

46. I was talking about the number of lamps, not the number of men?—Well, one man with two lamps.

47. You turn your flame down to one-tenth of an inch?—About an eighth of an inch.

48. Do you think a man with one safety-lamp would be fully equipped for an examination?—He would probably not be able to detect small quantities of gas, but when the percentage was above $2\frac{1}{2}$ per cent. he should detect it.

49. Is not there a liability of his lamp going out?—Yes, after he puts his lamp into firedamp.

50. Your lamp went out; yours was the only one that did so?—Yes, because I went up high on to the fall.

51. Do you not think an examining deputy should carry more than one safety-lamp for an efficient examination?—Yes.

52. Then it is not an efficient examination with one safety-lamp?—No, I would not say that. He should carry two: it would be better. A man may make an efficient examination with one, but he would be better if he had two.

53. With the naked light or a safety-lamp having the ordinary luminous flame, is it possible to detect firedamp when present below explosive proportions?—Yes, it is possible.

54. It is possible with a naked light to detect firedamp though that firedamp has not reached its explosive point?—Yes it is: it alters the flame.

55. Is not the effect of the firedamp on that luminous flame a kind of cap on it?—There is no doubt a cap, but it is not visible in the same way as on a turned-down flame: it elongates the flame.

56. Now, it is possible that there may be accumulations of firedamp present below explosive proportions on the ground, and of explosive proportions out of the man's reach above his head?—Certainly.

57. That is to say, that an examining deputy going through a mine may, for instance, if he tested on the ground, find by the appearance of the flame that there was firedamp, though not of explosive proportions, and he might be satisfied to go right on, while above his head there might be highly explosive proportions. Because there was only a small quantity below it would be no indication of large proportions above?—No.

58. That is to say, the test is no test?—On the ground, no test.

59. Unless it is tested to the roof it is no test?—Yes, it is a test. If you were sure that half-way up there was no cap at all you would know that there was no great accumulation of gas above.

60. If it were 20 ft. high the ground test would be no test?—It would be no test of what is 20 ft. above his head.

61. If a man went through with a lamp and found firedamp below explosive proportions, but could not reach above, and went out and reported it safe, that is no test?—You would find the gas if there were only $2\frac{1}{2}$ per cent. present.

62. If a man going through these mines, which are of varying heights, is not able to say the whole part which he surveys is clear of gas (because he is not able to test above his reach), there is no guarantee of safety to the men whom he allows to go into the area?—He can only say it is safe up to the height where he has tested.

63. Now, if men are working under such conditions they must be at times in terrible danger, without the whole area being tested before they go in?—That depends upon the quantity of gas in the mine.

64. Supposing they have naked acetylene-lamps they must be working at times in great danger?—If the mine is a gassy mine.

65. This is a gassy mine—you know it is?—Now I do.

66. Well, in this mine they must have been working in terrible danger?—Sometimes. They must have been working in possible danger sometimes.

67. Have you found any evidence to indicate that the quantity of firedamp originating the recent explosion was only a small quantity?—I do not think there is any clear evidence to show how much there was there; there must have been above a certain minimum.

68. Is it not likely, in view of recent discoveries, that the volume of firedamp in the Taupiri Mine was very considerable?—At that moment you mean—the moment of the explosion? There must have been a good many hundred cubic feet.

69. May I say a good many hundred thousand cubic feet?—I do not think there is any evidence of that.

70. There has been a great quantity of gas found since?—Yes.

71. Up to what quantity?—I cannot tell that because I have made no measurements of the quantity.

72. It would be very easy to calculate the quantity?—You could calculate the total quantity of air, but you could not, of course, determine the actual volume of firedamp.

73. Do you consider that any man should occupy an official position in a mine like the Taupiri Mine who has not passed a firedamp test by examination, now that you have seen the mine and know something of it?—I should say that he ought to be tested by some means or other—examination or otherwise.

74. How otherwise than by examination? By some one in authority who knows, appointed for the purpose, and who was fit for the purpose?—Obviously.

75. May I say this: that it is wrong, in your opinion, for any man to occupy an official position in a mine such as the Taupiri Mine who has not become thoroughly conversant with firedamp testing?—You may. Such an examiner should be conversant with firedamp testing.

76. You now agree that safety-lamps should be used in the Taupiri Mine?—Yes.