

if possible, to be to the south. The direct rays of sunlight are so active in promoting rapid metabolism in tissues, as observable in a plant placed in a south window, as compared with a north window, that nothing more need be said to illustrate the fact. Hence, we should get in all the sunlight possible.

As regards lighting, the amount of light required is large not only for sanitary purposes, but also for lighting up all parts of a room. One daily sees a householder either wishing, himself, or yielding to the desire of an architect to produce a so-called æsthetic effect by small, low, mullioned and small diamond-shaped panes in windows. It is absolutely wrong and only excusable if at all in a church, not in living or working rooms. A good rule is that the amount of the area of windows, placed as near the ceiling as possible, should be at least 1.5 of the floor area of a room, and direct sunlight ought to reach the farthest side of a room. Modern science, however, has done something to increase the diffusion of light by ribbed glass and luxfer prisms.

Having now got our house built as a protection against cold and well lighted, we turn to the interior and enquire how we are going to maintain its air in such a condition of normal purity, moisture and temperature as will conduce to the highest degree of health in the inmates. I assume, of course, that the house has up-to-date plumbing and water supply. Now, as stated in my lecture last year, the problem is how to maintain the air in such as state that the carbonic acid will not be more than 5 in 10,000 parts, also to see that the relative humidity is about 70% and that the temperature is 60° to 65° F. It seems simple, but in a practice it is found to be even in a small house a relatively complex problem. First, as regards the temperature, this manifestly depends upon the kind of heating apparatus. We have practically two kinds for everyday houses, viz., hot air furnaces, and hot water pipes, and both depend for their success upon their ability to transmit to the air of different rooms an adequate amount of heat economically. Almost all know that to conduct warm air to the side of the house against which a strong wind is blowing is very difficult, if other pipes are present to lead the warm air elsewhere. On the other hand, hot-water pipes will carry heat in an amount directly in proportion to the extent of pipes in a room. It is further true that a well-constructed hot-water furnace will transmit into the flow of water through it, more heat units than could be transmitted to the air surrounding a hot-air furnace.

But apart from these two economic advantages to set against the greater one of the first cost of the hot-water system, there are several other very important items as regards the effect of