

I have consulted have influenced me in coming to this conclusion. To sustain me in this view I will submit a few excerpts from their studies and experiences for your consideration.

Mr. J. F. Simmance delivered a lecture at Liverpool in October, 1891, before the Association of Public Sanitary Inspectors of Great Britain, when he said, "The first essential of a good system of ventilation is that it shall not produce discomfort by causing a feeling of cold, air, even warm air, impinging to a perceptible extent upon the skin's surface, producing rapid evaporation, which causes 'a cold.' . . . A perfect system is under complete control. It must be in our power to increase the intake of air and the rapidity of its expulsion as circumstances vary. . . . No fixed rule can be adopted, but we must have a system which at will may yield a giant's power or be quiescent. It must be simple, so that every one may be able to understand it, and scientific, so that accepted philosophical formulæ may enable success or failure to be reasoned out on paper . . . a system so thorough that no person is obliged to inhale products of previous respirations. Then it may be looked upon as perfect, and the nearer it approaches this perfection the more worthy will it be of adoption."

For a building dedicated to the purpose of public speaking, and with a certainty of protracted discussions, indubitably the foregoing described the perfection of ventilation.

"Sir, give me air, might be the motto of the public speaker" ejaculated one, and a witty American divine called upon to speak at the end of a long sitting said, "While thanking the committee for the supply of air which they had provided, he would be much pleased to sample some of the leagues which the Creator had located overhead outside."

Mr. Henry J. Osborne, in writing on the subject of ventilation, said, "He had been led to make some investigation into the subject. First instance the Free Trade Hall at Manchester, seating about five thousand people. This great hall has been in use for thirty years, and is one of the best-ventilated buildings in the country. The result is obvious in the freedom of the speakers from the depression inseparable from a vitiated atmosphere, and that of the audience from coughing, and other signs of irritation common elsewhere. Another example is that of the great Assembly Hall at Mile End, probably the best-ventilated hall in London. It holds about five thousand people, and, though filled to its utmost capacity, is remarkable for the comfort of the speakers and hearers secured by good ventilation. . . . Both these buildings are heated by Constantine's convoluted stove, with the remarkable result that it has been discovered that the warm-air grids arranged for heating provide in summer the requisite for fresh air, thus securing improved ventilation."

The first variety of these stoves were devised and patented by Messrs. Whitaker and Constantine in 1867. They have undergone many improvements since then, and now appear to be the most perfect of their kind. They are so arranged as to bring the maximum of heating-surface into contact with the atmospheric air, while keeping fire and air separately from each other, to the advantage of added purity to the latter.

In his chapter on the development of coils and radiators, Mr. Baldwin says "The earliest hot-water radiators were coils of cast-iron pipe carried about the sides of rooms, &c., in the most primitive manner. Usually they formed a continuous circuit from the boiler round the building and back to the boiler again, the water from one coil passing into another, and so on to the end, each being somewhat cooler than the one preceding it. This is technically known as a positive circulation, meaning that it must circulate in a certain direction if it moved at all. This principle required pipes of a large diameter, otherwise the resistance would be so great from so much pipe and so many elbows the water would not pass around the circuit in a sufficient volume to keep the last part of the circuit or heating-pipe at anything like a sufficiently high temperature to be of service as a heating-surface. The objection to such a system, aside from its appearance and bulk, was that no part of the circuit could be stopped without stopping it all. . . . It is obsolete now, and only used for special purposes."

In this connection it is curious to note that, having adopted a crude or primitive system of effecting an object, how reluctant a community is to change it. It is so in England, as pointed out by Mr. Seddon. It is so here, and, I believe, everywhere outside the United States of America, where the craving for something new is almost universal. It has been so in the case of this ventilation, when, instead of adopting at once a known successful system, there have been annual efforts to render successful a system elsewhere long ago abandoned. I hope this note is only understood as trying to describe one of the phases of our social nature.

As everything hitherto done to improve the ventilation and to clear the atmosphere within the House has failed to give satisfaction, I venture to point out that, before there is any possibility of effecting such a result, there must be a basement constructed under it, having a clear height of not less than 7ft. 6in.; that, to insure a regular steady supply of pure fresh air, mechanical means be adopted, as, for instance, by a "Blackman's Fan," impelled by a gas-engine, with a cone regulator (2-horse power would be ample); that the plan of the basement be suitably arranged for gas-engine, fresh-air room, air-warmer, mixing-room, and fan, with the treated air-supply taken therefrom; that the floors, walls, and ceilings be finished in smooth cement plaster.

The air should be introduced from Sydney Street, as it has the clearest exposure, the air from that side being freer from dust and other impurities. Being contiguous to a sloping bank, it affords admirable facilities for dealing with its better purification. As far as I can at present judge, the position of the furnace need not be changed, if an amended system of hot-water heating be adopted, but it might be found advisable to move it as near to the centre under the House as may be possible to insure draught to the flue, if air is to be the heating medium.