

see how the *bacilli* of tuberculosis reach the tissues. We thus see that it is in the foul, deoxidized air of tenements that we are to look for congested, catarrhal mucous membranes, and for infection reaching the mouth, through nasal catarrh making mouth-breathing inevitable. We thus have the double evils of imperfect nutrition from insufficient oxygen, and of the poisonous effects of infected air. These slum conditions, however bad they may be in southern cities, are relieved by the outdoor life possible even in winter, while in northern cities we have the impure air of houses with the abnormal dryness of furnace-heated houses, due to the great differences in temperature and moisture between indoor and outdoor air in the winter months. When it is realized, for instance, that in Ireland, with its small chilly cabins, heated only with turf fires, the deaths from diphtheria in 1893 were but 0.08 per 1,000, and in London 0.78, and that while the death-rate in all Scotland in 1892 was 2.3 per 1,000, that in the rural fishing villages with their cold and wet, was 1.7 per 1,000, it will be seen that the conditions of house atmospheres are the most potent influences of any single factor in climate. To give but a single Canadian example: I have found that in the beautiful foot-hill climate of our own Alberta, the death rate of some of the Indians on certain reservations, where they live in small, crowded and insanitary houses, reached last year as high as 80 per 1,000, largely due to consumption.

Manifestly then, the maintenance of cleanliness in houses, together with an abundance of warm air with sufficient moisture, is primarily of all conditions that upon which health in temperate climates depends.

*Carbonic Acid*—It has been already explained how oxygen obtains entrance to the tissues, and to what extent. In the tissues it is taken up by the red corpuscles through the thin lining membrane of the lungs, and by them carried to the tissues where it unites with their carbon to form carbonic acid. Some 1,400 grains, or 2 pounds of carbonic acid is given off by the lungs in twenty-four hours. Thus we see that oxygen burns up the wastes of the body to the extent of nearly 3 pounds given off daily, further increased one-third by active exercise. It need hardly be pointed out that this active life process produces heat, and that it goes on best and normally in the pure outdoor air, which on the plains and mountains is almost germ-free. If then, wastes are produced by this organic combustion and are thrown off by the lungs, skin and kidneys, it is apparent that the fuel thus burnt up demands that a fresh supply, in other words, food, be taken into the system. So we see how absolutely essential it is if we