

144. *Sir J. Hector.*] You mean the dust must have been exploded?—Must have been raised by the concussion, caught by the flame, and exploded, as coal-dust itself explodes; also, there are distilled all the gases that the coal-dust contains, and, if there was any gas about any place, possibly so small that it could not be detected, that would add to the explosion too.

145. And you attribute the explosion in some way to coal-dust?—Yes; for the reason that the coking shows that there has been coal-dust, and we know that coal-dust explosions vary in intensity; the force varying in intensity shows it was a coal-dust explosion. Gas would explode equally in all directions.

146. You say they vary in intensity in this case as a proof that it was due to coal-dust?—Yes; in some places the brattice would be knocked about, the props down, and a heavy coking would be on the props, while in other places there would be no sign of injury or damage.

147. *Mr. Proud.*] Was the mine dry in that particular part?—When we went through the mine after the explosion it was dry.

148. *Sir J. Hector.*] You said there was one part and in one direction that the mine was wet, and that the explosion did not seem to have affected it?—The force was strong here [indicated—bottom level, west side], but a few pillar-lengths away there was no sign of the explosion at all.

149. Were these old pillar-workings dry or damp?—This was the damp section of the mine. It had two dams on the top which would add to the dampness. Drips of water were seen coming from the pillars on this side, and this would create moisture.

150. Have you had any personal experience of coal-dust explosion?—No. I have seen small explosions of firedamp, but in such there was no coking on the props.

151. *Mr. Park.*] Can you account for the men running away?—I think the in-rush of air as well as the small flame, such as is indicated on this piece of burnt paper, would cause the men to run at once. They would meet the after-damp and were overcome by it. I do not think such burning as shown in that paper would be enough to kill the men. It must have been the after-damp they perished from in such places.

152. *Sir J. Hector.*] Could it be anything else than after-damp? Could it have been white-damp?—Yes, it could well be white-damp, because white-damp is the product of flame.

153. You know nothing about dust-explosions?—Nothing further than from reading authorities.

154. When you visited the mine, did you find the caps covered with dry dust?—Certainly, on this occasion.

155. So that the dry dust in this part [indicated] must have been affected?—By the explosion.

156. So that the whole of the dust in the mine would have been burned if it had been a dust-explosion?—No; because there was a great quantity of dust to be seen there after the explosion. I account for that simply through the want of oxygen. Had there been even a sufficient amount of oxygen there it would have burnt.

157. You mean the first explosion would have consumed only a portion of the dust, and the dust-explosion itself might have contributed to fan the amount of flame?—Yes, by tearing up the stuff between the sleepers and rails, which would be converted into dry-dust. Also the coal, on striking the pillars, would collect all the dust and the concussion would knock the dust off the sides and the explosion would be carried on until the dust came out at the mine mouth.

158. Was there any white-damp in the mine?—I think from the flame white-damp might arise. The only source of white-damp is from flame. To me it seems largely a matter of theory that there was white-damp there; there might have been a little firedamp present.

159. Unconsumed in the explosion?—I do not say so. It might have been given off after. I got a sample of the air taken by Mr. Aitken on the succeeding day.

160. *Mr. Park.*] Can you give me a reason why the dust was not consumed?—Because there was far more dust than the air in the mine at the time of the explosion could burn or consume.

161. Did you find much charred dust?—We found very much charred dust driven against the props; generally on one side, sometimes on two.

162. *Mr. Skellon.*] Is it not very strange that an explosion like this has never happened before? Is it a new thing to have blown-out shots in mines?—It needs a particular combination to cause an explosion of coal-dust. The dust requires to be very dry, very fine, in the air in suspension, and exposed to a large volume of flame. That flame requires to be of a high temperature: in fact, there are many conditions required.

163. You say the men were running away, and there might have been a small accumulation of gas. Could not the flame from the shot have first fired the gas, and thus gas have been the primary cause of the explosion?—That of course is possible, but at the same time when that shot went off it would also give off a flame. The flame would catch the dust and cause the main explosion afterwards. Either would be quite possible. The only thing is I cannot find any evidence to point to the ignition of gas. I heard the evidence at the inquest of Tennant, the roadman, that there was no place where there could be a large accumulation of gas.

*The Chairman:* We cannot take what you heard.

165. *Sir J. Hector.*] By what characteristics would you recognise an explosion of gas from an explosion of anything else?—I would not expect the gas to show coked dust on the props the same as a coal-dust explosion. I should expect that the force would be more or less equal in all directions. That is the effect of an explosion of gas. Taking it in this case, the explosion shows at different points a varying intensity, and the cloud of dust that came out of the mine is proof that it was a dust-explosion, and the varying intensity of the force is also proved by the brattice-cloth, props, trucks, and men being driven in all directions.

166. What subsequent action did you take as Inspector of Mines?—On the Monday I requested the mine should be made safe, because there was a great risk in the previous rescuing work. I am speaking of ventilation and securing of the roof.