

That is the second item of expense. It remains for us, therefore, to sit down and count the cost, whether we will put up with the dangers and inconveniences and discomforts of bad ventilation, or pay the charges for introducing and keeping up a system of changing and purifying the air that we breathe in our dwellings, or that the animals under our charge breathe in their stables.

WHAT IS VENTILATION ? Theoretically, perfect ventilation consists in removing the unwholesome products that are diffused through the air of occupied rooms, as rapidly as these products are formed. But perfect ventilation exists only in theory. Practically, we are satisfied if we can remove a certain portion of these products,—carbonic acid gas and moisture from the lungs,—and dilute the remainder to a definite standard, by mixing with pure fresh air. An ordinary test of a system of ventilation, is to determine the percentage of carbonic acid gas present in the



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air of the room, and compare this with the amount of the same constituent that is found in pure air. In any case, ventilation consists in removing certain portions of the air, and continually introducing fresh air. The rate at which this is done will fix the degree of completeness of the ventilating arrangements. For this constant removal and introduction of fresh air, certain forces operate, which forces depend upon certain physical principles. It is important that every man who is thinking of ventilating his house or stables, should understand these principles, in order that he may adapt the suggestions that are made in this pamphlet to suit his own circumstances.

THE PROBLEMS IN VENTILATION. The object to be gained in ventilation is the maximum quantity of fresh air. But with the introduction into a room of large quantities of fresh and generally cold air, we must