

practically inappreciable currents of house atmospheres and their universal presence in out-door air. Yet, in nothing does the startling susceptibility of many systems to external influences show itself so much as in the effects of such currents. The maximum changes in the air of a room without creating injurious currents are usually stated at six times per hour, while the average rate of the wind in Britain is twelve miles per hour. Galton elaborates this difference by supposing a person placed in a box 6 feet by $1\frac{1}{2}$, and assumes the air to move at the rate of 6 feet per second, when in one second 54 cubic feet, in one minute 3240 feet, and in one hour 196,400 feet would flow over the person.

Evidently, then, in the very nature of things there are radical differences between the two airs as regards their movements. We naturally ask, however, why is it that we cannot permit of more rapid movements in house atmospheres without injurious draughts? According to Pettenkoffer: "The unpleasant sensations from draught arise from a one-sided cooling of the body or some part of it; this frequently is caused by a corresponding motion of cold air, but also in other ways, as by increased one-sided radiation, which causes a local perturbation in our heat economy and thus produces local consequences." In some instances, if the passing air be of abnormal dryness, the disagreeable sensations of cold will be increased, as in the case of a warm, dry air from a furnace register. This question of draughts in a room stands in intimate relationship with the point already discussed, viz., that of unequal temperatures in different parts of a room, as at the floor and the ceiling, as compared with that five feet above the floor. Remembering further, the ordinary construction of windows and doors, we need hardly recall the open spaces around them referred to by Longfellow, when he sings:—

"They sat within the farm-house old,
Whose windows looking o'er the bay,
Gave to the sea-breeze, damp and cold,
An easy entrance 'neath and day."

Manifestly, we have in these unequal currents a condition as opposed to health as it is different from that of out-door air. In the latter air, the body, being equally exposed and the feet well protected by overshoes or heavy boots, does not experience cold to an extent comparable with the difference between the two temperatures; while in

the house, the body, being unprotected by overgarments and over-shoes, the feet, of all parts the most liable to suffer from cold, are exposed to a temperature often much below that considered normal for the whole body.

Not only, however, are there cold floor currents, but there are also in many rooms with much outer-wall surface chilly descending currents. A notable difference is often to be found between the air of cities and that of the open country. High buildings obstructing the sun's rays make marked differences in the temperature on the north and south sides of streets, and even between the east and west sides at certain hours of the day. With a diathermanous atmosphere, as in high altitudes, this effect is very marked, and I have been informed by a gentleman living in Colorado for his health, that the change from one side of the street to the other is often more noticeable in its effect on the respiratory tract than the change from day to night.

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In these days of the germ theory, when almost every disease can be shown to depend upon the introduction and rapid multiplication and development of bacteria in the system, and many can be produced at will by inoculation with bacteria of artificial culture, nothing can be more interesting and profitable to the student of medical science than to obtain as thorough a knowledge as possible of these microscopic forms of plant life; both as to their cultivation including the kind of soil, atmosphere, and temperature best suited to their growth, their manner of reproduction, and also the best methods of destroying them. I believe that at the present time Koch's Bacteriology Course, given in the large laboratory of the Hygienic Institute, Berlin, offers the best facilities for such study. The course lasts one month and with one or two exceptions a course is given every month in the year. There are places for between thirty and forty students, and all the civilized nations of the world are represented among them. Cultures are made by several different methods and in different materials such as potato, bouillon, gelatine, agar-agar, etc., of all the known species of pathogenic and nonpathogenic bacteria and moulds; and every part of the work even to washing and cooking of the potatoes,