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WINTER VENTILATION.

THE FORMULA OF MONTGOLFIER.

A constant supply of pure fresh air is of such vast importance to health, that the subject of ventilation—of changing breathed foul air for fresh pure air—cannot be too often referred to or treated upon.

During the warm summer weather the doors and windows of dwellings, schools, churches, etc, are usually more or less open, and permit a free circulation of air within for the use of the occupants, except that many are too much afraid of and exclude the night air; but as the weather becomes cold these places of ingress and egress for air are kept closed and the occupants breath again and again during the winter, air which has been already breathed. From this cause chiefly the death wave is swelled up in the spring, in March and April, from lung diseases, to its highest point in the year. The wonder indeed is, that so many live through the winter and spring with so little pure fresh air.

In the case of rooms or other places where grates or other open fireplaces are used, a good deal of foul air is withdrawn through the chimney, and where there is no proper or special inlet, air, more or less fresh and pure, comes into the apartment through cracks and crevices and through the wall to make up for that which has been withdrawn. But it is better always to provide a special inlet for the pure air to enter. When there is no special inlet, much of the air forced into the rooms to occupy the space vacated by the air passing up the chimney, comes by way of the cellar or basement, and hence through soil, usually more or less foul and bringing impurities with it.

Few foundations or basements of dwellings or any other buildings are so constructed as to prevent damp air coming into the cellar or under the first floor and extending up along the walls, whether these are of brick or wood, and getting into the rooms. The warm rooms give rise to a great suction force, and air is drawn in from the soil as well as from above ground. And it is well known that air coming through dark, damp cellars, or spaces under floors becomes at once dank and unwholesome.

It is better, therefore, in all circumstances where rooms are not warmed by a furnace in the basement and provided with special means of ventilation—that is, in all ordinary rooms, schools, churches, or any occupied apartments, to provide special inlets for pure air, and not to rely on the cracks and crevices, however good may be the provision for withdrawing the foul air.

As relates to the size of inlets and the amount of air which enters them, there are many enquiries. The quantity of air entering an inlet of a given size will depend on the difference in temperature, and consequently in weight, of the air