

171. You took an air-test measurement with Mr. Morgan and Mr. Penman?—Yes.

172. Can you give me the result of that air-test?—We took it in the main return, to see what the fan was producing. The manager was with us and said the fan was running under normal conditions.

173. When was this?—Last Friday, 2nd October. We went down into the mine with Mr. Penman, and asked him to show us the best places in the main return airways communicating with the upcast shaft. We selected two places which were suitable for air-measurement. In the main return, little dip, we got 31,995 cubic feet per minute. In the other main return we got 11,600 cubic feet per minute. We used two anemometers, and both Mr. Morgan and myself took the air-measurements, so that there was no error.

174. You checked each other?—Yes. The total air was 43,630 cubic feet per minute. I also took air samples of the main return-air, possibly still short-circuited somewhat. It appeared to be very good air.

175. *Mr. Dowgray.*] It may have been short-circuited?—Yes, Mr. Penman said it was. The ventilation of the mine is far from being restored yet.

176. *Mr. Wilford.*] Is not such a test as that worthless for the purpose of the mine, unless the air is not distributed into all the workings?—We were testing to see what the fan could do. Of course, you must distribute it throughout the workings of the mine to remove accumulations of gas.

177. What is the use of that test if the workings are not ventilated?—Of course, the quantity of air produced by the fan does not prove adequate ventilation.

178. It does not prove distribution?—No, that is so, although that fan under normal conditions would be adequate to supply the mine with the minimum quantity of air required by law—much more than the maximum quantity. With such a difficult mine to ventilate, if I were installing a new fan I would put in one with a capacity for 200,000 cubic feet per minute. I find that the area of workings in the Extended Mine is practically the same as at Ralph's Mine, whereas the fan at the Extended Mine has four times the capacity of that at Ralph's. If it were not necessary to put in a new fan at Ralph's with a capacity of 200,000 cubic feet, probably one would not have recently been ordered.

179. It has been said, Mr. Reed, during this inquiry that the law does not allow Inspectors to enforce the use of safety-lamps. Have you anything to say on that point? Section 56 of the Coal-mines Act deals with "defects not provided by extra express provisions in the Act"?—But as regards safety-lamps there is special provision in Special Rule 14.

180. That rule says, "The underviewer, under the direction of the manager, shall see that locked safety-lamps are used and naked lights excluded wheresoever and whensoever danger from firedamp is apprehended, and shall see that proper caution-boards or signals are placed and maintained for the purpose. He shall also examine the lamps, and shall immediately withdraw any that he may find unsafe. The underviewer or his deputy shall see that the roof and the sides in all working-places are properly secured by the person working in them, and that the roof and sides of every travelling-road be made and kept secure. The underviewer or his deputy shall visit every working-place as often as is practicable during each shift." Which part of that rule do you rely on?—The first portion. The most important is this: "The underviewer, under the direction of the manager, shall see that locked safety-lamps are used and naked lights excluded wheresoever and whensoever danger from firedamp is apprehended, and shall see that proper caution-boards or signals are placed and maintained for the purpose." That is the allusion which prohibits the application of section 56. I am not a lawyer, but Mr. Macassey is reported in the *Dominion* of the 25th September to have said that the Inspector of Mines could not enforce the use of safety-lamps, but provision would be made in the new Bill.

*Mr. Macassey:* My remarks referred to Mr. Miller's opinion, and the point was that there was no reasonable ground for apprehending danger from firedamp.

181. *Mr. Wilford.*] Following on my question as to what part of Rule 14 you relied on, and your answer, I want to ask you this: considering the fact that Mr. Fletcher, on the 14th January, 1914, wrote to the Inspector of Mines admitting three burnings through gas-ignitions in the Taupiri mines, should not precautions have been taken by him in the way of safety-lamps?—That is a matter of opinion. Mr. Fletcher may have acted honestly upon his opinion. I think they should have been in use. My letters show that fully, and they were written before the event.

182. I got the loan of Professor Dixon's evidence and my cross-examinations of him before this Commission, and I noticed on page 14 of his evidence that he said, "You will find gas if there is only 2½ per cent. present"?—Yes, he said that.

183. What are the recognized authorities on luminous flame tests?—The British Royal Commission's last report, and Professor John Cadman, who went into details of the subject. I find that I myself can easily read 1½ per cent. I have been experimenting considerably on this subject. At my request the Government imported gas-cap observation-machines, which have been established at the principal coal-mining centres from Whangarei in the north to Invercargill in the south. I had one of the machines at the Mines Court in the Auckland Exhibition, and I proved many times that I can easily see a 1½-per-cent. cap, and a man with better eyesight can read ¾ per cent. I can produce the British Home Office rules upon that subject and the Royal Commission report. I would refer you to the report therein of Professor John Cadman, of the University of Birmingham, who was the expert appointed by the Home Office to investigate and make experiments on the subject.

184. What I want to know is whether you can find gas at less than 2½ per cent.?—Yes, Mr. Young read 1½ per cent. distinctly. I can do the same.

185. When I had Mr. Wear in the box, I asked him how he tested for gas, and he held his arm up, not quite straight over his head, but at an angle, like that [position demonstrated]. I took a lamp and placed it in his hand, and suggested that at that height it would be impossible for him to detect gas by the flame, because he could not see the cap?—That is not the way to hold the lamp. To hold it up like that is the action of an amateur. Of course, the range depends upon a man's eyesight.