capacity takes place that it then will hold actually 7.9 grains, or eight times as much. Now we have already referred to moist air being four times a better conductor of body heat than dry air is; hence, while outer air at zero heated and brought into a room at 80° F. is made much drier and enveloping our bodies acts as a non-conductor of body heat, yet it actually serves to rob the body of its heat by its causing evaporation through insensible perspiration from the surface at so rapid a rate as to actually produce a sensation of cold. Indeed, experimentally we know that a room at 60° F., with a relative humidity of 70% approaches the happy medium of comfort and with no air currents occurring in the room lends to persons sitting still a sensation of *bien être* perhaps greater than any other temperature. It is further most important, from the standpoint of economy, since it is found especially in cold weather, that just as radiation is proportionately rapid in proportion to the difference in temperature between two bodies, so every extra degree of increased temperature required of a furnace means notably more coal consumed. Indeed, as much as 25% more coal it is estimated is required to maintain 70° F., instead of 60° F. in say zero weather.

It is, however, important to remember that into this heating problem other most important factors enter. Thus a single window radiates heat probably 25 times as fast as would double windows with tight space of air say 6 inches in thickness. Hence, a double window is a *sine qua non* to effective heating and ventilation in a cold climate. But more than this, a great difference is found in the radiation of heat between the north and south sides of a house, in cold weather. In the cold weather during the day the sun streams in the south windows by radiant heat warming all the walls as well as the air of the rooms. The north side is never so warm; but on the contrary, is exposed to the northerly winds which are found to rob surfaces of heat directly in proportion, not alone to their temperature, but also to their velocity. We thus have illustrated how many factors enter into the heating of even a small house. But we have said nothing of how in keeping the house warm we may also maintain its air fresh. One thing is quite clear, viz., if we exhale some 2 lbs. of carbonic acid in 24 hours, due to inhalation of oxygen (3 lbs.) and to tissue combustion that placed in a box sealed hermetically we would gradually exhaust all the oxygen or be poisoned by the carbonic acid and other volatile emenations from the body. Clearly we require to introduce fresh air and its oxygen, estimated to be at the required rate of 2,000 cubic feet of fresh air per person per hour. Naturally, when we do this, we must push out the foul air and so it comes about that we must by some simple