phillips. James Morgan identified all the victims and said they were all miners. He went on to say:-

"We all worked together in the coal pit in Bilston New Colliery on the Willenall Road. Messrs Benton and Pemberton are the Masters of the colliery and the pits are worked by George Roberts and Edward Dunston. All the deceased persons and myself were there. The first skip that was let down contained William Jones and also Job Vinsom, his son Job, William Moody and William Jones' son, a boy of about 10 years of age. They were let down by the engine. As soon as they had been let down, the skip came up again, which was in a few minutes. Six other men got into the skip, namely, the deceased Abraham Atkiss, John Evans, Thomas Vinsom and Enoch Bettemy and also William Cox and Edward Roberts or Simmons. The engine started as soon as they were ready and when they were a yard or two down the shaft, an explosion took place and it was so violent that all the persons in the skip were blown into the air and fell with great force on the pit bank, a great distance from the mouth of the pit. I assisted the other men on the bank to remove the men who had been blown from the skip. Thomas Vinsom was quite dead. I then went to Evans and Bettemy and found them dead also. Atkiss was alive but died almost immediately. I assisted to remove the bodies to their houses.

Upon my return to the colliery I went down a pit near the one in which the explosion had taken place and got into the latter by a gateroad. Upon going into the pit I found William Jones, who was quite dead. The men who had gone down with him were not then in the pit. They had gone up the shaft. I found the two butties, Roberts and Dunton in the pit and also four other men. In company with Job Vinsom, the elder, who was one of the six men in the pit, I examined the workings and found that an explosion of sulphurous gas had taken place. I knew there was sulphur in the pit though no accident had been from it and I requested the young Job Vinsom to tell the men to be careful when they went down and not to go from the bottom until the doggy, William Cox, had gone down with the second skip and used a safety lamp. Cox is an experienced man and is seriously injured and not able to attend."

Job Vinsom, miner of Newton, Bilston gave his account of the disaster.

"I was in the first skip that went down. While we were going down, Cox, the doggy, was on the bank, hooted to us and told us to hold back and not go into the gateroad until he had come down. When we got to the bottom, I said, "*Let's sit down men,*" but Jones lighted a candle and went into the workings asking Moody to follow him. He did so and after they had gone about fifty yards, the explosion took place."

After hearing all the evidence the Coroner summed up and the jury returned a verdict of 'Accidental Death'.

EAST WHEAL ROSE. Newlyn, Cornwall. 9th. July, 1846.

The East Wheal Rose mine was situated in a valley surrounded by several hills of killas. The mine workings ran from north to south in what was termed 'flucan' and in some places passed through a blue clay slate. Towards the northern part of the sett, the valley narrowed into a ravine through which a stream ran past the workings and continued as the River Gannel and from there to the sea at Crantock, a distance of five or six miles and a fall of about 50 feet. The East Wheal Rose was immediately adjoining the sett of the North Wheal Rose.

Between twelve and one o'clock on the day of the accident, dark storm clouds massed round the hills and a terrible thunder storm started. The thunder was a fully loud and about 9 a.m. the rain poured down in torrents. eye-witnesses stated that they had never seen anything like it before in England but had known ran like it in South America. In consequence, the level of the rivers and streams rose rapidly n a very short space of time and poured down the East Wheal Rose with very great force which rushed from the south to the north of the direction of the narrow ravine and directly over the area of the sett.

Captain Middleton, the manager of the East Wheal Rose said-

"About the time of. While I was there it began to rain and in less than five minutes the water was descending over the hills in torrents the storm, I was in the saw-house giving directions to have some timber cut for the mine. In a few minutes I sent a man for fifty surface men to watch the leats to get them prepared and see that all was all right. I then sent a man to the counting-house for my underground clothes. By the time I came put the water was going down through the mine in a perfect sea, being one immense sheet of water. I had had three hundred men endeavouring to save the timbers, barrows and other materials, as well as engaged in raising the shafts to keep the water from descending. By that time the machines were employed in the men to the surface from Stephen's, Carbis's, Gower's, Davey's and Oxnam's shafts. The water carried timber and large pieces of material out of the sett as far as Merta bridge. On the west of the mine a strong stone bridge had been built by the

adventurers about two years before, one half of which was carried away by the rushing flow of water.”

The water came down upon the sett in such broad and deep waves that all efforts to keep it from the shafts was of no avail. As the water rushed towards the ravine, it deepened and it first entered the mine at Oxnam's shaft and then down other shafts. The water rushed through the workings with such force that it blew out the men's candles and the survivors were brought quickly to the surface on kibbles. It was thought that there were about 200 men and boys in the mine and the greater number escaped to the surface though some were injured by stones falling on them. They were attended to by Mr. Vigors of Newlyn, the surgeon of the mine. About this time it was learned that there were about forty men who had not been accounted for and by Friday morning it was realised that thirty eight men and boys had lost their lives.

Those who lost their lives were:-

Simon Merrifield, unmarried of St. Endor.

John Bennetts, married of Perranzabloe.

Richard Tippet, an old man of Newlyn.

Silas Ellery, unmarried of Newlyn.

Samuel May, aged 17 years, a boy from of Perranzabloe.

James Clift, unmarried of Newlyn.

Samuel Werry, married of Newlyn, Richard Michell of Idless.

George Trebilcock, aged 23 years, unmarried of Perrenporth.

William Cevern, a young man of Newlyn.

William Williams, unmarried of Uny Lelant.

Francis Waters, a married man residing at Newlyn.

Thomas Bishop, aged 29 years, unmarried of St. Allen.

Henry Rowe, married of Newlyn.

William Lampshire, aged 18 years, unmarried of St. Allen.

Josiah Lanyon, married of St. Allen.

Francis Lampshire, aged 30 years, married of St. Allen.

Isaac Bartle, aged 35 years, married of St. Agnes. Found in the 50 fathom Level.

Matthew Wilkins, aged 15 years, unmarried of St. Agnes.

John Stephens, married man with nine children of St. Allen.

John Bailey of Chancewater.

Luke Phillips, unmarried, of Perranzabloe.

Francis Stephens, unmarried of Perrenporth.

James Coade, unmarried, of Perranzabloe.

Peter White, unmarried of Breage.

William Hosking, a young man of St. Allen.

James Clarke, aged 24 years, married, of Mitchell.

John Cotton Rowe, married of St. Allen.

William Eastlake, married of Newlyn.

William Jeffrey, aged 39 years, married of St. Allen.

William Pearce, aged 16 years and Francis, his son of Newlyn.

Reuben Lanyon, unmarried, St. Allen.

Henry Pengelly, a young man, Redruth highway.

John Tonkin, aged 37 years, married said to be from Blackwater, his family living in Newlyn.

Martin Brice and Thomas Brice, brothers of Kenwyn.

The inquest was opened by Mr. J. Carlyon at the East Wheal Rose account house. Captain Middleton gave his account of the events at the surface and said

that every effort had been made to save the men by working the whims and at the Gower's shaft the men were raised to safety in the kibble and arrived at the surface clinging to the chains. When they gained the surface it was found that one man had lost his hold and fallen to his death.

Samuel Barton, a miner, told the court:-

"The two deceased, Samuel Wherry and James Coade worked with me in the East Wheal Rose. I was at work in the south part of the mine at Turner's shaft about two o'clock on Thursday. We had candles, and in that part where I was working, they were all blown out by a sudden rush of air which alarmed us and we proceeded to grass as soon as we could

As soon as I got to the surface I found that water was rushing into different parts of the mine but more particularly into Magnor's shaft. The miners were then escaping by the footways as best they could. I afterwards went down to Michell's sump shaft and tried to turn the water away from going into the manhole. I succeeded in diverting it from the manhole and eighteen men came up afterwards. I went down within six feet of the 40 Fathom Level and had account that there were men down there but no more came up. I came up again and put on a dry suit of clothes and went over to put a dam to keep the water back.

We went to work at six o'clock on Friday morning to search for the bodies. At Gower's shaft in the 50 Fathom Level we found the bodies of Wherry and Coade. The water had been back to the level where the men had drowned."

Ralph Richards was on the surface when the rain began and he told the court:-

"We expected to have rain before as it looked very dark towards the north and east. I was on the surface near Penrose's shaft when it started to rain very heavily and we tried to prevent the water going into the shaft. Captain Middleton was there and all the efforts of the men were unavailing and water was pouring all over the ground."

The Coroner asked him what means were taken to get the men up and Richards answered:-

"The machine whims were put to work and every assistance that could be rendered was rendered in rescuing those underground and I think about 200 men escaped by climbing out and by the machines which left forty three men not accounted for of whom three came up on Friday morning. The last man, Sharples, was taken out about seven o'clock."

The Coroner addressed the jury saying:-

"That there is no doubt that the men were drowned by this stroke of the Almighty. If you are satisfied of that, and that every means were used to prevent the water from getting into the mine, and to extract those below, the verdict that you come to will be that of accidental death."

The verdict was immediately returned and signed by the jury.

BOGLE HOLE PIT. Glasgow, Lanarkshire. 28th. September, 1846.

The colliery was owned by the Clyde Iron Works and was at Tollcross. The pit exploded killing five men and a boy.

ROUNDS GREEN NEW PIT. Oldbury, Staffordshire. 17th. November, 1846.

The pit was in Newberry Lane and the property of Mr. North of Wednesbury. Shortly after twenty five men had descended the pit on a Tuesday morning, a section of the men was found to be filled with firedamp. The mine was worked with naked lights and the subsequent explosion killed nineteen and another was not

expected to survive. There were men in the shaft being wound down at the time of the blast. As the flame came up the shaft they were blown 30 feet into the air and two fell down the shaft to their deaths. Mr. North went down the pit and found the two men T. Roden and W. Henshaw at the bottom of the shaft.

Among the twenty who died were:-

25 victims required.

T. Roden

W. Henshaw

Joseph Troth

Jacob Boden

John Windmill

Samuel Boden

Job Holland, butty.

The inquest was held at the Talbot Arms, Oldbury when a verdict of 'Accidental Death' was returned on account of the imperfect ventilation of the pit. The accident was made the subject of a special government inquiry.

BURGH. Coppull, Lancashire. 24th. November, 1846.

The colliery was the property of John Hargreaves and employed female labour under the age of fourteen. A tunnel was being driven through a fault and a man went into some old working to retrieve a quantity of timber. Eight lost their lives in an explosion of which three of the victims were reported to be females and five others were injured. All the colliers used candles and one of their lights was supposed to have ignited the gas. There were two explosions one after the other and there were thirty to fifty people in the mine at the time. The fireman stated that the men went down without his approval and before he had made his inspection and on the other hand it was said that the fireman was not competent to do the work and did not have the required knowledge.

Those who died were-

Jane Halliwell, Thomas' daughter.

Seth Turner aged 23 years.

William Turner, his brother aged 25 years.

William Wilding aged 16 years.

Mary Booth aged 12 years.

Jane Moss aged 25 years who left a child.

Thomas Halliwell, aged 37 years who left a wife and four children.

Mary Booth and Joseph Hale in each others arms, overcome by the afterdamp.

Those who were injured were-

James Booth, dangerously.

Thomas Graham, dangerously.

Thomas Farrimond and his sons, Thomas and Joseph.

Richard Lomax.

Proceedings were instituted against John Hargreaves for letting girls work underground under Section 13 of the Act by which proof was required 'of consent, concurrence or knowledge'. Hargreaves argued that the girls were there without his consent and that the manager had told the girls to wear men's clothes. The manager, Joseph Ellis, denied this and blamed the miners arguing that they should

know who was male and who was female. The case was dismissed and Ellis convicted and ordered to pay a fine of £20. Hargreaves was a local magistrate. The disaster was the subject of a special Government inquiry by Mr. W.W. Smith.

PARR. St.Helens, Lancashire. January, 1847.

An explosion was reported at a colliery in Parr which resulted in the loss of five lives.

THE OAKS . Barnsley, Yorkshire. 24th. January 1847.

The pit was the property of Mr. Micklethwaite of Ardsley and was known as Ardsley Main Colliery. It had recently been sold and at the time of the disaster, was the property of Messrs. Smith, Barber and Company. It had cost the present proprietors a great deal of money to sink a shaft, 283 yards deep, to the Barnsley Seam and a great deal of water had to be raised. There were two shafts at the pit, one was a drawing pit which wound men and materials, the other was a ventilation shaft which was being repaired after a fire on the 4th. December, 1845 which damaged the headgear. At the time of the explosion there had been scaffold in the shaft for about four or five weeks while this work was being carried out.

The pit was considered safe except for one part which was known to give off gas and men were urged to take great care when passing the place with naked lights. At about 3 a.m., the people at the surface heard a loud explosion and saw smoke, burning timbers and stones come out of the shaft. It was described at the time as being '*like a volcano*'. At the time, there were two or three men at the pit bank moving corves and about ninety men working in the pit. The explosion was of such terrific violence that it blew the corves out of the men's hands and tore away iron plates around the top of the shaft. The effects of the explosion were heard a great distance from the pit.

George Hartley and William Eyre were working on the scaffold, repairing the shaft. Hartley was killed by falling stones but Eyre escaped with his life. Hartley's body was later recovered. At the upcast shaft, several men, including George Northrop, the banksman, were moving coal and they escaped injury.

People from the village of Ardsley, Gawsently, Worsborough, Barnsley, Monk Bretton and other places near to the pit ran when they heard of the disaster and the pit bank presented a scene of weeping wives, friends and relatives. No one believed that there could be anyone alive in the pit but as soon as the smoke cleared there was no shortage of volunteers to go down. The friends and family who had rushed to the pit, were among these and there was great deal of work to be done and danger to be faced to get into the pit and search for the victims.

Up to Monday the 8th., about 66 dead had been brought to the surface and there remained seven known to be in the pit. Great efforts were made to find these men. The mutilated remains of William Walton were not recovered until the 15th. and those of Abraham Matthews not until the 18th. Many of the bodies were scarcely recognisable as they were severely burnt and mutilated. It was reported at the time that, '*the dead were a fearful spectacle as they had been roasted to death*'"

Thought turned to the cause of the disaster and the dangerous place was suspected. Minutes before the explosion, George Armitage, the bottom steward and Joseph Lillewood, the fireman, had come to the surface and reported that all was well in the pit and that there were no signs of danger. Immediately after the blast, they descended the drawing shaft in an iron bucket and as they descended they heard cries. At the pit bottom they found some survivors. Every effort was made to get them to the surface and many of them were burnt and injured and all were

suffering from the effects of gas. Twenty six men were got out of the pit alive but three, James Gallowan, Charles Hough and John Jessop, died later from the effects of their injuries and there was little hope for Barras, Frost and Symonds.

Efforts to improve the ventilation in the pit were progressing and over sixty bodies had been recovered and brought up. Fumes later filled the pit and it was impossible to go down. It was thought there were still three in the pit, Abraham Matthews, John Wroe and William Walton.

The bodies were taken to a public house in Hoyle Mill for identification which was harrowing and difficult but once the victims had been identified, they were taken home on carts. The proprietors of the colliery said they would pay for the funeral expenses and the coffins. The Sunday after the thousands of visitors came to the pit and there were rumours that the explosion had been caused by the two men whose bodies had not been recovered, Abraham Matthews and William Walton.

The married men who died were-

Robert Jessel aged 31 years who left a wife and two children.

James Kelly aged 40 years who left a wife.

William Wroe aged 41 years who left a wife and four children.

John Hough aged 30 years, who left a wife and three children.

James Brown aged 50 years, who left a wife and four children under nine years of age.

Peter Day aged 45 years, who left a wife and three children.

William Addy aged 26 years, who left a wife and two children.

Richard Cooke aged 25 years, who left a wife and child.

Abraham Holland aged 32 years, who left a wife and four children.

George Hartley aged 43 years, who left three orphaned children.

Isaac Lindley aged 30 years, who left a wife and two children.

James Galloway aged 26 years, who left a wife and child.

Ezra Winter aged 27 years, who left two orphaned children.

Joseph Steel aged 24 years, who left a wife and two children.

Samuel Lindley aged 28 years, who left a wife and three children.

John Littlewood aged 23 years, who left a wife and two children.

George Dyson aged 37 years, who left a wife and a child.

George Billington aged 22 years, who left a wife and two children.

Joseph Turton aged 36 years, who left a wife and two children.

Richard Hodgson aged 32 years, who left a wife and two children.

George Gilberthorpe aged 24 years, who left a wife.

George Mattewman aged 28 years, who left a wife and four children.

James Wiltey aged 42 years, who left a wife.

William Walton aged 30 years, who left a wife and child.

Abraham Matthews aged 45 years, who left a wife and six children.

The single men and boys who died-

Thomas Brown 18 years.

William Kirk 21 years.

Francis Birtles 12 years.

George Bedford 17 years.

William Wroe 11 years.

Vincent Matthews 15 years.

George Parker 13 years.

John Cooke 20 years.

John Woodcock 15 years.

Thomas Beardshall 13 years.

James Chadwick 17 years.
John Gelder 11 years.
Aaron Hobson, 26 years.
Joseph Gilberthorpe 18 years.
George Sedgwick 13 years.
Robert McLear 19 years.
George Steel 27 years.
James Lee 17 years.
George Hinchcliffe 28 years.
Edward Stanfield 22 years.
George Clayton 23 years.
William Whiltey 18 years.
John Riley 23 years.
Matthew Lindley 23 years.
Matthew Denton 15 years.
William Carlton 10 years.
Thomas Foundhere, 15 years.
John Day 15 years, son of Peter Day.
John Galloway 22 years.
Joseph Fearnley 20 years.
John Hitchen 14 years.
John Buckley 24 years.
Richard Beardshall 18 years.
Joseph Woodhead 13 years.
Charles Haigh 23 years.
Charles Haigh 23 years.
James Turton, 13 years.
John Wainwright 11 years.
David Woodhead 11 years.
John Harper 16 years.
Daniel Mellor 16 years.
William Rushforth 19 years.
John Peach, 17 years.
John Jessop 17 years.
John Wroe 15 years.
George Whitley, 16 years.

The funerals took place on the following Monday when fifty victims were interred at the Parish Church. The procession was half a mile long, shops closed and the church bells pealed.

The inquest was held at the White Bear Inn, at Hoyle Mills which was the property of Mr. Robert Whitley., before Mr. G.D. Barker, the Deputy Coroner. Joseph Norton, the banksman at the pit, was the first witness. He had identified many of the victims.

The fireman, Shuttleworth, went down the pit to test for gas before the men went down. He got down at 3 a.m and there was only him and the cuploa attendant in the pit. He tested for gas holding his lamp in front of him as he went from place to place but he found no gas on the morning of the explosion. He said the furthest parts of the workings were half a mile from the shaft and there had always been gas in the coal after it was taken down. After the explosion the partition between the air shaft and the workings was blown out.

After hearing all the evidence and the Coroners summing up, the jury brought in the following verdict-

“Accidental Death, and added, the jury agree of the opinion that efficient regulations are not enforced in the district to prevent the use of naked lights in those parts of the mine where there was inflammable gas known to exist and are of further of the opinion that the occurrence of accidents involving so great a loss of life, demands the immediate attention of Her Majesty's Government and would justify Parliament in framing such a code of regulation as would give greater security to persons employed in mining operations and request the Coroner to forward these sentiments to the Secretary of State for the Home Department.”

WESTLEIGH. Leigh, Lancashire. 28th. January, 1847.

An explosion was reported at the colliery which killed five and seriously injured another five men.

DARLEY MAIN. Barnsley, Yorkshire. 29th. January, 1847.

The colliery worked the Barnsley Thick or Main Coal and there was no division between the districts of the mine which could confine the results of an explosion and the quantity of ventilation was totally inadequate for the 100 men and boys who worked in the pit. While blasting the coal with gunpowder, the coal caught fire about 200 yards from the pit bottom. After trying to put it out for over two hours with no success the men had to retreat through the smoke. Many got to the shaft in safety but some were exhausted and six men lost their lives and the bodies were recovered by noon. Eight men escaped and although they were exhausted, they were expected to recover.

Those who died were:-

G. Gomersley, underground steward,
T. Elistone
T. Broadhead,
J. Jenkinson,
J. Gilberthorpe and
G. Brown.

Of the six victims, five were married men. All the victims were buried in one grave in Worsborough churchyard.

ARDSLEY MAIN. Barnsley, Yorkshire. 5th. March, 1847.

The colliery, which was also known as the Oaks, was owned by Messrs. Firth Barber and Company and worked the eight feet Barnsley Main coal and the workings were scattered in various directions which were ventilated by one unbroken current of air that went from one district to the next and then to the upcast shaft. The air was first conducted to the north workings, circulated round the goaf and then to the working places.

The explosion, in which seventy three lives were lost, appeared to have originated on the north west rise side of the large south goaf which was near the edge of the fault which passed through the middle of the main level. The force of the explosion extended to the north west of this goaf up to and around the shafts so that the whole of the ventilation in the mine was stopped. It was in this district surrounding the shafts that the great loss of life occurred from the effects of the afterdamp.

Two men were working on the platform suspended in the shaft and a quantity of stones fell on the men and one was killed on the spot. Three days later 66 bodies had been recovered. The mutilated remains of William Walton was recovered on the 15th and those of Abraham Matthews were not recovered until the 18th.

Those who died were:-

Robert Hesse aged 31 years, left a wife and two children.
William Wroe aged 41 years, left a wife and four children.
John Hough aged 30 years, left a wife and three children.
James Brown aged 50 years, left a wife and three children.
Peter Day aged 45 years, left a wife and three children.
William Addy aged 26 years, left a wife and two children.
Richard Cooke aged 25 years, left a wife and child.
Abraham Holland aged 32 years, left a wife and four children.
George Hartley aged 43 years, left three orphan children.
Isaac Lindley aged 30 years, left a wife and two children.
James Galloway aged 26 years, left a wife and child.
Ezra Winter aged 27 years left two orphan children.
Joseph Steel aged 24 years, left a wife and two children.
Samuel Lindley aged 28 years, left a wife and three children.
John Littlewood aged 23 years, left a wife and two children.
George Dyson aged 37 years, left a wife and child.
George Billington aged 22 years, left a wife and two children.
Joseph Turton aged 36 years, left a wife and two children.
Richard Hodgson aged 32 years, left a wife and three children.
George Gilberthorpe aged 24 years, left a wife.
George Matthewman aged 28 years, left a wife and four children.
James Whiteley aged 42 years, left a wife.
William Walton aged 30 years, left a wife and child.
Abraham Matthews aged 45 years, left a wife and six children.

The single men and boys:-

Thomas Brown aged 18 years.
Matthew Lindley aged 23 years.
William Kirk aged 21 years.
Matthew Denton aged 15 years.
Francis Birtles aged 12 years.
William Carlton aged 10 years.
George Bedford aged 17 years.
Thomas Foundhere aged 15 years.
William Wroe aged 21 years.
Luke Wroe aged 11 years.
John Day aged 15 years, son of Peter.
Vincent Matthews aged 15 years.
John Galloway aged 22 years.
George Parker aged 13 years.
Joseph Fearnley aged 20 years.
John Cooke aged 20 years.
John Hitchen aged 14 years.
John Woodcock aged 15 years.
John Buckley aged 24 years.
Thomas Beardshall aged 13 years.
Richard Beardshall aged 18 years.

James Chadwick aged 15 years.
Richard Chadwick aged 17 years.
Joseph Woodhead aged 13 years.
John Gelder aged 11 years.
Charles Haigh aged 23 years.
Aaron Hobson aged 26 years.
James Turton aged 13 years.
Joseph Gilberthorpe aged 18 years.
John Wainwright aged 11 years.
George Sedgewick aged 13 years.
David Woodhead aged 11 years.
Robert McLear aged 19 years.
John Harper aged 16 years.
George Steel aged 31 yeras.
Charles Steel aged 27 years.
Daniel Mellor aged 19 years.
George Hinchcliffe aged 28 years.
John Peach aged 17 years.
Edward Stansfield aged 22 years.
John Jessop aged 17 years.
George Clayton aged 23 years.
John Wroe aged 15 years.
William Whiteley aged 16 years.
George Whiteley aged 16 years.
John Riley aged 23 years.

At the inquest into the disaster, Joseph Littlewood of Cliff Bridge, fireman said that he had charge of the inspection of the pit before the men went down. About three o'clock on the morning of the accident he saw that the fire in the cupola was in order and then went into the workings with a safety lamp to test for gas. a signal was used to warn men of a dangerous place but he found the pit in perfect order and allowed the men to come down. he had been in the pit until a few moments before the accident.

The Coroner summed up the evidence and the jury brought in the verdict that:-

"We are of the opinion that efficient Regulations are not enforced in this district to prevent the use of naked lights in parts of coal mines where inflammable gas is known to exist and are further of the opinion that the recurrence of accidents involving so large a loss of human life, demands the immediate attention of Her Majesty's Government and would justify Parliament in framing such a code of regulations as would give greater security to persons employed in mining operations and request the Coroner to forward their sentiments to the Secretary of State for the Home Department."

At the inquest the men stated that they thought the ventilation of the colliery was good but this was because it was directed in one current. The men also stated that explosive gas was frequently found in the workings. The men were allowed to work with naked lights at their own discretion.

BEESTON MAIN. Leeds, Yorkshire, 17th. May, 1847.

It was reported that nine lives were lost in an explosion. It was thought to have been caused by some men breaking into old workings that continued gas which

came into contact with their naked lights. Six were killed on the spot and four were taken, badly injured to Leeds Infirmary where three of them died.

Those who died were:-

Joseph Longstaff aged 55 years.

George Oddy aged 29 years.

Aaron Bell aged 20 years.

George Bell aged 15 years.

William Westerman aged 12 years.

Charles Duck aged 14 years.

John Hall aged 10 years.

GERARDS BRIDGE. St. Helens, Lancashire. 2nd. June, 1847.

The colliery was the property of Messrs, Speakman, Caldwell and Company. On a Wednesday at about 4 a.m., the pit was working with men and boys below ground and boys and thirteen ponies. At 7 a.m., the explosion took place. All those in the pit escaped with the exception of eight men and boys who were working 1,000 yards from the shaft and they were suffocated along with three ponies. The coal caught fire and on Thursday was reported to '*be burning with great fury*'. No firedamp had been known in the pit prior to the explosion and it was reported that event though the mine was well ventilated, the men were provided with safety lamps but they did not use them, preferring to use candles.

Those who died were-

John Matthew aged 45 years, collier.

Peter Matthew aged 22 years, collier.

John Mathew aged 17 years, drawer.

David Matthew aged 15 years, drawer.

Joseph Matthew aged 12 years, drawer.

All sons of John who left a wife and several young children.

Joseph Worrall aged 50 years, collier who left a wife and five children.

Lohn Lee aged 17 years, drawer.

John Forest aged 12 years, drawer.

The jury brought in a verdict of 'Accidental Death' caused by gas which came from the combustion of the coal and caused the explosion.

FELLING. Tyne Main Pit. Felling, Durham. 22nd. June, 1847.

The colliery was owned by Messrs. Carr and Co. and the explosion occurred at night when there were very few in the pit and it claimed the lives of four men and two boys and severely injured three others. Eighteen horses and two ponies were also killed but two ponies escaped. Three out of the six who died were killed by the afterdamp and the others by concussion. The gas was supposed to have been generated in a flue of an underground boiler and been ignited by the ventilation fire. This was the view that was put forward at the inquest by T.E. Foster, viewer at the colliery. The explosion set the coal on fire.

Shortly after the blast, Thomas Bales, the underviewer, accompanied by the banksman, descended the shaft and found one man unhurt at the bottom. On going into the workings they found some alive but very badly burnt and the dead in a very mangled state. The bodies were brought to the surface during the night.

Those who died were:-

Edward Taylor, hewer, left a widow and four children.

James Collins, furnaceman, an old man.

John Chapman, hewer, left a wife.

Martin Greener, hewer aged 20 years.

John Gibbon, boy.

John Simpson, boy.

At the inquest. James Gladstone stated that they were waiting for a shot to fire when 'the fire came upon them' and burnt him and killed Greener who had a candle. There was not gas there and plenty of air and he could not tell whether the shot or the gas fired first.

Thomas E. Foster the colliery viewer gave a detailed description of the pit. He said:-

"The diameter of the John Pit is eight feet, depth to the Low Main Seam where she fired 102 fathoms. The William Pit is the upcast, 550 yards from the John, is eight feet in diameter and 116 fathoms deep. There were 60,000 cubic feet of air per minute descending. It went south for 300 yards to the Old Engine Bank and then one third went down the Engine Bank, the other two thirds continued south passing the New Engine, 600 yards from the downcast. It then went down the slope Drift (where Greener was at work) to the Seam 16 fathoms lower, being depressed by a dyke and 18 on the other side. The east air ventilated the workings in the East District (about 60 acres) and then the greatest portion ascended by a return stapple, 300 yards east of the five quarter stapple ventilation about eighteen acres and then proceeded to the furnace. A smaller portion ascended the five quarter stapple with the west air. The first 20,000 feet of air went down the Old Engine Bank and then the greatest portion went north, though about twenty eight acres, passed the John Pit on the north, and then mixed with the other air and proceeded to the upcast. The whole ventilated a waste of about 60 acres. A small portion passed by the side of the goaf and mixed with the return with the remainder to the east air. Near the upcast the air travels about four or five feet per second. In the stone drift (where Greener was working) and which was six feet high by five and a half wide, it travelled about nine feet per second.

The Davy Lamps were all provided with a tin shield which I consider perfectly safe. Thomas Hebburn, the keeper, was always going round the pit to see that they were right. The fire had not reached the New Engine Bank, the greatest damage was at the New Engine. It ceased working on Tuesday about half past four in the afternoon, and the explosion took place at half past nine. It was used for drawing coals up the New Engine Bank, caused by a dyke. The engineman put a quantity of coals on the fire to prepare for working about half past two in the morning. The fire was smothered and the damper shut to within two inches to prevent draft. It is my opinion that the gas accumulated under the boiler, from the coals put on the fire and had been ignited by the flame of the fire when it kindled up and then exploded. The boiler was lifted at the further end from the fire and two of the metal knees on which it hung were broken."

The jury returned a verdict of 'Accidental Death' and recommended that steps should be taken to prevent a similar occurrence.

KIRKLESS HALL. Wigan, Lancashire. 28th. June, 1847.

The colliery was known as the Higher Patricroft Colliery and was the property of the Kirkless Coal Company. It was between Ince and Aspall on the banks of the Leeds-Liverpool canal about two miles from Wigan..

A shot had been fired which set the coal on fire and before the fire could be dealt with, an occurred killing thirteen and injuring about thirty men and boys. Blasting was against the Rules and no one was allowed to go into the pit without a safety lamp.

Some of those known to be killed were-

John Cartwright.

John Berry.

John Rhodes.

Henry Hewson.

John Riley.

Samuel Evans.

Ashmore, a boy.

George Evans, underlooker.

Joseph Williamson, a boy who died on the way home.

Robert Williamson, his father.

Robert Southern who was missing and believed dead.

The injured were-

William Jackson.

William Currie

John Webster.

James Balshaw.

John Holcroft.

John Barton.

James Naylor.

Joseph Penman.

Eli Monk.

John Mills.

Thomas Laurenson.

Samuel Simpkin.

INCE HALL. Wigan, Lancashire. 30th. November, 1847.

There had been very heavy rain during November and the River Douglas, which was usually between eighteen inches and two feet deep but the rain had swelled it into a torrent, eight or nine feet deep. The river burst its banks and some of the water found its way into old workings and then into the new workings and four men, two boys and twelve horses were trapped and drowned.

The old workings were between 10 to 12 feet down and the current workings were 200 yards down. The flooding of the workings was put down to '*the intermediate owners who had robbed the barriers that had been left for the additional coal.*' There were over 600 colliers thrown put of work in the area and the shafts were flooded to a depth of between 40 and 60 yards

There was great concern for those who were trapped underground and the families of the men that were thrown put of work were thrown on the Poor Law. A meeting of colliers which was attended by about 500 and addressed by two colliers, Ingham and Bury. The result of the meeting was s that a petition was drawn up and sent to Parliament asking for help for the area. The petition read-

“To the Honourable House of Commons and Parliament assembled.

The Humble petition of the undersigned residing in and near Wigan. The wives, children, relatives and friends of the four men and two boys now in Lower Patricroft, humbly submit that on Tuesday and Wednesday last the water of the River Douglas broke into holes and overflowed into the Lower Patricroft and were the men were then working John Rutter the older, John Rutter the younger, Mathew Bates, Thomas Ruck, John Sherry and Michael Underwood, colliers. These six were not able to get out of the pit but whether dead or alive the petitioners can not tell. The rush of water had been so great that the engines of the coal masters have not been able to keep down the water with the present engine power to raise out the water and block them over will take months. We implore the House to send down some more engine power to raise the water and block the river for the opinion is that the six may be out of the water but not able to get to a shaft and that by great exertions their lives can be saved.”

There was little hope for the men and there is not record that the Honourable Members did anything to help the Wigan colliers.

NANTYGLOW. Monmouthshire. December, 1847.

The colliery was the property of Messrs. Bailey and eleven men were gassed and eight lost their lives. Among the dead were John Parkes and his two sons were killed. At the inquest it was heard that John Parkes and a party were careless in taking a candle into the workings but it was said that of the manager Mr. Whiteman had paid better attention, the men would not have done this. Whiteman was from Newcastle-on-Tyne and there was a body of opinion that ‘*one of their own*’ should be manager of the mine.

HEATHFIELD. Wolverhampton, Staffordshire. 9th. February, 1848.

The colliery was the property of Messrs. Salter and Raybould. Seven men who had been working during the night were replaced at 6 a.m. by twenty nine others and soon after they had descended, the explosion took place. The shock was felt throughout the neighbourhood and flames shot from the shaft. A man who had fixed his candle under the coal was supposed to have caused the explosion and was found buried under an enormous mass of coal. Another account gave The cause as a sudden outburst of an enormous amount of gas and yet another to the negligence of a doggy. Several were injured and sixteen died as a result of the explosion. Thirteen escaped and five horses were killed.

Those who lost their lives were:-

John Lowe.

Henry Broadway.

John Casetty.

Robert Harper.

Richard Bullock.

William Noak.

Walter White.

George Bird.

J. Taylor.

William Johnson.

James Sudley.

John Grice.

Joseph Halford.
Absolom Sleator.
Charles Horton.
P. Taylor.

The inquest was held before Coroner G. Hinchcliffe at the Dartmouth Hotel when the jury returned the verdict that:-

“That it had been caused through the negligence of John Meek, the doggy, that the men lost their lives and therefore we return a verdict of manslaughter against him.”

Meek, aged between 30 and 40 years, was bound over to appear at the next Staffordshire assizes.

KIRKLESS HALL. Wigan, Lancashire. 28th. June, 1847.

The colliery was known as the Higher Patricroft Colliery and was the property of the Kirkless Coal Company. It was between Ince and Aspull on the banks of the Leeds-Liverpool canal about two miles from Wigan..

A shot had been fired which set the coal on fire and before the fire could be dealt with, an occurred killing thirteen and injuring about thirty men and boys. Blasting was against the Rules and no one was allowed to go into the pit without a safety lamp.

Some of those known to be killed were-

John Cartwright.
John Berry.
John Rhodes.
Henry Hewson.
John Riley.
Samuel Evans.
Ashmore, a boy.
George Evans, underlooker.
Joseph Williamson, a boy who died on the way home.
Robert Williamson, his father.
Robert Southern who was missing and believed dead.

The injured were-

William Jackson.
William Currie
John Webster.
James Balshaw.
John Holcroft.
John Barton.
James Naylor.
Joseph Penman.
Eli Monk.
John Mills.
Thomas Laurensen.
Samuel Simpkin.

INCE HALL. Wigan, Lancashire. 30th. November, 1847.

There had been very heavy rain during November and the River Douglas, which was usually between eighteen inches and two feet deep but the rain had swelled it

into a torrent, eight or nine feet deep. The river burst its banks and some of the water found its way into old workings and then into the new workings and four men, two boys and twelve horses were trapped and drowned.

The old workings were between 10 to 12 feet down and the current workings were 200 yards down. The flooding of the workings was put down to '*the intermediate owners who had robbed the barriers that had been left for the additional coal.*' There were over 600 colliers thrown out of work in the area and the shafts were flooded to a depth of between 40 and 60 yards

There was great concern for those who were trapped underground and the families of the men that were thrown out of work were thrown on the Poor Law. A meeting of colliers which was attended by about 500 and addressed by two colliers, Ingham and Bury. The result of the meeting was that a petition was drawn up and sent to Parliament asking for help for the area. The petition read-

"To the Honourable House of Commons and Parliament assembled.

The Humble petition of the undersigned residing in and near Wigan. The wives, children, relatives and friends of the four men and two boys now in Lower Patricroft, humbly submit that on Tuesday and Wednesday last the water of the River Douglas broke into holes and overflowed into the Lower Patricroft and were the men were then working John Rutter the older, John Rutter the younger, Mathew Bates, Thomas Ruck, John Sherry and Michael Underwood, colliers. These six were not able to get out of the pit but whether dead or alive the petitioners can not tell. The rush of water had been so great that the engines of the coal masters have not been able to keep down the water with the present engine power to raise out the water and block them over will take months. We implore the House to send down some more engine power to raise the water and block the river for the opinion is that the six may be out of the water but not able to get to a shaft and that by great exertions their lives can be saved."

There was little hope for the men and there is not record that the Honourable Members did anything to help the Wigan colliers.

VICTORIA PIT. Dukinfield, Lancashire. 23rd. February, 1848.

The colliery was the property of Messrs. Swire and Lees. The pit was the deepest in the neighbourhood and great pains had been taken to stop the men working with candles but the attempts had failed. It was thought that someone went into an old part of the mine with a candle. Seven lost their lives in the explosion and several others were seriously injured.

At the inquest on four of the deceased, which was held before Mr. Hudson, Coroner at the Slape Tavern, Dukinfield, the underground steward and surveyor. Charles Turner said:-

"The depth of the shaft was 345 yards and from the bottom there was a down brow 300 yards long and they had gone north from the bottom of that brow, 542 yards. At the end of this there was a jig brow 65 yards up and 13 yards up the jig brow there was another level 13 yards long. There was another level about 80 yards and this is here the accident happened. Mr. Turner went on to say that there was no danger in that part of the pit until they cut through into the gob. It was known that caution was required from the workmen while they were doing this and they were provided with safety lamps. The colliery had rules that the workmen would be fined if they did not use lamps after they had been cautioned to do so. The two Aspdens were employed in driving a level above the horse road and they had to drive into a part where the coal had been got and where it was known that firedamp had accumulated. The person working next to them was Levi Broadbent who was cutting

a 'thrill' from his level to the level above. Richard Bradshaw was driving above Broadbent. James Mayers was a waggoner for Bradshaw and was hooking a tub on the jig brow when the accident occurred. George Stansfield, James Smith and William Green were also at work on the same brow but on the other side and William Stansfield was on the horse road. It was the two Aspdens who broke through to where the inflammable was and it was well known to all that would have to carry their lamps while the gas was carried off in the ventilating air."

John Daniel Burton of Newton Wood, the underlooker took up the story. He knew the place where the explosion took place and had been down the pit measuring up only an hour before and was in the pit when it took place a little after dinner. He saw the Aspdens at work with safety lamps and saw Levi Broadbent and his son and measured their work. He noted that Broadbent and Mayer were working with candles. The air was good and he told them to use lamps as soon as the Aspdens got through into the gob. He cautioned the Aspdens and told them when they got through to stop the hole and inform the others. Burton helped to get the bodies out and found the Broadbent's lamps both with their tops off and there was other evidence of lamps found with their tops off after the explosion.

The Coroner then commented on the evidence and explained the law with reference to manslaughter and that it would be for the jury to consider where the neglect had been. The jury withdrew for about twenty minutes and the foreman announced that they had formed a verdict of 'Accidental Death.'

EAGLESBUSH. Neath. Glamorganshire. 29th. March, 1848.

The colliery was owned by Messrs. Penrose and Evans and was situated between New Heath and Brittanferry, one and half miles from Neath. The mine was entered by a drift down which the men walked. It extended for about 250 yards straight and then turned south. There were several stalls at the point where it turned in which three to five men worked. The mine had no artificial ventilation, in fact, the way in which the coal was reached presented difficulties in ventilation. The coal was known to be fiery and the quantity of air in the mine was small and it passed over a small furnace situated at the surface near the outcrop of the seam. Naked lights were allowed in the colliery.

There was a large accumulation of gas in the old stalls and an explosion took place at the far end of the workings at about 3 p.m. The gas that was in all the stalls caused a second explosion. There were about thirty at work in the men at the time and twenty were killed. The colliery was shattered and the plant and machinery blown up the shaft. Most of the men who died, died from the effects of afterdamp and several were found to have been trying to get out along a level but their progress had been blocked by wagons in the road.

Those who lost their lives were:-

John Grey whose wife was expecting their first baby.

William Grey, single.

John Jenkins, single.

William Worthy, left two children.

John Morris left six children.

John Davies, single.

John Hopkin, single.

Thomas Christmas, left two children.

Benjamin Hopkins, left six children.

Robert Thomas, left eight children.

Joseph Thomas, son of Robert.
John Thomas, left seven children.
Morris Protberoe, single.
Leyson Reynolds, single.
Evan James, single.
William Griffiths, left five children.
Solomon Mainwaring, left one child.

It was reported that five others were in a dreadful state. Some of these must have died as the official death toll was twenty men and boys.

The inquest was held before Coroner Overton at Neath Town Hall. Rosser Thomas told the court:-

“On the day of the accident, I considered myself out of danger. I can not say whether the men further out were in danger or not. On that day I took the lamp out several times to cool, it was so warm. My partner took great care of his lamp. I did not think there was any danger whatever. The workmen had to furnish their own lamps. The Company have no one to inspect the lamps, only the colliers themselves.

David Griffiths is employed by Messrs. Penrose and Evans to go into the works every morning. He used to go into the colliery when he had time and does not go in every morning. His orders were to do so and sometimes he went in after the men. I cannot say that David Griffiths was the first down on that morning but I know he went down before half past eight that morning because I saw him coming up when I went down. There were eight men working in that airway. I worked until half past two in the afternoon of that day and we gave up work because of the accident. I do not know where the explosion took place. I saw Thomas Christmas, the deceased, on Wednesday morning and he had seen sulphur in the place where I was. I heard the noise of the explosion and saw the sulphur near the airway. I ran for my life with my companions down and old heading and into the drift.”

Detailed evidence was taken on the method of ventilation at the colliery which was by a furnace. The Coroner then summed up and a verdict of ‘Accidental Death’ was returned.

After the disaster, a pair of Sturvé’s air pumps were installed which greatly improved the ventilation of the mine.

VICTORIA IRON WORKS. Aberdare, Monmouthshire. 24th. April, 1848.

LODGE PIT. Dawley, Shropshire. 29th. May, 1848.

The colliery was the property of Mr. Botfold and eight men were being lowered to their work. When they had gone down about 50 yards, the shaft broke and they were hurled down the shaft to their deaths. The inquest found that the machinery was defective.

8 victims.

BLACK VEIN IRONSTONE MINE. Aberdare, Glamorganshire. June, 1848.

It was reported that eleven were killed in an explosion in the pit.

VICTORIA IRON WORKS. Aberdare, Monmouthshire, 21st. June, 1848.

The No.9 Black Vein ironstone pit was at the Victoria Iron Works and mined both coal and iron ore. Mr. James Beaumont was the manager and John Frazer, the agent. The winding was done by a water balance by which a tank of water was filled and this counter balanced the bucket. When the water tank got to the bottom of the shaft, a valve at the bottom of the tank, opened and the water went into the sump to be pumped to the surface and used again..

The men were descending to work and when some had already gone down eleven men got into the bucket. When they were about halfway down the chain began to run at a great speed and the bucket and then crashed into the bottom of the shaft. The chain on the other side of the pit came to the surface with the only the cross piece. On investigation it was found that the bucket with its contents and the balance chain had descended on the poor fellows. They were killed on the spot.

Those who died were:-

Thomas Owen aged 18 years, unmarried.
James Davies aged 39 years. left a widow and two children.
John Harris aged 47 years. left a widow and two children.
Emanuel Stilman aged 27 years left a widow.
Isaac Williams aged 23 years, unmarried.
John Harris aged 47 years, left a widow and four children.
David Thomas aged 29 years left a widow and two children.
Richard Edwards aged 26 years, unmarried.
J Phelps aged 29 years, unmarried.
R Williams aged 27 years, unmarried.
John Morgan aged 32 years, left a widow.
Herbert Chivers aged 13 years.

An investigation revealed that the bucket at the pit bottom, which should have been balancing the descending bucket, had somehow become detached from the rope. The men in the bucket had nothing to act as a drag on them. It is recorded that the Victoria Company gave every assistance to the grieving relatives.

POLKA PIT. Murton, Durham. 15th. August, 1848.

The colliery was the property of the South Hetton Coal Company. There were about one hundred men and boys working in the pit at the time of the explosion and fifteen were killed and many others burnt. Candles were used throughout the mine and the death toll would have been much higher but for the presence of mind of one workman who held the survivors to the shaft.

Immediately after the report of the explosion was heard, Henry Pace and another overman descended the shaft to find out what had happened and they found that the explosion had been of a very violent nature though not very extensive. They found the body of Henry Haddock, a boy who was in the habit of carrying compass for the back overman, Edward Noble. The survivors decided that they should try to get out by the return and many were successful.

Those who died were:-

Edward Noble, backoverman aged 23 years, left a wife and child.
George Haddock aged 12 years.
Thomas Stubbs aged 27 years, bearer left a wife and child.
John Dickenson aged 15 years, putter.

Matthew Berson aged 16 years, putter.
William Raffle aged 32 years, left wife and three children.
James Hall aged 40 years, deputy overman left a wife and family.
Thomas Lawson aged 41 years, hewer, left a wife and eight children.
Richard Bloomsfield aged 29 years, hewer.
William Baldwin aged 23 years. left a wife and stepson.
Joseph Tones aged 66 years, hewer.
Ralph Dawson aged 31 years, hewer left a wife and child.

Came out injured and burnt and not expected to live were:-

David Rumley, putter aged 12 years.
Thomas Lawson aged 14 years, putter.
William Raffle jnr.
John Robson.

The bodies were buried in South Hetton churchyard.

The inquest was held before Mr. William Burgess at the Murton Inn and the jurors went to the houses of Noble and Haddock to view the bodies which were badly scorched.

ALBION. Hindley Green, Lancashire. 28th. August, 1848.

The colliery was the property of Messrs. Wood and Company. Soon after six in the morning the men went down to work with lighted candles although lamps were provided. The gas fired at half past six and a terrific explosion took place, driving coals up the shaft and shaking all the surrounding buildings. The headgear was undamaged and several men immediately volunteered to search for the men below. They were speedily let down the shaft and twelve persons were found in the pit but fortunately the whole of the workforce had not arrived at the pit.

Four were found dead and dreadfully mutilated, the fifth, a boy named John Houghton was found alive but his thighs were broken and his body penetrated by a pick handle. This was taken out by Mr. Bridecake, surgeon of Leigh but he did not survive more than half an hour and other medical men arrived at the colliery to render what assistance they could.

Those who died were:-

John Ashcroft aged 49 years of Hindley Green who left a wife and six children.
Richard Goulding aged 21 years who left a wife and child.
William Hampson aged 13 years, drawer.
John Broughton aged 13 years, drawer.

Those seriously injured were:-

Bryan Tickle aged 25 years with a wife and two children.
Joseph Gregory aged 35, very severely bruised.
Martin Wild who had a wife and three children.
Thomas Topping.
A man named Tatton.

The inquests on the first four were held by Mr Heyes of Prescott and on Houghton, before Mr Rutter of Manchester or his deputy as he died in the township of Leigh.

SENELEY GREEN. Ashton-in-Makerfield, Lancashire. 24th. October, 1848.

The explosion occurred in Mr. Stock's new colliery and claimed the lives of five people who were working with naked candles.

WHINNY HILL. Cleator Moor. Cumberland. 28th. October, 1848.

The colliery was the property of the Haematite Mining Company and thirty men and boys were killed in an explosion. At the inquest into the men's deaths, evidence was given that the colliery was in a very dangerous state and the atmosphere, foul to within thirty five yards of the shaft. The accident took place when a workman took the top off his lamp to light his pipe.

The married men who died were:-

James Thompson aged 26 years of Goose Butts, left a wife and four children.

Thomas Aitken aged 39 years of Goose Butts, left five children.

Richard Lawson aged 46 years of Hensingham, left seven children.

James Milby aged 26 years of Goose Butts, left two children.

John Cummins aged 24 years of Hensingham, left two children.

George Vetch aged 47 years of Hensingham, left nine children. Body not found.

Daniel Loebery aged 32 years of Whitehaven, left a child.

William Lish aged 23 years of Cleator Moor, left two children.

John Barwise aged 28 years of Hensingham, left two children.

John Atkinson aged 32 years of Padstow, left two children.

John MacDouall aged 46 years, left four children. Body not found.

Dennis Savage aged 26 years of Whitehaven, left a child. Body not found.

Patrick Kelly aged 23 years of Low Harris.

John Hall aged 30 years of Mill Hill, left three children.

Patrick Monohaghan aged 41 years of Whitehaven, left seven children. Body not found.

Thomas Fitzsimmons aged 25 years of The Moor. Body not found.

Alexander Davidson aged 23 years of Goose Butts, left one child.

The unmarried were:-

William Dryden of Whitehaven aged 23 years.

John Lawson of Hensingham aged 16 years.

Robert Lawson of Hensingham aged 12 years.

Charles Loebrey of Whitehaven aged 21 years.

James Dowie aged 18 years of Whitehaven.

John Aikin aged 17 years of Goose Butts.

Robert Clark aged 13 years of The Moor.

Henry Waged 19 years of Goose Butts.

John Milby aged 18 years of Mill Hill.

James Harrison aged 29 years of Goose Butts.

George Watson a stranger. Body not found.

John Ward aged 18 years of Bragg's Cottages. Escaped but died later.

John Disley aged 22 years of Hensingham. Body not found.

Edward Bradley and

Thompson Piper, the furnaceman, escaped.

The inquest into the disaster was held before Mr. Bragg, Coroner. Robert Foster, the head overman at the colliery said that on the day of the explosion he was at home but went to the pit as soon as he was told of the disaster. He, and a party of

explorers, managed to get about half way down the shaft but had to return because of the 'stythe'

DARLEY MAIN. Worsborough Dale, Yorkshire. 24th. January, 1849.

This was the greatest disaster in Yorkshire since the Oaks Colliery in 1847. The Darley Main Colliery was in Worsborough Dale about a mile south east of Barnsley and two miles from the Oaks Colliery. The explosion occurred in the Barnsley Coal which was about eight feet thick but not very deep. There were two shafts at the colliery, near to each other on the south side of the workings. One served as a pumping pit and the other as a winding and downcast pit. There was at third shaft a little distance away which served as the upcast but was also used for drawing water for at least 12 out of 24 hours. The depth of the pumping and winding shafts was 393 feet and that of the upcast shaft, 325 feet. The downcast and upcast shafts were nine and a half feet in diameter.

The coal was worked by an intermediate system of bank work which was the custom in the district. The bank faces were about 25 to 30 yards wide and the system made many closed goaves which could harbour reservoirs of firedamp. The excavations covered about 120 acres at the time of the accident. All the banks to the rise of the level had been exhausted with only pillars left to support the roads until the coal in the dip banks was worked and this was the work that was going on at the time of the disaster.

The ventilation current was provided by a furnace but its effects were minimised by the fact that water drawing operations went on in the upcast shaft. The air went round the faces of the banks but all the goaves were not covered with the exception of a small hole that was formed by taking a brick out of a stopping to let in a little air. No accurate measurements of the quantity of ventilation had been made but it was thought that about 9,000 cubic feet of air per minute was entering the mine but other accounts put the figure as low as 6,000 cubic feet. The emission of firedamp was small and the colliery possessed about two dozen safety lamps but naked lights were in general use throughout the workings. Some times, a shovel was placed as a sign that candles were to be kept low, as the upper air was known to be dangerous.

There had been small explosion at the colliery. In April, 1843, two persons were injured, one of whom died and in February, 1847, six died. As the result of another explosion in July, 1847, two men were badly burnt and later died. On this occasion the jury expressed their opinion that the numerous accidents reflected the bad management of the colliery.

The day before the explosion there had been a violent storm and the men had been brought to the surface because the banksman was unable to continue his work because of the strength of the wind. On the morning of the disaster, the pit was thought to be in a satisfactory state in the opinion of the bottom steward and between 5 and 6 a.m., 101 men and boys descended and started work. All went well until 11.20 a.m., when the explosion erupted at the surface and a dense jet of smoke and coal dust came from the shaft.

As soon as the blast had subsided, measures were taken to go down the pit. Mr. Broadhead, the engine tender and Mr. Armitage, a labourer were the first to get to the scene of the explosion. It was good fortune that the ventilating current after the accident passed along the main level from the pit bottom to the underground engine house, about 260 yards inbye. Messrs. James Beaumont and Mr. G.P. Maddison who came from neighbouring collieries, were at the pit within half an hour and continued to work with Mr. Locke, the viewer of the Darley Main Colliery, who did not get to the pit until midnight and they continued with their dangerous task until all the victims of the explosion had been brought to the surface. Many of the victims were

carried out of the pit dead from the effects of afterdamp and some later recovered at the surface. Even so seventy five lost their lives and eight of the horses employed underground were lost.

An account of the disaster appeared at the time in a newsletter in Barnsley.

“On Wednesday January 24th, 1849, at about 11 o'clock, a most dreadful explosion took place at Mr. G. Jarratt's colliery called the Darley Main Colliery at which time 100 persons were working in the pit. The sacrifice of life which followed is the greatest which has taken place in any colliery since the great explosion at the Oaks Colliery in March 1847.

The explosion was perceptibly felt on the surface of the ground in the locality of the place soon caused hundreds of persons to hurry to the scene amongst the fore most of which were to be seen the almost frantic wives, parents and friends of the unfortunate miners for whose safety the worst apprehensions were felt.

The most effectual assistance was immediately rendered by the prompt help of those on top of the shaft and as quickly as possible the descent was made into the pit where the most awful condition was presented by the sufferers that can possibly be imagined. a considerable number of maimed and burned and what few were miraculously preserved unharmed were in or near the bottom of the shaft, fearfully and anxiously waiting for deliverance from their dreadful position and who were promptly extricated.

it was unhappily too soon ascertained that the greater part of the miners and others employed in the pit were buried in the devastation caused by the explosion and up to Thursday night, the 25th. inst., not less than 75 dead bodies were lying in the adjoining houses and buildings contiguous with the place, the greater part of whom were found dead in the workings at the bottom of the pit.

The following is a list of names of those who have been sacrificed in this appalling calamity.”

The married men were-

Henry Firth aged 34 years who left a wife and four children.

Joseph Sager aged 29 years, who left a wife and six children.

John Burton aged 26 years who left a widow.

William Hunbley aged 35 years who left a wife and four children.

Edward Utley aged 36 years, who left a widow.

John Winder aged 31 years, who left a wife and four children.

George Guest aged 41 years, who left a wife and one child.

George Loy aged 40 years who left a wife and five children.

Amos Harper aged 37 years who left a wife and seven children.

Charles Brook aged 37 years who left three children.

Edward Atkinson aged 36 years who left a wife and two children.

George Field aged 32 years who left a wife and two children.

George Barraclough aged 36 years who left a wife and four children.

John Taylor aged 26 years who left a widow.

George Tetley aged 23 years who left a wife and one children.

James Seddons aged 26 years who left a wife and two children.

John Beevers aged 56 years who left a wife and two children.

Edward Hammond aged 20 years who left a wife.

Thomas Darwin aged 28 years who left a wife and two children.

David Brown aged 37 years who left a wife and two children.

John Parsons sen. aged 48 years who left a wife.

Thomas Hammond aged 39 years who left a wife and four children.

John Smith aged 36 years who left a wife.
John Darwin aged 36 years who left a wife.

The single men and boys were-
Edward Rennison aged 18 years.
John Sykes aged 18 years.
George Fisher aged 23 years.
Charles Wood aged 17 years.
Hugh Burkinshaw aged 22 years.
William Billington aged 11 years.
William Hutchinson aged 24 years.
Abram Sykes aged 25 years.
Robert Winter aged 28 years.
William Guest aged 15 years.
James Burkinshaw aged 19 years.
Edward Billington aged 24 years.
Francis Batty aged 15 years.
John Charlesworth aged 13years.
Joseph Charlesworth aged 14 years.
George Harper aged 10 years.
John Loy aged 15 years.
Ralph Taylor aged 25 years.
Joseph Swift aged 25 years.
john Gilliatt aged 11 years.
George Turner aged 21 years.
Isaac Holland aged 15 years.
Charles Hammond aged 25 years.
Patrick McDonald aged 19 years.
William Hiland aged 11 years.
Thomas Firth aged 45 years.
William Goldthorpe aged 13 years.
Thomas Utley aged 12 years.
John Hartley aged 25 years.
William Brook aged 14 years.
Joseph Guest aged 16 years.
John Parsons jur. aged 20 years.
Thomas Mooney aged 15 years.
Thomas Gilliatt aged 19 years.
John Kaye aged 18 years.
William Holland jnr. aged 11 years.
Joseph Sells aged 10 years.
William Parsons aged 13 years.
William Hinchcliffe aged 2 years.
Samuel Goodliffe aged 19 years.
Isaac Swift aged 23 years.
George Winter aged 19 years.
William Hardisty aged 11 years.
and James Ashton aged 17 years, alias '*Lancashire Jim.*'

“The funerals of the sufferers took place at Worsborough and Barnsley churches on Sunday the 27th. and presented a scene of the most solemn and overpowering description. The train of mourners was immense and the number of person who were present to witness the interments was very great. The

church at Worsborough could scarcely accommodate the numbers of the families of the deceased.

Several praiseworthy efforts are being made to relieve the wants of the suffering families of the deceased miners."

A Relief Fund was opened to which the Colliery Company donated £200, Mr. F.W.T.V. Wentworth Esq., £100, John Jeffock, Esq., £50, Earl Fitzwilliam £50, Joseph Locke, Esq., £50 and H.R.H. Prince Albert donated £25 for the relief of the widows and orphans.

The mine was examined after the disaster by many of the eminent mining engineers of the day. Mr. Nichols Wood of Hetton and Mr. Birham, viewer to Earl Fitzwilliam had been summoned by the Coroner to examine the workings. Mr. Goodwin of Messrs. Charlesworth's Collieries and Mr. J.T. Woodhouse of Ashby-de-la-Zouche were also called. Mr. Tremeneer, Commissioner under Lord Ashley's Act and Mr. Warrington Smyth, mining engineer to the Geological Survey attended on behalf of the Government.

It was found that the explosion had taken place in the goaf furthest from the shaft to the north but a fire of less intensity had taken place nearer the shaft which led to the conclusion that there had been two explosions. The main explosion was thought to have been caused by firedamp that oozed out, or had been driven out by a fall of roof and had come into contact with a miner's naked light.

The inquest into the disaster was conducted by Mr. Badger, Coroner, in the house of Mr. Harrison, The Mason's Arms in Worsborough Dale on Saturday 26th. January for the purpose of identification of the dead. The full inquest was reconvened on the 8th. February. At the request of the Coroner Mr. Tremeneer addressed the jury and put forward the desirability of the Government to inquire into coal mines and put this in his report to Sir George Grey. He also pointed out the necessity of a higher standard of education among those entrusted with the management of mines. Mr. Warrington Smyth pointed out the various sources of danger which, he believed might have been foreseen and perhaps corrected by a properly qualified Government.

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

"We find a verdict of Accidental Death on the seventy five bodies we have viewed caused by one or more explosions of carburetted hydrogen gas or inflammable air, which took place on the 24th. January last in the Darley Main Colliery, and we strongly recommend to the proprietors, that a better mode of ventilation be adopted before they recommence work at the mine as a preventative against any similar occurrence and we think, from the evidence given before us, that the removing of the machinery used for drawing water out of the upcast shaft is essentially necessary, also as to allow the air passing out of the mine to have a better free outlet. And we also desire that Mr. Badger, the Coroner, report to Sir George Grey, and that we make it known that Her Majesty's Government, that we think it is advisable that they should appoint a scientific and practical person, to occasionally inspect the collieries in this district and see that there is proper ventilation, and hear any complaint by the workpeople employed therein."

The subscription fund for the dependants of the victims soon reached the sum of £1,300.

VICTORIA. Ashton-under-Lyne, Lancashire. February, 1849.

An explosion at the colliery killed five.

BIRD-IN-TH'-HAND. Ecclestone, Lancashire. 26th February, 1849.

The colliery was the property of David Bromilow and Company. There were nine in the pit at the time of the explosion and it was supposed to have occurred by one of the colliers taking the top off his lamp. Seven people and a pony were suffocated and two others burnt and not expected to recover.

Those who died were:-

Robert Johnson,
William Porter,
Isaac Ball,
William Palmer,
William Platt,
John and
Peter Garvey.

INCE HALL. Middle Patricroft Pit. Hindley, Lancashire. 6th. March, 1849.

The colliery was the property of the Ince Hall Coal and Cannel Company and was known as the Middle Patricroft Pit and was a very short distance from, Messrs. Gidlow's cotton mill on the road from Wigan to Hindley and about a mile and half from each place. The colliery worked two seams, the Five Foot and the Four Foot. The accident happened in the Five Foot seam. which was from 190 to 200 deep at the pit mouth. The Four Foot was about twenty yards deeper in the shafts. There were two shafts about twenty to thirty yards apart and each served one seam only but communicated for the purpose of ventilating the pit. The downcast was at the Four Foot mine and the upcast at the Five Foot through which the air, after circulating ascended with the smoke of the furnace at the foot of the Five Foot shaft.

About twenty six hands, the usual number had descended to their work about six in the morning. After the report of the explosion every effort was made to find out what had happened and the managers of the colliery along with Mr. James Lancaster, one of the firm, descended the pit. From the fact that most of them were found with their clothes on, it was concluded that the explosion occurred almost immediately. Twelve were killed and two seriously injured. Of the dead one died soon after being brought to the surface and one was missing, the rest were found to be dead.

Twelve or thirteen came out of the pit uninjured and some said that in their part of the pit they felt little of the explosion. In a short time the other parts of the pit were examined and by eleven o'clock eight had been brought put dead.. An old man, John Lewis lost three sons on the explosion and he was so dreadfully burned that he died about an hour afterwards. By midday it was thought that all were out of the pit but a poor woman named Pedar came in search of her husband and said he was still in the pit. Renewed searches were made with no result except for the discovery of his hat and it was decided to make another search when the fumes had cleared from the pit.

From the exploration it was concluded that the explosion had originated about 300 yards from the shaft but its cause remained a mystery. Ellison, the underlooker stated that he had examined the workings before the men went in and he had reported all was safe and several who got out of the pit said that the air was good and strong.

Those who lost their lives were:

Absolom Mather.aged 19 years, drawer.

William Affleck aged 20 years, collier.
John Bennett aged 11 years, drawer.
John Swanton aged 18 years, drawer
Thomas Boardman aged 19 years, drawer.
George Taylor aged 23 years, collier.
George Lewis aged 15 years, drawer.
Thomas Lewis aged 15 years, drawer. Twin of George.
Matthew Lewis aged 13 years, drawer.
John Lewis, father of the above three.
John Peddar,

Those injured were:-

Stephen Yates and John Sharples, both badly burnt.

On further investigation it was found that one of the workmen had gone in with a naked candle against orders of the fireman who had a short time previously out up a firedamp board which no man should pass when they saw it any part of the mine.

At the inquest held before Mr. Heyes at the Walmesley Arms, Ince, John Peddar's body had been found much more burned than any of the others and it was concluded that he had entered a foul part of the mine with a lighted candle. The jury expressed themselves satisfied with the ventilation of the mine and with the regulations enforced but that the regulations had been sadly neglected by the workmen themselves. They returned an verdict of 'Accidental Death'.

WERFA. Aberdare, Glamorganshire. 16th. May, 1849.

There was an explosion reported at the colliery in which three were killed and two were not expected to survive. Twelve were injured in all when a man with a Davy lamp went into a heading which was fouled and he was followed by a boy with a candle at which the gas exploded. A previous explosion had occurred at the colliery a week before. In their verdict, the jury recommended that a fireman be employed to inspect the works before the men were allowed to enter.

One of those burnt died and at the inquest into the death of the man named, Pugh before Mr. Overton, Coroner a verdict of 'Accidental Death' was recorded

LLANTWIT. Pontypridd, Glamorganshire. 19th. May, 1849.

The colliery was the property of Mr. Thomas Powell. On the morning of the disaster eighteen men stepped into the carriage which was a water balance. They were warned of overcrowding but did not listen. The winding went well for a while but then the heavy carriage overpowered the brake and crashed 96 yards into the sump. A massive chain, 146 yards long followed them down. Seven lives were lost.

The lives lost were:-

William Jenkins aged 46 years, single,
John Jones aged 46 years, married,
Thomas Rees aged 50 years,
Joseph Rees aged 10 years, son of Thomas,
Samuel Rogers aged 21 years, single,
John Williams aged 21, single. and
John Williams aged 16 years, single.

Also in the carriage were:-

David Hopkins,
William Jenkins,
Jenkin Jenkins,
John Jones,
Morgan Rees, son of Thomas,
Thomas Richards,
Zachariah Williams,
two men named David Williams,
William Willams and one not named.

The inquest was held at the Bush Inn and evidence was given by Thomas John, engineer and William Hassakuk, the surveyor of the mine. A verdict of 'Accidental Death' was returned.

HEBBURN. Hebburn, Durham. 5th. June, 1849.

The pit was the property of Messrs. Easton and Company had not been working from Saturday to Tuesday when the explosion occurred about 6.30 a.m. The pit was well ventilated with roads from five and half feet to 12 feet high but it was known that firedamp lodged in the cavities in the roof.

There were about 100 men at work at the time and the accident was confined to the north west part of the mine where all were killed with the exception of one man. The explosion, which occurred in the Bensham seam, claimed thirty three lives and many of the bodies were mutilated. William Bell was brought out alive but injured and he recovered.

There was little indication on the surface of the events below, just smoke and dust from the upcast shaft which was noticed by the banksman who gave the alarm. George Scott, the overman to make enquires but no one underground could tell him anything and he went into the workings where he met another overman, Thomas Clark who told him than an explosion had taken place. The two went further into the workings but they had to retire when the encountered chokedamp.

They waited a short time and tried again when they managed to get into the workings and found that all had perished with the exception of William Bell who was found unconscious and sent to the pit bank. Throughout the day the corpses were recovered and removed to the surface where a crowd had gathered round the shaft where they remained in silence as the bodies arrived at the surface. By nine o'clock at night, thirty bodies had been recovered and only one Abraham Taylor remained below.

Those who lost their lives were:-

George Turnbull aged 41 years, left a wife and six children.

E. Wilson aged 12 years.

G. Longstaffe aged 33 years, left a wife and 4 children.

S. Longstaffe, aged 12 years, his son.

George Watson aged 35 years, wife and four children.

Thomas Laverick aged 33 years, left a wife and four children.

William Richardson aged 45 years, wife and six children.

John Wilson aged 33 years. wife and four children.

Thomas Young aged 12 years.

Richard Lowes, widower aged 37 years.

George Laverick aged 22 years.

Robert Smith aged 18 years.

James Wardle aged 17 years.

William Youll aged 51 years, wife and seven children.
Thomas Richardson aged 20 years.
John Lashley aged 16 years.
Thomas Cassady aged 23 years.
Christopher Charlton aged 28 years.
Joseph Davison aged 26 years, wife and child.
Thristam Richardson, aged 45 years, wife and two children.
John Hay aged 14 years.
Robert Dinnison aged 42 years, wife and three children.
Robert Dinnison, aged 11 years, his son.
James Lawcock aged 68 years, wife.
Joseph Nixon aged 19 years.
John Windlow aged 60 years. widower and five children.
Robert Hooper aged 12 years.
John Dawson aged 53 years.
Hailes Richardson aged 19 years.
William Shillaw aged 22 years.
John Willis aged 12 years.
Nicholas Barnfather aged 13 years.
[Abraham Taylor, married with six children.

The inquest took place before J.M. Favell, coroner at the Ellison Arms on the bodies of Thomas Young and John Hay. William Maxwell, surgeon to the colliery said that he was sent for about 7 a.m. when he went to the colliery and found the victims at the surface. He found many were burnt and others had succumbed to the effects of afterdamp.

William Bell, a pitman, said that he was working in the pit on the morning of the disaster. He was knocked down and rendered deaf and while he was making his way to the shaft he fell and knew nothing until he found himself at home. There had been no complaint about the ventilation in the pit previous to the accident and he had not been cautioned on that morning. The air was a good where he was working with his candle.

James Easton, the owner of the colliery gave the jury a detailed account of the colliery. The Bersham seam at the 'A' Pit was at a depth of 161 fathoms. The 'A' pit was the downcast shaft and was 12 feet in diameter and the 'C' pit was the upcast and 12 feet in diameter and sunk to a depth of 145 fathoms and the air travelled 840 yards from the upcast to the downcast shaft but the air had travelled 1,232 yards from the downcast to where the explosion took place. The mine was worked by candles.

The district that fire was under the charge of Richard Lowes who had gone to work before the men and inspected the air but he had no lamp and Mr. Easton thought the explosion had been caused by gas accumulating at the face.

The proceedings went on for two days and the coroner summed up for two hours when a verdict of 'Accidental Death' was returned together with the recommendation from the jury that the deputies should go down the pit for at least an hour before the men to examine the mine.

LAFFACK. St. Helens, Lancashire. 23rd. June, 1849.

The colliery was the property of Mr. J.T. Johnson and the explosion killed eight and injured a further nineteen. The shaft was 160 feet deep to the Rushy Park seam. A new shaft had recently been constructed to improve the ventilation which occurred in a slant in which 60 to 70 men were at work. The blast was very violent

and the planking was blown off the pit top fatally injuring the banksman. The accident occurred through '*long practised obstinacy*' of one of the colliers who would not work with a safety lamp but used a candle. The owner did not know of the situation but it was well known among the workmen.

Those who died were:-
J. Derbyshire, banksman,
R. Norcross,
T. Atherton,
J. Molyneaux and
J. Bradbury.

Twenty two others were injured and reports of the time stated that some of them were not expected to survive. A broadside ballad for the time says that seven lost their lives. The ventilation was good and the pit was cleared of afterdamp in about an hour when the bodies were recovered.

GREAT BRIDGE, Friary Field. Dudley, Staffordshire. 26th. June, 1849.

The colliery was owned by Mr. Morris and the pit had not been worked since the previous Saturday. The explosion took place on the following Tuesday when seventy men and boys descended with a butty who had a safety lamp. The pit was 274 yards deep with seven roads, seventy to eighty yards long and the explosion alarmed the neighbourhood. By 11 p.m. sixty two men had been taken out of the pit but others were still in the mine and there was little hope that they were alive. Among the dead was the doggy who, it was said, had caused the explosion by unscrewing his lamp while the colliers were brushing out a place.

By 11 a.m., sixty two men and boys had been rescued alive and eight bodies recovered. Among them was the body of Pritchard, the doggy.

The colliery was referred to a Friary Field of Moat Colliery. The Report for 1853 gives the number of dead as fifteen while the mining Almanac for 1850 says twenty five were killed and forty three injured.

25 victims required.

At the inquest into the disaster Elisha Hudson said:-

"On Tuesday last a little before 7 a.m. I held my lamp in the outside stall next to the fault. I found a good deal of sulphur and I said to Thomas Pritchard, '*There is a good deal of sulphur,*' and said he thought the spout was not too close and we both went back to the spout and found some air coming over the top of the dam. Pritchard unscrewed his lamp and lit a candle from it and went up to the dam. He had just turned to come away when the gas fired. he was about four or five feet from the spout.

On Saturday, Jacob Smith had been ordered by Pritchard to make up the dam. At the time of the explosion some hands were a-brushing in the outside stall and I could find no sulphur there"

MINERA. Wrexham, Denbighshire. 20th. July, 1849.

There were safety lamps provided by Mr. Burton's colliery but the men preferred candles and the explosion was thought to be from this cause. Nine men lost their lives and another was reported to have been dreadfully injured. A horse was also killed and the colliery was damaged to a considerable extent.

LETTY SHANKLIN. Aberdare, Glamorganshire. 10th. August, 1849.

The colliery was on the eastern side of the Aberdare Valley about two miles south west of Aberdare and was joined to the Old Duffryn Colliery where there was an explosion in 1845. Both collieries were working the same seam of coal, the Upper Four Foot Seam which was known to be a seam that gave off firedamp. The coal had so much gas in it that several explosions had occurred in ships that were carrying the coal from Cardiff.

There were two shafts at the colliery which were on the extreme western boundary. One was a pumping and downcast shaft which was nine feet in diameter, the other was a winding and upcast shaft which was thirteen feet in diameter and sunk to a depth of 360 feet. The colliery was worked by naked lights. There were no records of explosions having taken place at the colliery but at the inquiry it was learned that there had been one or two small incidents. On the evidence of Mr. Blackwell's Report on the explosion, three persons had been slightly burned and on another occasion, a boy had been injured when gas fired with he went to the top of an old, abandoned stall. David Thomas told Mr. Blackwell of this and related that the stall had been stopped off for about eighteen months and gas had accumulated and accidentally fired.

The main feature of the working that had a bearing on the explosion was a point about 450 yards from the shaft where the main road divided. One branch was known as the Lower Level and went to the east, turning a little to the south on a level with the seam for about 900 to 1,000 yards from the shaft. The other branch which was known as the Upper Level turned to the north near the mouth of the workings which was known as No.1 Cross-heading to the rise for a distance of 200 yards and from there to the No.2 Cross-heading, descending a little and then passed the mouths of Nos. 3 and 4 cross-headings to the rise when it finished near the shaft as the Lower Level.

The area enclosed between these two levels varied from 100 to 150 yards wide. It was traversed by a heading which were known as crossings, on which Nos. 1 and 2 extended all the way from one level to the other, while No.3 was still in the course of being driven at the time of the accident. All the workings on the west side of the No.2 crossing had been exhausted and abandoned which left a considerable area of waste between the levels. Since conditions were right, a third range of workings, consisting of five cross-headings, had been opened out below the Lower Level. On these, Nos. 1, 2 and 3 had been exhausted and abandoned and Nos. 4 and 5 were being worked. At the division of these levels, the lower was left open and free air passed, which was the main route for the ventilation. This portion of the ventilation went to the workings of the Nos. 4 and 5 dip Cross-headings and then back along the south return air way to the upcast shaft.

In the Upper Level, about 30 yards inside the point of the division, there was a regulating door 9 feet by 6 feet, through which only part of the air was allowed to pass to ventilate the rise workings. When the main current of air reached the lower end of the No.1 crossing, a split was added to it to ventilate the workings between the levels. Part of this air was intended to ventilate the old workings between the level and another route was opened and it intended to pass directly into the Upper heading. There was another split taken from the main current at the bottom of the No.2 Crossing. It went through the air way between the Nos. 2 and 3 crossings and eventually joined the currents at the Upper Levels and passed into the northern air course to the upcast shaft. The ventilation system made a large part of the of the Upper workings, extending from the door at the division of the levels to the north of the No. 2 Crossing, about 300 yards that was depended on leakage and so had no

effective ventilation. this area was a natural collecting place for gas given off from the abandoned workings on the low side.

There were only slight indications of the explosion at the surface with a small amount of dust and smoke rising from the shaft and no damage to the machinery on either of the shafts. Of the three ventilating doors at the bottom of the shaft, only one, the innermost, was damaged. The manager descended the pit and commenced the rescue work within half an hour of the accident. Operations were delayed when two of the men who went down were overcome by the afterdamp and rendered unconscious. There was a delay in putting out the furnace who probably helped the rescue work as no damage had been done to the stoppings in the main roads and the air continued to pass long it's original course until it reached the branching roads where the doors had been blow down.

On examination, it was found that the indications pointed to the explosion having taken place in the Upper Level and to have extended down through the old workings to the Lower Level. The doors surrounding this part of the mine had been blown out from the centre and near the division of the levels, they were blown towards the shaft. The inside of the No.2 Crossing was blown towards the face of the Upper Level and those in Nos. 1 and 2 and 3 rise cross-headings were blown upwards. those in Nos. 2 and 3 dips cross-headings were blown downwards.

It was in the Upper Levels that the evidence of flame of the explosion were found. The keeper of the door near the division of the levels was found alive but severely burned and he later died. He had not suffered the effects of the afterdamp and seemed to have been at the limit of the fire on the shaft side. Another victim was found near the shaft who had been killed by concussion but was not burnt. Further along the Upper Level, two hauliers and a doorkeeper were found dead an severely burned. there were four loaded trams standing close by.

At the request of the Coroner and jury, Messrs. D. Williams, a mineral surveyor, J., Smith, a mineral agent and S. Dobson, mineral agent to the Hon. Mr. Clive, surveyed the pit and gave evidence at the inquest. Mr. J.K. Blackwell took part in the investigation on behalf of the Government and presented a report to Sir George Grey. Mr. Blackwell said-

“Part of the coal had been blown off the end of the one nearest to the No.1 crossing. The coal was thickly coated with fine coal dust which, being taken up from the floor of the level by the violence of the blast, covered everything to which it could adhere. the side of the level, and the timbers set in it, were coated with this dust. The surfaces of the coal on the tram, under this dust, appeared to be slightly charred. Some of the setting of the timber in this part had been removed by the force of the blast, which appeared to have been at its maximum near this point.”

Mr. Dobson also observed that coal on the lower trams was charred and that the timber was covered with coal dust that was also charred near this point. The theory that the flame extended down to the lower level through the old workings was backed up by the fact that four bodies, slightly burned, were found along the Level. The fireman. William Williams, was slightly burned and gave evidence to the inquest. He said-

“When the explosion took place I was in the lower parting of the No.,2 crossing. I saw the fire it came from the lower level it appeared to cease as it reached me. I was on my knees at the time. I heard the explosion, and fallen on my knees to avoid the effect. I was slightly burned.”

The main explosion was supposed to have been caused by firedamp oozing out, or being driven out, by a fall of roof in the hold workings, into the No.1 crossing and accumulation in the Upper Level where it was ignited by the light of one of the hauliers but two smaller explosions were thought to have occurred. One at the

upper end of the No.1 rise cross-heading, where three men were found slightly burned and the other at the lower end of the No.4 cross-heading to the dip where two men had been slightly burned. These explosions were thought to have been caused by the main explosion forcing local accumulations of gas onto the miner's naked lights.

Of the other people in the mine at the time of the explosion, they heard the report but their lamps were not extinguished. they went out of their working places and found that they were imprisoned by the afterdamp which shut off their escape route. On the eighty seven men and boys in that part of the mine only eight escaped unhurt, six of whom were near the shaft. Fifty two died of which forty two were brought out of the pit, dead and ten died at the pit head after being found alive. Twenty seven of those recovered unconscious later. all the bodies were recovered within twelve hours of the accident due to the prompt and heroic actions of David Thomas, the manager of the colliery and those who aided him in the operations..

The jury, after hearing the evidence and the Coroner's summing up returned the following verdict-

"Firstly. we find that persons into the cause of whose death we have been inquiring, acme to their deaths by accident in consequence of an explosion of firedamp caused by gas oozing out of old stalls in the no.1 crossing in the Letty Shanklin Colliery, caused either by a fall of roof in those stalls, or by a sudden fall of the barometer, or by a combination of these causes, the gas this sent out, coming into contact with the naked lights of the hauliers at the time engaged in the upper level. and e further find that the fire that took place in the no. 1 cross-heading to the rise, and in the face of the No.4 dip heading, was caused by the e first explosion the air and causing the gas to descend in contact with the naked light of the men working in those places.

Secondly. we also recommend that in all instances that the gas which generates in old wastes should be carried off by a separate air current from that which ventilates the workings, and then brought into the return air course without any communication whatever with the intake air. It should be kept entirely secure from any communication with the naked lights of the workmen."

Mr. Dobson commented that is was the only explosion known which had taken place in the intake airway at a colliery. It was noted that many on the victims had died from the effects of the afterdamp and Mr. Blackwell remarked that-

"The number of those who perished by the explosion itself is thus shown to have been a very small part of those who lost their lives on this occasion. The remainder died from suffocation produced by the afterdamp of nitrogen and carbonic acid, which is rendered still more fatal by the thick dust which fills the air and impedes the respiration of the survivors after an explosion."

Various proposals were made for the saving of life after an explosion. As early as 1835 there was scheme proposed to supply workmen with a portable vessels containing compressed oxygen of atmospheric air and in 1835, Messrs, G.&W. Bursell invented a '*Life Lamp and Life Apparatus*' for the use among noxious gasses which held atmospheric air in portable metal cylinders. A simple apparatus of a mixture of slaked lime and Glauber's Salts in a course bag to be used as a respirator after an explosion was proposed in 1839 and recommend by Messrs. De la Benche and Dr. Playfair in their report on Gasses and explosion in 1847, in 1845, Mr. T. Dickenson recommend that miners should carry bags of air with them and the scheme was enlarged by Dr Hutchinson in 1849 for the use of rescue parties after explosion. In 1849. Sir George Elliot suggested that pipes of convey quicklime and water, or oxygen gas in the none to counter the effects of the afterdamp and in the same year, Mr. T.J. Barkley advocated the constriction or refuge chambers in the workings of mines.

A report presented to Sir. G. Grey concluded-

“The principles which first of all be observed in arranging the air ways of every mine have been overlooked, namely, the protection of the intake currents from any possibility of their being rendered explosive until they reach the workings where the men are employed the isolation of each district of the workings, along with the system of air courses belonging to it, so that an explosion may be only partial in its effects and the ventilating of exhausted proportions of the mine by such parts of the return air as are never traversed by naked lights. Naked lights were used in this pt.”

CWMYNANTDDU. Pontypool, Glamorganshire. 16th. August, 1849.

The new pit was near Pontnewynydd and five men lost their lives in an explosion. All the men were married, most with families. The inquest was held but there was very little evidence to show how the accident happened and a verdict was returned to the effect that the men lost their lives in an explosion of firedamp but how or by what means the explosion took place was unknown.

WISHAW, Scotland. 13th. August, 1849.

The was the property of Mr. Wilson and the explosion occurred at the No.6 Pit. Some men had descended and a but thirty were waiting at the surface to go down when the explosion occurred. Nine were killed and one man was blow up the shaft and it was reported that fragments of human flesh and bone were scattered for 400 yards round the pit. The unfortunate man was Alexander McKimmin of Tirlee. A boy named Thomas Hunter was heard calling up the shaft to be taken up but it was 5 p.m. on Monday when it was possible to get down and Hunter's body was recovered.