

CORONER'S INQUEST.

VICTORIA, TO WIT.

This Deponent* Thomas Joseph Hewitt

on his oath saith, I am a Bricklayer ~~and~~

residing at Dana Street Ballarat

* Christian and
Surname in
full.

I have had 50 years experience in mining. I resided on
Bunker's Hill for 12 $\frac{1}{2}$ years. I went on the Hill 9th. May
1862. I have worked in various mines in Ballarat, before
and after I went there. I produce a letter written by me

Ex. "V".

I have given attention to the water question and the natural
law that should govern mining and does not. Speaking of the
District there has been a question as to which way a lead
trends. On this, ~~Hall~~ ^{Growcott}, one witness told you distinctly
that he could not tell as to the trend in consequence of the
bottom being so unequal. I think it was Mr Growcott. The
reason he could not tell was simply because of the leads
emptying into an estuary or a lake formation in the bed reef
matter. This water is fed from the earth's centre, and due
to magnetic currents. There is the natural law as the
result of these currents, these currents ~~join~~ ^{generate} are ~~generally~~
electricity and upheave the earth and that is one of the phases
that is something similar to Montepello, now in a state of
eruption and that is exceedingly volcanic, as to form a lake
and from that ~~no~~ ^{all} outlets ^{are} ~~is~~ formed in a sort of bye-wash
running over the high sides and these connections are in chain
connections or minature lakes, something like what you have
seen in the head of a creek, what they call a chain of water-
holes. It is impossible to trace any lead from that, because

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down to the bed reef. It over arches and ~~at~~ ^{that} is a matter of conjecture if you put a bore down ~~you~~ ^{that} will have it. At the Bunker's Hill there has been a discharge of matter through the earth from electric fluid heat and that causes the discharge. We have the other matter called hydrothermal heat. My object in coming here was to see that mining was reduced to law rule and order to guide it, not as has been stated here as a subject of chance. I have drawn plan produced. My idea is that an arch would represent the bottom of a rock that would form the trend of the alluvial water current.

These people have been working on a lead where they have had this current to contend with. They have been working on a different lead, to what they ~~wanted~~ ^{went} to look for. They went to look for a lead from Bunker's Hill and they got to the Medway lead. As they went to the East the gutter rose. If it were coming from ~~A~~ ^{Bunkers} hill it would have naturally deepened. They have met the ground joining the leads, though they have been working formally. There is a saying "high and dry on the reef". He has to ~~stay~~ ^{sink} in a position where he does not get the rock water over-lying ~~at~~ the leads, there are the clay portions deeper if you found an outcrop at the surface. If you come away centrally from the 2 outcrops, you will find it in the centre off the gutter and you will find perhaps 10 or 11 feet of clay before you get the rocks. That rock will

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come down and you will come to the centre at the deepest

part. The stream running is immediately over the gutter

stream, that is, because where 2 are united it causes the

clay to run out and gravel comes in and in driving underneath causes the ^{water} ~~clay~~ to deflect into the workings. As far

as regards the under-weight it is simply due to the water

running over the surface of the rock and naturally causes the

earth to drop away from the surface of the rock that adds to

the weight of the timber. What has been called a swelling

of the timber is a head weight which forces the props into

the reef. The ^{nature} ~~end~~ of the bed reefs is the soft bed reefs.

They take it to be a swelling of the reef, that is the

pressure. I say they could use sole pieces, wherever I have

been connected with ground like that we used sole pieces.

As to the plan marked blue, it is supposed to be earth bed

reefs showing the course of the rock current and the course

of the bed reef current, one immediately over the other they

unite wherever the clays wear out and the gravel comes in

If you drive in, you get air and that air causes deflection

of the other current.

E x. "W." Plan put in.

I say it is an estuary or lake in the form of bed reef

matter. It is fed from the earth's centre from the magnetic

seas. I got it out from the earth's upheaval of electric

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currents natural law. I find that all alluvial lodges
come from the breaks in quartz leads, that is the reason I
suggested to the Department of the survey of the Indicator.
When they had that survey done, I then wrote to them to have
every line of reef laid off in parallel order to show the
continuity in respect of the line, and the benefit of it was
that the lead running ^{on} ~~cross way~~ ^{course it feeds the lead} ~~it fills the bed on its~~
course. If it crosses the rich lead it becomes rich and if
it crosses a barren one it gets poorer. The object was to
show that the lines lay in parallel lodes. The lead runs
on a cross course. This is where the upheaval occurs and
you have the conclusion that the clay coming from the cross-
cut comes from either North or South from this lead. There
is only one exception to that rule, that is that it may have
come from the lode to the East and wash on its course and
lodge on the other lode. I suggest certain surveys should
be made in connection with the Cardigan to show the central
line of reef of that District. I take it to be the same
reef that Judd and Law worked on. From the central line
both at Smythesdale and Ballarat all the leads trend out
westward. That is no chance work, that is natural law. I
have written to the Department on the question of surveys.
I want a survey made from Judd's and Law's claim to the

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Bunker's Hill school immediately adjoining the Cardigan
claim to show that it is on the same lode and show the
connection with it and the margin of the rock.

Cross-examined.

I do not know that I am a scientist. I am a man given to
reflect on the causes of things. I have reflected on the
cause of this disaster. It is the unity of dual currents.
I arrived at the conclusion that they struck some new currents
there is also a gravel connection. I say you will find a
lot of gravel about ^{this} a new lead. I have heard of swelling of
the ground, I cannot tell what it is caused by, I know it is
a fact. I said I do not consider that it was the earth's
swelling simply the pressure overhead ^{in this case} forcing the legs into
the soft reef. It would not surprise me to hear of it,
having not studied it out in its logical ~~consequence~~. I do
not claim to be infallible. I maintain that ⁱⁿ business with
brains sufficient to carry it on, is business with method and
rule. I mean by law, rule and order, the natural law that is
in the earth. I did not go to the mine to form any infallible
opinions. I have my own opinions about mines, as to the
rule, law and order. There is a lot of leads in Ballarat and
that
there is not one of them but starts but would come to the
Sebastopol plateau, that is my reason for working out as a
fact that every lead joins the Sebastopol plateau.

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To the Jury - I have worked on other leads besides these. From its flow it formed a chain of water holes. It is impossible to determine any trend

There is no worse ground in the Colony than Bunker's Hill It requires face boards.

To the Coroner - It is 2 and a half years since I worked in mining My experience has been also in quartz. The same theory holds good there All the alluvial trends come from the breaks of the quartz lodes I have never worked in the Cardigan mine. I know the ground. I have been on the ground several times since 1874. I have seen the stuff that is brought to the surface. It is the same as on the top of the hill. I saw boulders on the top of the hill and I saw one that extended three sets? I know the All England I found simply a chain of water holes. We sank a rise and then put up another one. The ground was something similar to ~~the~~ what they got on the Madway Lead. The Cardigan ground is much the same as the All England as far as regards the nature of the wash The black clay runs down on to the reef in certain places there is water holes In that water hole there is the wash the black clay runs on the top of the wash. The All England was not bad ground to work. The Cardigan was much the same that would not be bad ground. What they got in the burst is different altogether. The inburst of water would indicate to me that there was danger overhead I should like look upon that water running down the rock causing the dirt to separate from the rock and coming as a dead weight on the timber Under these circumstances it could be worked in safety according as how they worked it. They were driving from the shaft and they were going on as far as I understand the gutter was rising. I should drive along the centre of the gutter till I got a certain distance and put in drives right and left

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and cut it into blocks and go to the far extremity to bring the ground back and when I got a certain distance out I should cross the timber so as to check the other ground where it broke away. Where grond breaks away the other follows like a ~~pagk~~ -of cards. It appears that this ground was taken out indiscrim- inately I would not have done it the way they were doing it I should take the increase of water as my signal of danger. I should have withdrawn the men from the place and opened out the shaft and drove to the top of the balance shaft. It would involve an expense of £150 and and from their not doing it they -have lost the mens lives by doing that they have to come back and put in ^{above & pipes to} ~~two beams and~~ ease the strain of the water off the head

Re - examined -

I would take the presence of water as an indication of danger I never heard ^{water} that that blocked ground ^{always} comes down It is almost ^{followed by} invariably filled-with-water I consider that the men had struck a new gutter. I considered the water came from the rock. From the unity of dual currents. The water was considered with the new gutter

Q. Do you consider the water came from a new gutter?

A. Not the whole of it some portion of it came. It was

intermingled I ~~would~~ cannot tell what amount came from it.

There are two currents The rock water and the ^{bed} ~~is~~ reef water and any water ~~that~~ comes from the reef comes from the current There is a current of water in the ^{rock} ~~lake~~ and that runs in the depth of the rock and it runs immediately over the alluvial lead current

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Q. There was no evidence of any water coming from overhead at all?

A. The water did come from overhead There was a witness that told you distinctly that he drove out of the black clay and into the gravel and came to the quartz boulders that shows that the margin of the line is distinct The action is from the margin to the rock The rocks met again the gravelly portion They did not want any horse there at all because they had no business to take the ground out they worked there three weeks after they should not have taken it out. I base that opinion on my experience in mining.

Q. Do you know how long it takes blocked ground to come down?

A. It depends on the weight overhead In the All England I never saw any that would come down. There is not a man that could work it and bring it down Our workings were 1200 feet from the Cardigan ground If men worked ground out it must be wash ground with gold in it. I last worked in a mine on Sovereign Hill I was Manager of a mine and director I worked for three years and a half I was manager of the Albion on Inker-man in Drummond Street There were about 30 men working in it That is about 35 years ago There is no change in mining since that time

To Mr Barrett - They ought to have knocked off three weeks before they did

I say that simply as to my knowledge of natural law. They had all the ^{water} ~~rocks~~ to contend with.

To the Jury - No man could bring the ground down in the ^{all England} ~~Inkerman~~ If you

were in the ^Q ~~ground~~ and found no gold and no wash you would not work

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it. There was not sufficient ground worked out to cause a fall. There was a chain of waterholes. Ground of that description would not be likely to fall down because you have one hole and another 100 feet away. The worst ground I ever saw was in that district. The All England Cardigan were good for working in I was alluding to the Bunkers Hill. The ground that had very bad ground was the Excell and Evening Star I-happened to be there 35 years ago. I wrote f to the Department take to show the survey from the margin of the ~~reef~~ ^{rock} from the claim to show from 1, 2, and 3, rises as to the margin of the ~~lake~~ ^{rock}. Ex "X" Mr Barrett puts in newspapers with reports ~~of~~ since the disaster "Courier" "Star" and "Echo"

Mr Clarke objects as to them being any evidence

Coroner - One witness was asked as to what it was stated in the papers so they may go in.

Adjourned to Thursday 10th July

Taken and Sworn before me the seventh day
of July 1902 at Ballarat

W. J. O'Brien
P.M. Coroner.

Thomas Joseph Hewitt.
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This Deponent* Robert Ford Bryant

on his oath saith, I am a Mine Manager

residing at Gregory Stret Ballarat

* Christian and
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full

I have had close on forty years experience in Mining During that time it has been particularly alluvial mining. I have been manager or assistant manager for 27 years. I recollect the Gold Mining Commission in 1888 I was specially appointed by the Governor in Council of the Mining Industry on that commission. There three specially appointed I was one Mr Burton and Mr Crawfield were the others I am chairman of several Companies. Nearly all the time that Skewes was Manager and a little after Noble took charge I was appointed visiting Director and visited the mine occasionally. The first time I had had anything to do with it I went to look because Mr Mr Shaw had a mortgage on the plant I recommended them to test the high ground ^{and} there were ^{large} boulders where the wash ^{cut out} was found ^{gone} and the rise was put up to the wash In the ^{deeper} same channel there is a channel 30 feet higher than the ^{deeper} other channel We found more vegetable matter and lignite wood in the gutter than there is in the upper one there is very little of ^{the} what is called the pliocene wash. When we blocked out there was a little water in the ^{rock at} drive and we met the north-western-- Northern extremity ~~on~~ where we worked from the jump up In blocking out there was a little water coming out I strongly recommended them to open out to the West side of the shaft ^{to work the ground from} from the No 1 rise East. And further advised them to test the ground to prove the junction of the higher wash with the ^{deeper when} other and the work stopped at the Old No 1 from the balance shaft. It was left and they decided to put the drive in from the North reef drive from the east to the shaft to test the deeper channel from there

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and the workings were never connected while I was there. The point about 50 feet South West of the balance shaft is where we reached finality. There was the other made by tributors to further test it south west and I only heard that they arranged with the tributors to ~~pay~~ put that ^{intermediate} drive in I ceased to have anything to do with it about four or five months after Skewes left That would be about 1901 in the commencement of the year. Since the disaster I was requested to examine the mine as an expert on behalf of the ~~Company~~ Crown. and helped to make the survey ^{with} that Mr Baragwanath also assisted in. I inspected the underground workings as far as I could with Mr Baragwanath and assisted in surveying ^{from} the main shaft Everything we could survey we did The survey was made on the 29th May 1902 I visited the mine again in company with Professor Hart and the surveyor and took samples of material ^{that came away by back} that was on the 3rd June That was to examine the deeper- debris brought away by the burst I saw a sample of infusorial earth and honeycomb rock and basaltic clays and lignite wood There is nothing different about this to what is found in similar conditions Anything is found about washes gold and copper and precious stones We find nearly almost everything There is nothing singular about it There was nothing singular about anything I saw there I have read the Mine Managers Reports the daily, weekly and fortnightly reports, up to the time of the disaster I may state ^{I believe them} ~~they are true~~ and faithful records of what occurred from day to day and week to week and fortnight to fortnight I have also read all the press reports of the three local papers I have read the most of them From a perusal of the Mir

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Mining Managers Reports and the information that appeared in

the papers I can see nothing abnormal or mysterious at all

that had been met with in the mine either in the opening up or

WD the blocking^{out} of the wash I say it^{is} cause and effect nothing at

all abnormal There was nothing abnormal in the circumstances

leading up to the disaster Mr Harris reported does not disclose

WD anything in the opening up and that piece of ground^{referred to in plan} was cut

up very small for a purpose. A practical man will know

that it is always better to get finality before blocking back

and leave your blocks as large as you can and subdivide them

when you are coming back but here there are only 25 to 30 feet

WD blocks the ground^{taken out} was between 3 and 4 hundred fathoms takenout by driving before blocking was started and ~~the xxx repeated xxx~~WD that represented 600 props^{or sets + I believe} when the ground actually commenced

to subside before blocking commenced there is not the slightest

doubt about it in my opinion There were 277 fathoms of

WD ground taken out of that^{ground} before the 10th Feby when Mr Harris

reported to his board that the blocking back from the 173

feet to No 2 and when he stated that he had between 3 and 4

WD months^{work} from the 10th I can only make up that there was not

150 fathoms of ground taken up out of all that ground There

were 277 fathoms producing 350 ounces in the opening up In

The opening up of that ground the leading drives are to

WD drain it The cross drives are to know its^{value +} depth- width. all

The subterranean gutters have their rising banks and the cross

WD drive prove the ~~width~~ All the wash of this^x quality and from

this drive you judge from the quality of the ground and

the cutting up of the ground showed that it was very good quality

quality On the 15th December the fortnight's yield was

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55 fathoms for 73 ounces or an average of 1 oz 8 dwts On the 20th there was 30 fathoms for 32 ounces or an average of 8 ounces 8 dwts 30 fathoms for 1 ox 9 dwts 1 oz 6 dwts and so on. The fathom was the system that we adopted in the ~~mines for contractors when travelling~~ ^{W.D.} ~~Duke~~ in this quality of ground A fathom is 6 feet x 6 feet that was equal to over half a pennyweight to the foot. Or close on a pennyweight in some cases 30 What seems strange to me and I can only come to one conclusion that there was 277 fathoms of ground ^{taken in the opening up} worked out or 277 ~~pieces~~ ^{by driving only} 6 x 6 pieces That is a large area of ground to take out On the 10th Feby Mr Harris recommended the board to start and block back that ground and then it was it would appear ^{the Director adopted his report} that the blocked the ~~ground~~ From the blocking of the ground we expect ^{the greatest} ~~our increase~~ profit from quartz reefs If the driving of the main drives and the sinking of winzes and putting up of a rise pay its expenses it is very good If a mine like that pays its expenses before ^{starting to block} ~~it gets~~ wash it is very good I believe the Managers Reports and the only discrepancy in them instead of the yield of the blocking strip being 2 to 3 ^{times} higher it is 2 to 3 lower On the 10th he recommended to block they evidently adopt his report because the next fortnight we hear of him saying ^{no} many feet driven and so many feet blocked this was on the 10th and you would have on the 12th the consent of the board that is a question for Mr Harris whether he blocked before he got word from the office On the 28th the ground ^{with a burst of water & sand} subsides and he ~~gives~~ what I consider an intelligent man would the reason for it coming down.

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That ground had subsided and had subsiding and when ^{before} he commenced ^{block} to take out ^{when he} that ^{block} ground ~~it~~ came down it freed the imprisoned water from the rock and was held up until it got sufficient pressure to break through and he got the burst and the burst brought away sand That is exactly what I should expect And here I think Mr Harris made an error of judgment after having had the burst of water It was an unknown quantity and he could not tell how much was there What should have been done was he should have located the water and then have put up a water rise to have got control of the water We have heard a great deal of the quantity It is not the quantity of water it is the trouble that they had to get the mastery of it It is a very good servant but a bad master ~~xxxxxxxxxxxxxxxxxx~~ ^{I think I have been} connected with other bursts of water from the Great Gulf to Maryborough if not I have had friends in it whom I have consulted about it I have followed the example of good men men like Mr Martin Wooldridge Nicholas who have worked out ground successfully It is no good to say the men ^{can} ~~blocked~~ ground where there is water because it is an insult to intelligence. If the Madam Berry had water ^{in their blocking} they could never pay a dividend and that ground was worked out ~~in the West of Wales~~ under the worst phases that I have ever had any experience of. and we are told the reasons and I sympathise with the Mining Manager who has had to work it Mr Wright in his evidence told us that the mine would have to stop They would not let it go on. Mr Wright said if they had ^{do} continued blocking the mine would have to stop The most marvellous thing was that it did continue It could not pay and did not pay The ground

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in the condition it was in could not possibly pay and from the 10th. they could not have been working and Mr. Harris had better men than the tributors. The complaint was before that when this 327 fathoms obtained 350 ounces it was done by the tributors. At the time it was blocked back the Company had it with a better class of men. We found that the last week before the accident took place there was not 15 ounces of gold obtained and it was backed where it was considered the best ground in the mine was

met with. The men could not work there. The drives were silted up and were coming low, the bottom rising up and it is made softer by water and when you get a superabundance of earth the quantity of timber that is in the ground acted as wedges and five or 100 wedges are driven down by hydraulic pressure and the material that the wedges displaced comes ^{up} down at the point of least resistance. The point of least resistance is the bottom of the drive or the main drive underneath. Evidently the working is effected by the superabundance of the weight overhead and is in pieces today because of that pressure. I have seen a main drive affected 45 feet away from the reef ^{blocking} by the ground coming down there is no geological strata or rock that we know of that is so subject to change as basalt. You can see that in the cutting from Ballan to Bacchus Marsh and in our quarries. There are very few quarries that you can work, you get hard blue basaltic

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and soft honeycomb rock and rock with fissures in it that you can crawl through. I suppose I carried out the largest pieces of work in the Lord Harry Company where I drove through 900 feet. We went through basalt that cost 3/6 per foot to £13 and £14 per foot to drive. In all the ground in the Cardigan there is no indication whatever that the rock may have become changed or soft or rotten rock or spongy. The water that is met with in the wash is not found connected with the imprisoned water. At the Newington Mine in Ballarat there is 142 feet 6 inches of rock I was one of the Contractors. We had four to five thousand gals. of water per hour in that rock. We bottomed on what some consider the bed rock. It turned out to be 20 feet of false bottom. We made a foundation there and puddled back the water. We had about 20 lbs. to the square inch and underneath that false bottom we sunk 70 feet of dry drift showing that the ^{rock} ~~lake~~ water is independent from the drainage of the old river bed. I think an error of judgment took place - they should have located it and put up a water rise to get control of it. I was Manager when the ~~Dam~~ ^{Dam} was opened up. In sinking that shaft they were surprised to find the water they had in the rock, they had 14 strokes per minute for a 10 inch lift. That was gradually subdued and I took charge of the mine before the shaft was finished. When we put in our main drives and got out into the wash and opened it up. The time came when we could block ~~it~~ out the piece of ground. Before I did so I

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put up a rise to ascertain the amount of the alluvial from the drive to the rock. I went up dry and never had any water, started to block about 50 feet from that point and when I had blocked from 40 to 50 we had a burst of water - a very severe one - we overcame that and before any more blocking was done, I put up a water rise and I drove into the break and actually flumed it over the break and there were several other water rises put in that mine. That is what should have been done. I did the same in the Lothair Company in Clunes. I examined the surface of the Cardigan with Mr. Harris and the Surveyor and we could discover no sign of subsidence on the surface but in the Lothair it was some two years after that ground was blocked out that the ground subsided and made the lagoon. In the Ristori, Madame Berry and Lone Hand they had water running for three to four years from their water rises. Mr. Williams at the Beaconsfield, and Mr. Champion at the Hepburn Estate have both had water rises and where you get the alluvial in that rock and the water is so strong that it does not subside you must do it. You have got to do it by working the mine but not by law and it is no use of a Manager insulting the intelligence of men by saying differently. They say there is a lot of water in this mine in their evidence that in the Duke we have two 22 inch pumps but there is no dryer mine in the world than that because the water is under control and the ground is drained and the Manager would not

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think to work where they should be blocked. To me there is no mystery about this disaster in the slightest. It is cause and effect. We are all liable to make mistakes. The ground was taken out and it subsided from the rock and the water accumulated. If any one wants to know the pressure of water let them go to the dams. The pressure of the Gong Gong feeds our boilers. The water increases every foot. Every cubic foot of sand that came out made room for 10 gallons of water. As the water and sand came away it made the cavity larger. There is not the slightest doubt about it and Mr. Harris partially succeeded in stopping the free course of the water hence it went on for 8 or 9 hours until it got the mastery and he had another burst. There is nothing unusual about that it is common sense. If you strengthen a dam and let the water rise above the bank it will wash it away. The Winter's No. 2 shaft was sunk comparatively dry and fifty feet from that shaft there was a hand bore put down. It was under Mr. James Pearce's management. The hand bore was put down to test the depth of the wash and the drive going ^{from} through the shaft ^{at the mine} intersected that bore and drowned a miner. In the Winter's No. 1 we had not the difficulty we expected there. We sunk it in seven months instead of taking as we expected eleven. At the Midas Coy: is the deepest wash proved in the colony and in that we ~~were~~ were sinking what we thought was the Midas Extended shaft. We had one hole in the bottom of that shaft that increaded to 32000 gallons

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per hour . If I have indication of rock water I should go on the other side of the gutter and construct a rise 4 X 2 feet and go out and strike the rock outside of the influence of the broken ground and keep the rise intact and then drive from the rise towards the broken ground. If you had indications of the bursts and could see the rock and found there was no water that would not relieve me of the possibility of danger. You must drive till you get it - you will get it alright. I would put up two or three rises to test it . We went in the Lothair and did not get the water for 48 hours after we put it up. We have driven 30 to 40 feet in the rock and come down next day and found it like a shower bath that is because the crevices of the rock have had clay in them. I would put it to 3 feet as the space of the ground taken out. Taking that as a basis and 170 feet long by 55 feet wide it would hold close on 800 tons of water. That is barely the subsidence and not taking away any sand. You get a cubic foot - 62 ^{lbs} ~~tons~~ of water to the foot. From No. 2 jump-up it is 170 feet to the South West. There are only two or three blocks. I am inclined to think from the angle of the subsidence that they came back to the South East and taking the angle of the broken ground from the No. 1 jump-up that the both were connected and it is likely that the water in ground that subsided from No. 1 would be connected with No. 2. The b-llocks were so small that when the portion of the rock subsided, it

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it squeezed the water out and it might have been connected with the other workings because from the angle of subsidence coming to an angle of 45 degrees. Mr Fitches says that the water met with affected the water from the No 2 jump-up showing that it was connected. With that connection there was over 800 tons overhead. Nobody knew what pressure there was from the rock where I claculated the water was accumulated is from No 2 ground blocked our South West. I have heard evidence as to the pumps, that I am sorry to hear. The engine-driver thought it was an advantage to have the pumps out of repair. Any man to make such a statement ought to be ashamed of himself, it is not an advantage. There is a pressure of 100 tons to the square inch. I think the plunger lift is 250 feet if you reckon about $\frac{1}{2}$ pound to the foot there is about 100 lbs. pressure on the seat of the valve. The fresh water would cut it away like a knife in butter. I am sorry to hear that Mr Kennedy said that it was an advantage to have the pumps out of order. The Company should be in a position to take away any un-expected water. Mr Fitches said it was only a stroke of 1 foot 8 inches. When the last big burst took place the chances are that the pumps would not go better. They had not to go much worse to be useless. Supposing that they became useless it is hard to say how long it would take to get to the men with the tanks. The lifts going at 1' 8" are in a very bad state

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Sand will scour away quicker.

Q. Mr Harris said that the pumps were of such little importance that he did not report it to the Directors ?

A. Mr Harris had no water, that is the point he speaks of in connection with what his pumps were able to do, disabled as they were to combat with the little water they had. When he commenced to get these bursts, I do not think he was safe in touching the pumps then. To stop would be to imperil. If the seating had to be taken out it is not like changing the clack. We have had the pumps working in the Duke United for 12 months and never change, but they would not last 12 hours if the seatings were out of repair. Many taps are ruined in Ballarat by being leaking, that is because the seating and the ball of the tap are worn away. My conclusion which I have formed as to how the men were killed is, the ground being taken out and weakened it had one general collapse and the tremendous fall of ground brought by its own weight squeezed every drop of water out of it. The men were killed and not drowned by the fall. If there had not been any water in the ground there would simply be a displacement of air. Three men were killed in the Western Freehold by trying to bring an area of ground down. We like to see it come down quickly. When an acre of ground comes down it makes the lights go out. The men were getting timber to build a horse to keep up the main drive and to assist in keeping up

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the blocking, so that there could not be a general collapse and then
that came away overhead, not in the mysterious gutter, because no
one ever heard of a burst of water from the gutter. You get the
water as fast as it percolates through the dirt, it is not a dam
bursting away, it is a ridiculous idea, no one ever heard of it.

It may appear in penny dreadfuls about subterranean lakes. It is
doubtful if you get a lead in that class of wash, you might increase
the pump up to 7 strokes a minute but never get a burst. As for
the boulders we have seen they present nothing to me because you
get so many changes in the wash, you get changes in colour and you
get everything you see in the rivers today. We got an island of
sand in our Mine the other day, and you get crab holes and sin-
uosities of the gutter and the boulders indicate nothing to me, no
new gutter. Having regard to what I have read in the reports, I
do not think I would have allowed the men to go on blocking out that
ground on the day of the disaster. I would not take a risk like
that apart from a risk and the menace of the Mine it was not worth
it. Mining Managers should have more back-bone than to give way
to such miserable men we have on the Board, men that know no more
about mining than jelly fishes. I have tried to place the
Manager in this position, he should have the power to suspend and
not to discharge. The Mining Manager has under him who are just
regardless of anything except to earn 7/6 per day. My experience in
all big alluvial Mines is that the men are not allowed to go to any

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faces but their own and in large mines where they are two or three thousand feet apart the men may not know anything about the other faces. All they know about the management of the mine is the chat at crib time. As for our miners it is astounding what a small per centage of them knows the difference between a plunger and a drawlift and how the water comes up the shaft and yet they come as expert witnesses as miners. They go to mining as means to an end and like to get out of it as quickly as they can.

Mr. Barrett read from report of February 10th.

From that report I gather that as the workings extend to the South West the gutter widened out and hence became poorer. You get two ounces to the ^{fathom} ~~ton~~ and it widens to 4 feet and then gets poorer. You get the same amount in the narrow as you do in the wider, it is distributed over a wider area. His expectations that it would take 3 to 4 months to work it would convey to me that having cut that ground up he then suggested that it be blocked back. There was nothing unexpected about that. The colour of the wash as a rule partakes of the character of the bed formation. If you get a red reef you have a red wash, sometimes you get blue or black wash. It is governed by the strata it is lying in. The Manager had to contend with the fair streams coming from the wash. There was no doubt he was meeting with quartz veins and it would drain it. The main drive did not

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assist him in draining his wash. The report "Water coming down" would indicate nothing unexpected. When that ground was

cut up very small, I should have expected it to subside

quicker^{than} if it had been in larger blocks. It was found that

that subsidence disclosed water overhead and I think that Mr H

Harris gave a very intelligent^{explanation} as to the cause.

"Decided to suspend work etc: etc: think pool of water

accumulated" I thoroughly agree with that. There has been

~~nothing~~^{nothing} occurred in the press reports or any evidence to alter my

opinion. I think that Mr Harris gave a true record of what

took place and a correct reason for it occurring.

March 1st. "Water still 8 strokes per minute etc:" That is

exactly what I would expect. The ground is dragging and is

bound to influence ground in the vicinity of it.

Mr Barrett quoted from March 3rd.

The great trouble is the silting up of the drives. Mr Harris

should contend with the water bad as the pumps were. That

is nothing to do with it whatever. The great trouble to Mr.

Harris was to keep his drives open in order that he could

continue blocking. He tells us that he had 3 men repairing

and caulking and trying to stop back the ~~sound~~^{sand} and that he

succeeded in stopping ~~back~~^{sand} the ~~sound~~ and partially succeeded

in stopping the free course of the water and then it would

pool again as a natural consequence and the day afterwards he

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would get another small burst. To show you how it retarded the works we get the yields falling off very considerably although back in the ground. The yield reduced simply he could not work it. The men were afterwards engaged. The bed rock being so soft and the water making it softer and like baker's dough. The weight coming down they could not get to work. The men blocking the 4 feet have no margin before them to get a truck in. You want to have it under most the least favorable conditions to block and keep it open if you have any distance to go from the main drive. It suggests to me that he was still retreating from it and still blocking. He says it is impossible to keep the main drive open and that is all right.

Mr Barrett quoted from March 5th. That report is cause and effect.

6th. March "Water about the same ground exceedingly heavy, compelled to abandon 2 blocks"

That report conveys to me that a lot of debris from the rock had washed away and ~~coming from other~~ ^{bringing} fragments of the rock and ~~came~~ ^a down with the stream. The drives hidden back further than the blocks are silted. It was impossible to keep it open as he says. I have seen hundreds of feet of drives through bursts of water, that is not unusual it was a barrier. Some have said it is through its poverty, but Mr

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