TORBANLEA METHANE VENTILATION

JAMES ROBERTSON, Mine -owner, examined : 1. By the Chairman : You are the owner of the Torbanlea Colliery ? Yes; of Torbanlea. J. Robertson.

2. How long have you been connected with the colliery ? Well, I took up the land twenty -five years odd ago, but began to sink for coal in 1882.

3. And before that time, had you had any experience in coal -mining ? Yes. I had, at home in Scotland, and my father and grandfather before me. 4. Where there was any large quantity of gas ? No ; not in very fiery mines.

5. Were you in mines where safety lamps were in general use ? No ; not in general use. 6. Were they used in parts of the colliery only ? Only on occasions.

7. What system of working is usual in Scotland ? Stoop and room and long wall.

8. Was it usual to find the most gas in working the solid coal or working the pillars ? In the solid wall.

9. And as a rule naked lights were used even when gas was known to exist ? Yes.

10. And the gas was swept away by the good system of ventilation ? Yes ; by the ventilation, of course.

11. How long is it since gas was first known to occur in the Torbanlea Colliery ? I could not fix it exactly, but perhaps three or four years ; in fact there was so little that it was never thought of.

12. Who was manager at the time when gas was first discovered ? I think Mr. Sharp.

13. That is the present manager ? Yes.

14. You, of course, have been thoroughly conversant with the general management of the mine ? Yes.

15. You would always see the reports of the manager and overman ? Yes. I have always seen them,

and consulted over the reports.

16. Has Mr. Sharp, the manager, ever suggested to you the advisability of using safety lamps ? No, never -only as a check to examine the workings. We had safety lamps for that purpose.

17. The workings are always examined with a safety lamp ? I understand so. 18. And any precautions of that sort, taken for the safety of the miners, would be left entirely to the

manager ? Yes, it would be left entirely to his opinion.

19. And, whatever he thought necessary would be carried out P It should be carried out.

J20. No obstacles were put in his way ? No obstacles at al]. IIe was rather encouraged the other way to be careful and cautious.

21. Have you been in the habit of visiting the workings yourself ? Underground?

22. Underground ? Not for a considerable time. In the early times I was pretty often down, but not when the company was in existence.

23. When you went down, did you examine the working places yourself for gas ? No, I never did because I never considered there was gas.

24. Have you ever received any complaints from the manager as to the presence of gas ? No, I have not.

25. Nor from any of the men ? Nor from any of the men.

26. Not at any time ? Not at any time.

27. And you had every confidence in Mr. Sharp, the manager ? Every confidence in him.

28. Do you consider that the mine has been properly managed as regards the safety of the men ? Certainly; I am satisfied of that.

**JOHN SHARP, Mining. Manager, examined:**

J. Sharp.

191. By the Chairman : You are manager of the Torbanlea Colliery.? Yes.

192. How long have you been manager there ? About nine years.

25 Apr., 1900. 193. Were you working in this district before that ? Yes.

194. For how long ? Five years before that.

195. That would be since 1886 ? Yes.

196. Had you had any experience of coal- mining previously ? Yes.

197. Where did you gain your experience ? In Scotland.

198. In what part ? In Stirling, Fifeshire, Lanarkshire.

199. For how long were you working in coal mines in Scotland ? Fifteen years.

200. Bave you worked in fiery mines in Scotland ? Yes.,

201. And in mines where it was absolutely necessary to use safety lamps in parts of the mines ? Yes.

202. Have you worked in mines where naked lamps were used -? Yes.

203. In any of those mines where naked lights were used, was gas ever seen ? Yes.

204. Gas was known to exist ? Yes.

205. And yet naked lights were used ? Oh, yes.

206. Were they used when taking away the pillars ? Yes, naked lights.

207. Trusting to good ventilation to sweep the gas away ? Certainly.

208. Bave you had any experience of sudden outbursts of gas ? Yes, on several occasions.

209. Would it be considered safe to work with naked lights in mines subject to sudden outbursts of gas? We have always considered it so; provided there was a sufficient quantity of ventilation. It very much depends upon the quantity of air that is travelling.

210. Is there anymore danger from these sudden outbursts than from a regular emission of gas ? Oh, yes.

211. The regular emission of gas can be met, as a rule, by ventilation ? Yes.

212. When you first took the managership of Torbanlea, to your knowledge, had gas been found to exist in the mine ? Oh, yes ; we have had small quantities of gas there before that time.

213. Gas had been known to exist in small quantities ? Only in the main level, and in very small quantities.

214. That is the level we went into yesterday ? Yes.

215. Had there been any accident from gas in the mine before you took over the management of Torbanlea ? Yes ; there was a slight accident through burning when John Thomas was manager, about ten or eleven years ago.

216. Were you in the mine at the time ? Yes.

217. Do you remember who was concerned in that accident and who was in charge ? Yes, it happened to a man named John Madders, who got slightly burnt. There was a small quantity of gas which ignited but I do not remember the man being away from work through it. He went home the day he was burnt, but I believe he was there at work the next day.

218. It was not a serious accident ? It was hardly worth calling a burning, as far as I could see.

323. Do you think it possible that it could have come from the floor -from the seam below ? The bottom coal generally contains' most gas, 'I think.

324. That is the coal 2 feet below the floor ? Yes. There is very little gas in the top coal; it generally came from the bottom coal. Down the dip the bottom coal is not good, so that there is a great possibility that the' gas may have come from the bottom floor, owing to the bottom being burst up by the weight of the roof'on the top.

J. Sharp.

325. Did that upheaval of the floor take place at the time of the accident? I could not say, but I did not notice it before the accident.

.326. When did you first notice that upheaval of the floor ? In going over there to examine the place just after the accident, when I was down with those four men. That was the first time I noticed it, and I then saw the place was swelled or burst up about a foot or so.

440. Then do you disagree with the pavement theory ? Oh,I do not know. The bottom coal has always been the coal that contained the gas.

441. But the gas would make its way to the top ? But in the dip we never cut down to the bottom coal. The bottom coal is left on because the stone gets too thick to work.

461. Is it your opinion that the gas which caused the explosion in this accident came out of the bottom coal? I would not like to say anything about the matter at all ; it is a mystery to me ; I cannot say where it came from.

471. But is it your opinion that there is sufficient gas lodging in the bottom coal and pavement to give off sufficient gas to cause an explosion such as that which recently-took place ? Yes ; I believe so, unless it could get drained off otherwise. Judging from what I have seen in driving levels, the greater part of the gas comes from the bottom coal, and -unless it can get off some other way there was sufficient gas in the bottom coal to rise and burn those men as it did.

472. But do you not think that the pressure that has been on that part of the mine where the pillars have been taken out and the cutting of the bottom coal at the top of the dip would have caused that gas to have drained out prior to the accident ? No ; I do not think so. The bottom coal is not a clean coal. It is not a free coal. There is not such a thing as a skin in it. There are no pores in it, and it will not let water through, so that any gas that might be in it would not get very readily out of the coal.

473. But is not the floor itself sufficiently porous to admit of the emission of the gas ? No. We had to shoot that stone with dynamite. There is a big iron band in the centre of it, and sometimes we could not shoot it with powder.

474. Then do you really believe that the explosion arose from that source ? Well, I have no real belief. I could not say the gas came from a certain part. It might have come from the 100 -yards level, or from the upheaval of the bottom.

475. Do you not think that the amount of ventilation you had there, the gas having to come from the bottom coal, and the ventilation being largely confined to the bottom and not to the top, would be sufficient to prevent the gas from rising? That is certainly one of the things which goes against the theory of the gas coming from the bottom coal. At the same time it is a very wide space there and the air was spread over a large space. Until you get to the bottom of the pillar the air was not confined to any small area.

476. 'Do you think sufficient gas would accumulate in that confined area to have caused that explosion ? I do.

14 MINUTES OF EVIDENCE TAKEN BEFORE THE ROYAL COMMISSION ON TORBANLEA

J. Sharp.

 477. Is there a sufficient area there ? Oh, yes.

478. Notwithstanding the sweep of the air ? Well, I can hardly think so.

479. So that so far as the theory is concerned of the gas having emanated from that source, you think that the air would be too strong? Yes, I think so.

480. Therefore the theory of the gas having emanated from the bottom coal pretty well falls to the ground? I am not altogether prepared to say. Gas is a very oily thing, and the air will not take it away at once. I have seen a strong current of air sweeping through a body of gas which could not be moved until we put up a piece of canvas at the bottom.

481. Then, if the air sweeping round the bottom was not sufficient to destroy the strength of the gas emanating from the bottom coal, is there not a very strong likelihood of the gas accumulating at the top, where the air could not reach it so well ? It was at the top side that it was fired.

482. Here is a portion of floor where you think the gas might have come from : there is a greater chance of that being well ventilated than a portion of the roof that has fallen and where a cavity exists ? Yes.

483. Then I think, so far as gas being there in consequence of the sweep of the air, that destroys the idea of the gas having emanated from the floor and not from the top ? It is not impossible that it might have come in from the coal above. It might have come in there through some additional fall, bùt I certainly examined the place for gas and found none.

484. Is there not a strong probability that the gas would have come from the coal in the top rather than from the bottom, considering the constant sweep of air there was ? Yes, that looks very feasible.

485. The balance of argument, you think, lies in that direction ? Yes.

486. You say that Torbanlea is not a fiery mine ? Yes ; I said I considered it not a fiery mine.

487. Where do you draw the line between fiery and non -fiery mines, seeing that you have in that mine already experienced considerably quantities of gas at different times ? So long as I was able to keep the place entirely free from gas by means of a good current of air it could not be called a fiery mine.

488. Supposing you left the mine to -day with only a moderate quantity of gas in it and returned to- morrow and found what you would not consider a moderate quantity, what would be your opinion then? I would then consider it a fiery mine. If I was unable to entirely sweep the gas away and leave the mine perfectly clean, then I would call it fiery, but if only a quantity was exuding, which I could get out, I would not consider it a dangerously fiery mine.

554. Do you not think that gob fires are exceedingly dangerous where you are likely to meet with gas ? Yes, no doubt of it.

555. By Mr. Rankin, : You say that until the roof broke you did not see any gas ? Very little.

556. And that it accumulated after that ? Yes, on the top of the fall.

557. Don't you think that that goes to show that the gas must have come from the top ? Well, this portion is next to the fault, so that I think it must have come off the fault.

558. Very likely the fall of the roof might have broken into the fault ? Yes.

559. It is very probable it would come off where that fall took place ? Yes, it is probable.

560. That strengthens my idea that the gas was likely to come from the top. It would be very easy for your current of air to cut the end of the gas off and leave a portion of it in the cavity, and after another fall came the gas would be knocked out. Do you think that is likely ? Yes it is likely ; there is no doubt of it.

589. By Air. Fryar : There has been a suggestion that the gas emanated from the floor. Can you give us any idea of the origin of that suggestion ? The only thing is that upheaval which I showed you about the pillar where Gamble and the other men were working. That is raised about a foot above the ordinary level, and it is the only reason I can give for the suggestion.

590. By Mr. Glassey : When did you notice that rent ? On the day of the accident.

J.\_Sharp.\_

591. You never observed it before that ? No.

592 How far is that away from where the men were working ? It is just behind where they working. Had we attempted, we could easily have found the rent there.

593. By Mr. Friar : Have you read or heard the overman's evidence touching the extent of the explosion ? I have read a report of it in the papers ; that is all.

594. You do not know from himself personally what, in his opinion, was th! extent of the explosion ? I have asked him, and he seemed to think there was no violent explosion -that it just seemed to be a flame; and that there was no serious knocking about such as one would feel in an explosion.

595. Can you give us a rough idea as to the distance from that reut, or upheaval, to where the Houstons were working ? Six or 7 yards straight below them, I should think.

596. The Houstons were towards the rise? Yes.

597. Can you tell us how Gambie was situated with respect to it ? Gambie, Griggs, and Johnstone were the three who were working at the bottom pillar.

598. Were they below the upheaval ? They were below the pillar, the thickness of that little pillar - about 3 or 4 yards square -was between them.

599. How far would Caldwell and the boy Anderson be from the upheaval? Six or 8 yards.

. 600. Were they to the dip or the rise, or on the level across ? On the level across.

619. You have told us that there is an outburst in the floor, right in the centre of the floor ? Yes, where the five men were working. –

620. Two men were burnt from 6 to 8 yards away on the high side, and three men were burnt from 6 to 8 yards away on the lower side ? Yes.

630. On that same occasion, or on any previous occasion, did you see that upheaval in the floor ? No ; I never noticed it until after the accident.

631. By Mr. Rankin : Neither did Caldwell ? No ; or if he did, he did not mention it to me. B

J. Sharp.

 632. By Mr. \_Fryar : Have you known any such outburst in a floor previously anywhere in Scotland?

Yes, in one part, but that was on the side of a fall where we had an outburst of gas from the floor -from a seam 4 feet underneath.

633. By Mr. Glassey : What was the thickness of the seam? Somewhere about 4 feet, and it was on the side of a fall.

634. By Mr. Pryar: Then you have not actually been within hearing or sight at any time of these escapes of gas ? No, I cannot say that I have.

635. You do not know the noise that the gas makes ? Yes, I think so. If it is in water it makes a bubbling noise.

636. But speaking generally ? If it is coining out of the coal you- can hear it blow like steam off a boiler. '

 637. I am referring simply to the bursting of a floor ? Did you ever hear the bursting of a floor ? No.

638. Your experience has not led you in that direction ? No, I have had no personal experience.

639. All the cases that you have spoken about as being seen down below have be

**JOHN CALDWELL, Overman at Torbanlea Colliery, examined : J. Caldwell. 661. By the Chairman : You are overman and fireman at the Torbanlea Colliery ? Yes.**

662. How long have you held that position ? From eleven months before the explosion; that is twelve months altogether.

663. Were you working in that colliery before that ? Yes.

664. In what position ? Roadsman.

665. Will you state what experience you had in coal - mining previoús to going to Torbanlea ? I had eight years' experience in collieries in the old country.

666. Which part ? In Ayrshire, Scotland. G. And then you came out here? Yes.

668. Did you go direct to the Burrum Coal Field ? Yes, the first work I had in

Torbanlea ; that was in the old mine at the opening of it.

669. How many years' experience altogether have you had in coal-mines ? About twenty -three years'

experience in coal -mines altogether ; and I have been in a gold mine about two years or two and a -half

years.

670. What mines did you work in in Scotland? I worked in the Eglinton Iron Company's mine.

671. Where is that situated ? At Lugar.

672. Have you been in fiery mines ? All the mines there have a little gas in them, but there is 'none that you would call a fiery mine. None of them was worked with safety lamps; but they were examined every morning with safety lamps.

986. I think you have given it as your opinion that the gas might have come from the floor. Have you frequently seen gas coming, from the floor ? Yes ; I have seen blowers, as we used to call them.

987. But no explosion? I have seen some pretty strong ones. 988. Was that in the old workings ? Yes, iu the old workings. , 989. Have you ever seen much from the time when you were taking out the pillars ? No, I do not think; I. have.

990. In your opinion, considering the pressure that would be on the floor, ,a considerable quantity of gas would come from that small seam, covered as it was with only a porous fireclay? ,'I do, not think\_it would be impossible. 1; -

J. Caldwell.

991. Is it probable that a sufficient quantity of gas would come from that source to cause the explosion that took place? I could not say.

992. During your observations in that mine, and judging by the pressure that took place from time to time, have you ever seen anything approaching an outburst of gas from that source which would be likely to cause such an explosion ? No.

993. Do you think that explosion was caused by that means ? I do not know.

1023. By Mr. Fryar : Have you seen that place where there is a burst -up in the floor ? Yes.

1024. Do you know the nature of the little seam of coal that lies below ? Yes.

1025. Is it laminated -that is, little partings in it -or is it what we call homogeneous in its structure ?

It is pretty even. 1026. Is it a coal through which water or gas would likely pass for 100 yards ? I could not say.

102'7. By Mr. Glassey : What sort of ground had you at the bottom of the dip ? Very strong.

1028. Even round about the fault ? Yes ; on the left -hand side of the fault it was a bit lighter, but on the other side we had a very good roof.

1029. And round about the fault, was that strong ground ? Yes ; strong ground. . 1030. Is it usual to find strong ground around faults ? No.

COLLIERY ACCIDENT, AND OCCURRENCE OP INFLAMMABLE GAS IN COAL -MINES. 27

1031. By Mr. Rankin : The coal got bad and burnt on coming up into the fault ? Yes. Of course, J. Caldwell: they stripped it right down to the fault.

Joni; MCKINNON, Certificated. Mining Manager, examined

J. McKinnon. 1091. By the Chairman : You were one of the bench of miners who sat with the warden at the

statutory inquiry into the late Torbanlea accident ? Yes. . 26 Apr:, 1900. 1092. Do you know how the bench of miners was chosen, or by whom P No, I do not.

1093. You are apractical miner ? Yes.

1094. Where have you gained your experience? In South Wales and in the northern districts of New South Wales.

1095. How long have you been engaged in mining in these districts ? About twenty -three or twenty - four years. . 1096. And where are you working now ? At the Howard Colliery.

1097. In what capacity ? As a miner.

1098. How long have, you been there ? About seven months.

1099. Were you working in any of the New South Wales collieries where there was much gas ? Yes.

1100.. Which collieries were they ? The Old Bulli, both before and, after the explosion.

1101. By Mr. Glassey : Are you speaking of the explosion of 1887 ? Yes ; , fourteen years ago last March.

1102. By the Chairman : Then you have had very considerable experience in mines which .contain gas ?

Yes. . 1103. Were you in any other mines in New South Wales where gas was prevalent ? ' Yes.; the Nort Bulli or Austimere used to give off a little; also a little in the South Bulli, and a little in the Bellambi colliery

1141. By Mr. Glassey : Are you of opinion that the crack or crush in the bottom would liberate sufficient gas to cause au explosion ? Not in that instance.

1142. Are you speaking from your own observation, or giving us an opinion of something that is

1147. Touching this pavement theory, have you had an experience at all of outbursts of gas from floors ? Yei, I have.

1148. Was that from whole floors or coal floors ? From whole floors.

1149. Does that refer to broken workings or to whole workings ? Chiefly to broken workings.

1150. And gas has been discovered on the floors in broken workings ? And in solid workings too.

1151. Have you had any experience where there was a floor a portion of strata somewhat of a solid nature, and a small seam of coal below that ? Yes, I have.

1152. Where as that ? There was some of it in the Bellambi Colliery.

. McKinnon. 1153. From your experience as a practical miner; considering the working of that large area, the taking out of the pillars, and the constant pressure down, do you think that would be sufficient to liberate any quantity of gas that might lodge in that little seam in the floor ? From the constant pressure, gas might be discharged out of the floor, but there would not be a sufficient quantity at any time to ignite any lights in close proximity.

1154. And would not cause an explosion ? It would, certainly.

1155. But I mean a dangerous explosion ? No, not in my opinion, because there would not be sufficient gas come out of the pavement at one time to be combustible. Of course, we require about 1 foot to 7 feet to be combustible ; 5 to 12 is about an average, and hardly enough would be generated through pressure to give off that amount.

1156. Then would a small crack liberate enough gas to cause an explosion ? No, because all these cracks and upheavals are like a person stealing something -they come so very slowly and unnoticeably. The gas generates so . slowly that it is hardly noticeable.

1157. Then are we to conclude that you have formed a distinct and decided opinion that the gas was forced out from somewhere by the concussion of that fall ? Yes.