

TABLE I.

Analyses of Some Samples of Air Taken in the Mine

(Haldane and Meachem)

No. and position on plan	Name of road	Distance from shafts	Temperature	Deficiency of oxygen	Carbonic acid in excess	Fire-damp
		Feet	Degs. Fahr.	Per Cent	Per Cent	Per Cent
A	Main North Intake Airway	150	55	0.00	0.000	0.00
A	Main North Return Airway	150	74	0.37	0.100	0.06
B	North Intake Airway	5,850	71	0.16	0.090	0.05
B	North Return Airway	5,850	78	0.36	0.100	0.06
C	Intake Airway	7,920	73	0.25	0.095	0.06
C	Return Airway	7,920	80	0.77	0.250	0.06
D	Intake Airway	9,150	83	0.88	0.280	0.11
D	Return Airway	9,150	83	1.70	0.310	0.28
E	Main South Intake Airway	150	55	0.01	0.470	0.00
E	Main South Return Airway	150		0.24	0.000	
					0.095	0.07

This table shows that as the air passes through the mine it steadily loses oxygen and gains carbon dioxide. On the average, however, the oxygen loss is 3.13 times the gain in carbon dioxide. It is very noticeable that the temperature increases with the diminution of oxygen from the air, and Haldane and Meachem's calculations above quoted show this increase to be greater than could be accounted for by friction.

TABLE II.

Composition of air in mine.

(Haldane and Meachem.)

Temperature Degs. Fahr.	Deficiency of oxygen	Temperature Degs. Fahr.	Deficiency of oxygen
55	0.00	78	0.36
71	0.16	80	0.77
73	0.25	83	0.88
74	0.37	83	1.70

Two more series of tests similar to the above were made at different times. The results checked those given above very closely except that the percentage of carbon dioxide in the samples taken on January 5 showed a marked increase over that found in previous samples. Haldane and Meachem attribute this to the fact that the barometer was falling on that day, and that this fall caused a flow of gas from old workings.