

cooled so quickly by the roof-windows, &c., as to fall towards the floor very rapidly—so rapidly as to feel like a draught.”

This last extract, taken in conjunction with the evidence of Sir G. Gurney, struck me as so important that I made a thorough examination of all the surroundings of the House, after which I arrived at the conclusion that, though the draughts more immediately complained of may not be caused by the glass, yet, as a precautionary measure, the temperature within the lantern ought to be heated to a few degrees higher than the House, and the glass all round covered with light woollen shades. The temperature can be raised by gas-jets round the sides. This would not only have the effect of preventing down-draught from the glass, but would tend to facilitate the ventilation of the House. Again, there are over 80 superficial feet of glass in the south wall of the “Noes” lobby, which opens directly into the House. The cold plate of air from the glass falls quickly down and runs along the floor, which cold stream will flow into the House the instant the door is opened. To nullify this the glass should be covered with shades as above, and the temperature of the lobby raised as near as possible to that of the House.

I could see nothing else remarkable on the ground-floor, but round the gallery-floor there are some likely causes of down-draughts. It is probable that on this floor, as in the House of Commons, the greatest difficulty has been found in dealing with down-draughts. The first likely cause I noticed was the immediate connection of the gallery with the *Hansard*-room. In this room there are 44 superficial feet of glass with no covering or shades. This, with the currents between the doors, will keep the temperature in the room lower than that in the House; and any abrupt opening of the door will be certain to cause a stream of air to flow from the room into the House, over the gallery, and on to the heads of the members. Again, the gallery dedicated to the reporters opens directly on to what is known as the Press-stair. This staircase acts as an air-conducting flue, and will draw its supply from every available source on the ground-floor; and up the staircase will flow a continual stream of cold air, to diffuse itself among the lighter air above, and, being much colder and denser than the heated and attenuated air within the House, when the door into the gallery is opened the air from the stair will rush through with the same effects as the door opposite, though in a different direction. I would reason that both draughts would, in falling, meet in some locality, in front of and to the left-hand of the Speaker, and accentuate the motion. The foregoing reasoning will equally apply to the entrance into the Speaker’s Gallery.

The remedy to prevent draught from these doors is to construct small lobbies with sliding doors on each side, and fitted with noiseless vulcanite sheaves of a large diameter, so as to work easily. The curtains at present hung inside these doors are of little use in preventing these draughts. There are other doors on this floor which should be made to slide as above, and one at the left hand of the Speaker, on the ground-floor. The spring with which it is fitted is too strong for its weight, and it closes with a bang, and will disturb the air for some distance round.

*Air.*—All medical men contend that pure air is as essential to health as pure water, and Mr. Sykes, in “Public Health Problems” (1892), says that “the result of constructing buildings in such a manner that the space about them is restricted or obstructed is to cause stagnation of the air and the accumulation of impurities, inorganic and organic, dead and living organisms.” If this is true of the exterior, how much more injurious must it be if any part of an interior is unventilated? I crawled round the air-supply shaft under the House on the morning of the 20th instant, and was unable to find anything suggesting a passage for the ingress or egress of air into the compartment round which the air-shaft winds. If I am correct it must be an hermetically-sealed chamber, and well fitted for the generation of foul gases, that will ascend through any crevices in the floor, and be diffused through the House, and swell the impurities already there.

The air-shaft is nearly large enough to supply a sufficiency of fresh air to the House if it were properly constructed. Mr. Farrow insists that “all air-channels must be exclusively devoted to their purposes, and should not be used or even be made so as to be available for passages. They must be clean, unobstructed, and smooth, with all angles rounded, all corners filled in, and all enlargements avoided, so as to present the least resistance to the flow of air.” This air-shaft does not possess any one of these conditions. It is not smooth, it is not clean, the angles are not rounded, it is obstructed by the hot-water pipes, and lumbered by the galvanised tubes for the ingress of the external air. The flow of air is retarded by a carpet on the floor, and, worse still, by the joists of the ceiling, as each one acts as a direct check on the current. The paper on the walls I supposed to be pasted on scrim or cotton, and afterwards whitewashed. The air when I was in the shaft felt as if there were a blending of both. It is clear that in this form and condition the shaft cannot supply the House with fresh warm air, either in sufficient quantity or purity in calm weather. In such a case the air in the House must become so attenuated during a long sitting that the outer air will rush in at every door or other source, and so cause unpleasant draughts. But, more than these, the present system of introducing the air into the House is something of the crudest, as the air coming into the shaft has not time to be heated by contact with the hot-water pipes until it is required in the House, and so in it rushes, warm and cold imperfectly mixed together, the cold waves feeling to the sense like draughts.

*Present Outlet.*—With the method constructed for the escape of the vitiated air from the House, I am afraid sufficient reflection has not been given. Two cowls for the purpose have been set up; but when the air in the House becomes exhausted, as it soon must do in a crowded House, with all the doors shut, and an imperfect air-supply elsewhere, either one or another of these tubes will become a shaft for conducting fresh air into the House, and will continue to do so until the interior air is similar in temperature with the exterior, and so another cause of unpleasant draughts presents itself. This must result, as, by experiment, 52 cubic feet of air at 32° is about the same weight as that of 60 cubic feet at 100° (see W. J. Baldwin, on “Heating and Fittings”).

Having examined every part of the House, and reasoned out every contingency that suggested itself, I have somewhat reluctantly come to the conclusion that to warm and ventilate the House of Representatives satisfactorily an almost new departure will have to be made. All the authorities