

	One-roomed houses				Two-roomed houses				Houses of four rooms and upwards			
	No. of Cases	Lowest	Highest	Average	No. of Cases	Lowest	Highest	Average	No. of Cases	Lowest	Highest	Average
Persons per house (per room in last class)	29	2	10	6.6	13	4	10	6.8	18	1	3	1.3
Space per person	23	104	528	212	13	148	395	249	18	391	4206	1833
Temperature (°F.)	21	43	61	55	9	50	59	53.5	13	42	63	54.5
Carbonic acid	28	6.3	32.1	11.2	12	7.1	13.2	9.9	18	4.5	11.7	7.7
Organic matter	29	7.8	38.1	15.7	11	5.0	30.2	10.1	18	1.1	12.0	4.5
Total micro-organisms.	28	6.0	240.0	60.0	13	8.0	128.0	46.0	18	0.5	22.0	9.0
Bacteria	19	6.0	120.0	58.0	11	6.0	118.0	43.0	16	0.5	16.0	8.5
Moulds	19	0.	5.0	1.2	11	0	10.0	2.2	16	0	1.0	0.4

On each night similar analyses of outside air in the streets were also made for the purposes of comparison. If we subtract the amounts found in the air outside from the above quantities, and take the corrected averages for the air of the better class of dwellings as unity, we obtain the following table :—

	Houses of four rooms and upwards	Two-roomed houses	One-roomed houses
Cubic space per person	1	0.13	0.11
Carbonic acid	1	1.5	2.0
Organic matter	1	1.6	4.4
Micro-organisms (total)	1	5.1	6.7
Bacteria	1	5.1	6.9
Moulds	1	5.5	3.0

These tables show clearly the enormous differences in the purity of the air of different classes of dwellings.

The fact that the increase in death-rate runs parallel with the increase in air pollution does not prove that the former is the cause of the latter. But we may argue from other evidence that the pollution of the air is one very potent cause, and probably the chief cause, of the increased mortality.

THE AIR OF SCHOOLS.

We examined during winter at least two rooms in each of the Board schools and several denominational and private schools in Dundee, besides several lecture rooms in University College. The rooms examined may be classified in the first place according to the means of ventilation, as this was found to make an enormous difference in the results. A certain proportion were ventilated by ordinary means, such as fires, open windows, and ventilators in the roof. The rest were ventilated mechanically by blowing air by means of fans over hot pipes, and thence into several rooms by means

of shafts. The following table gives the results obtained with the two kinds of ventilation :—

	Schools							
	No. of cases	Naturally ventilated			Mechanically ventilated			No. of cases
		Lowest	Highest	Average	Average	Lowest	Highest	
Per cent. of windows open.....	...	...	...	22	3	...	...	...
No. present, including staff.....	39	27	191	92	61	20	170	20
Space per person.....	39	56	427	168	161	119	288	20
Temperature (°Fah.).....	35	44	65	55.6	62	58	69	18
Carbonic acid.....	39	7.9	37.8	18.6	12.3	7.0	19.6	20
Organic matter.....	38	5.0	40.3	16.2	10.1	3.4	19.0	20
Total micro-organisms.....	35	8	630	151	16.5	0	58	18
Bacteria.....	28	8	600	151	16.0	0	56	18
Moulds.....	28	0	4	1.1	0.58	0	2	18
Or above outside air:								
Temperature (°F.).....	25	3	34	16.8	21	22	23	3
Carbonic acid.....	39	4.1	34.3	15.1	8.9	3.5	16.1	20
Organic matter.....	38	0	31.4	7.8	1.1	0	51.2	20

Or, if we take as units the average cubic space, the average excess over outside air of temperature, of carbonic acid, and of organic matter, and the average micro-organisms, in mechanically ventilated schools, the comparative results for naturally ventilated schools may be expressed as in the following table :—

	Mechanically ventilated	Naturally ventilated
Cubic space per person	1	1.0
Temperature in excess of outside air	1	0.66
Carbonic acid	1	1.7
Organic matter	1	7.0
Micro-organisms	1	9.2
Bacteria	1	9.4
Moulds	1	2.0

We now come to some of the most unexpected and interesting of our results. Wishing to test more thoroughly the results of mechanical ventilation, we made a number of comparative experiments on different days in the same room. The circumstances