

that it was my sample. He said he got it from the Minister, though my name, in Dr. Maclaurin's handwriting, was on the bottle containing the sample.

1071. Has it got anything to do with the bottle?—I had subsequently to identify that sample in this Court.

1072. It is quite clear that that sample came from the Taupiri Mine?—Yes, unless the contents have been changed after it left my hands.

1073. And that established the veracity of the professor?—His veracity is rather complicated.

1074. Do you suggest that Professor Dixon did anything in regard to that sample which he should not have done?—Only that it was not professional etiquette to take another man's sample for analysis without asking for or acknowledging it.

1075. We heard a great deal about this grab sample—the sample grabbed from the coal-scuttle—do you know anything about it?—Only what I have heard here.

1076. That is all you know about it?—It was grabbed by the professor at the local hotel a week before I came here, so I am informed.

1077. You do not suggest that Professor Dixon took a piece of coal, and did not know where it came from, and analysed that and gave evidence upon it?—No; he said he threw that sample away, and reported to the Minister without taking any sample for analysis.

1077A. According to the analyst's report, you say in your references that No. 16 sample was two large pieces of coal from Ralph's Mine; did you get those out of the coal-scuttle?—No, I am not a professor; I asked permission from the company's chief clerk to get them. They were obtained out of the bin at Ralph's shaft.

1078. You cannot swear that they came out of Ralph's Mine?—They were from Ralph's Mine bins, which contain only coal from Ralph's Mine.

1079. You told us that in Mr. Alison's presence you made a rough test?—Yes; I took a match and dropped some of the coaldust on to it. The whole of it went off like gunpowder.

1080. That was the first indication that you had of this dust being so explosive?—Yes; its inflammability astonished me.

1081. So that the latent power in this dust has remained concealed until the explosion took place?—The excessive inflammability was unknown to us before the explosion. We gave it credit for being ordinary dust, but it is much more dangerous. And, of course, to Mr. Fletcher and everybody else in connection with the company its true nature was not known.

1082. We have had some big figures from you; you said you measured hundreds of thousands of cubic feet of gaseous mixture in the bords near Martin's body?—For certain, 350,000 cubic feet in the locality I measured it to my satisfaction.

1083. Is it a question of measurement or opinion?—It is a satisfactory estimate, to my mind.

1084. Is it by measurement or opinion?—Measurement.

1085. You say you call it measurement. Why do you call it measurement? Did you actually measure anything?—If you will allow me to explain, I will do so.

1086. Did you measure anything?—I measured upon the plan the lengths of the bords, and then took samples which proved to me that this gaseous mixture was continued up the bords to their dead ends.

1087. That is what you mean when you say you measured?—Yes; I measured 40 chains of bords containing gaseous mixture—bords averaging 10 ft. high by 14 ft. wide; that comes to about 350,000 cubic feet. I say "For certain," because there was some ventilation? I believe, as a matter of fact, there was nearer 500,000 cubic feet of gaseous mixture emitted.

1088. Do you mean 500,000 cubic feet of gaseous mixture?—Yes; 10 per cent. of gas. That is the most explosive mixture.

1089. You had this analysed, and you said there was no afterdamp in any appreciable quantity; what do you mean by appreciable quantity?—There was no carbon dioxide and no carbon monoxide in any serious quantity such as you expect in afterdamp.

1090. What do you deduce from those analyses?—That there was ventilation in those places. Here is the analysis; the afterdamp is a combination of gases given off after an explosion, CO , CO_2 , N , and possibly unconsumed CH_4 . The main constituent of afterdamp is carbon dioxide, that is CO_2 . In this analysis the CO_2 is really harmless. The highest quantity is 0.37. The afterdamp had apparently been carried out by some ventilation which had taken place.

1091. Is it heavier than air or lighter?—It is one and a half times heavier.

1092. Is it not a fact that it is usually difficult to get any appreciable quantity of afterdamp after an explosion?—This was six days after.

1093. But it is usually impossible to get afterdamp immediately after an explosion?—No, it kills on an average 80 per cent. of the men who die by colliery explosions.

1094. I think you admitted to Mr. Napier that so far as Martin was concerned there is no evidence of burning?—No, it was an extraordinary thing that Martin's hair even, according to the doctor, was not burned, and the upper portion of his body was not injured; but his intestines were burned, and the lower limbs were also burned and fractured.

1095. This is what the doctor said of Martin: "This man had a compound fracture of the skull—a piece of coal was driven into it; there were compound fractures of both legs below the knee: There was a fracture of the left femur in the middle third; the body was devoid of clothing; there was a fracture of the left side of ilium: the intestines were exposed and charred; death was due to violence." If there had been, as you suggest, 68,000 cubic feet of gas round about there which had ignited and exploded, would not Martin's body have been charred to a cinder?—There is no evidence against my theory. I would like to explain to you the phenomenon. The gas at that point may have been so extremely high in proportion to oxygen that the explosion was only a feeble one at that point.