

Fresh air contains about 4 parts carbon dioxide in 10,000, and the presence of 6 to 8 parts in 10,000 is scarcely noticeable, but the presence of 11 parts in 10,000 is distinctly perceptible, and when higher percentages are found the air is sufficiently stale to be not only uncomfortable, but actually injurious. Since an adult breathes about 500 cubic inches of air per minute, and as respired air contains about 3.4 per cent. carbon dioxide, it is clear that approximately 17 cubic inches of carbon dioxide are exhaled per minute, and from this data the following table has been prepared:

Parts carbon dioxide in 10,000.	Cu. ft. of fresh air per minute per person.	Percentage respired air.
4	Infinite	0
5	10029
6	5058
7	33.387
8	25	1.45
9	20	1.74
10	16.7	2.03
11	14.3	2.32

Common standards of good ventilation are taken as allowing between 6 and 8 parts of carbon dioxide to 10,000 parts of air, and a comparison of the two tables will show that they give about the same results. Allowance should be made for the size of the room and the period during which it is used at a time, for where there is a large space per capita, even if no fresh air is admitted, it will take some time for the air to become polluted.

With a system of forced ventilation there is a tendency to install small ducts, as the available space for ducts is generally limited, and by an increase of pressure the requisite amount of air may be delivered even with small ducts. It is a great mistake, however, to use a high pressure, even though it be available, for at too high a velocity through the ducts a rush of air is distinctly audible, and air entering and leaving rooms at a high velocity will be certain to produce uncomfortable drafts. Some device for cleaning the air supplied is also necessary, for no matter where the inlet is placed there is bound to be mixed with the entering air some dust and soot.

We should then aim to keep a constant temperature at a constant humidity, and to supply pure screened air in positive quantities without creating perceptible drafts.

The equipment at St. Paul's Hospital consists of a motor-driven fan; tempering coils, and heating coils, with their supply and return pipes; ducts for a distribution of air with deflectors for adjustment and dampers for control; thermostats for control of