

3099. Now, I want your opinion on this point: You have seen the condition of No. 7 ward. Now, assuming that this ward has been occupied for the last twenty-five years by about fifteen surgical cases, more or less continuously during that period, what should you say would be the condition of the walls and flooring so far as the germs of disease are concerned?—It is a very difficult matter to say. I have never examined hospital walls for micro-organisms. I am aware of a statement made concerning the plaster on the walls of the old Hotel Dieu, at Paris—viz., that over 40 per cent. of organic matter was found to be present. I can only account for this by supposing that a large amount of organic matter entered into the original composition of the plaster. I think that the walls of this Hospital might be made perfectly satisfactory if they were scraped and then covered with cement.

3100. *The Chairman.*] But as to the condition of them just now?—I think that they would be liable to harbour, and probably do harbour, micro-organisms.

3101. *Mr. Solomon.*] Are they a source of danger?—In their present condition, yes, to a certain extent they are.

3102. Seeing that they are a source of danger in that respect, and that the danger would increase year by year, it follows, does it not, that the longer the Hospital remains in that condition the more dangerous that state of things would be?—It may be the case, but I do not say that it would.

3103. Did you examine the drainage this morning?—I did.

3104. Are you satisfied with it?—No.

3105. Tell us whether, in your opinion, impure gas from the sewers gets into the Hospital under the present system of drainage?—I do not think it does, unless indirectly by means of the ground-air.

3106. Then, in what direction are you dissatisfied with the drains?—The freshwater gutters of the roof open into the soil-pipes; some of the closet-traps are unventilated; the bath-wastes, the basin-wastes, and sink-wastes open directly into the soil-pipes. None of these things should be.

3107. *The Chairman.*] By "directly" do you mean without traps?—No, with traps. Take the drainage of the ward we are dealing with: the special danger is that during heavy rain the 4in. soil-pipe would become full of water, and the down-flowing column would exercise an aspirating power on all the traps leading into the soil-pipe. This would infallibly unseal the weakest trap, if not others, and thus lead to a direct access of foul air not into the closet necessarily but directly into the ward itself. Further, the form of gully-trap used outside is not satisfactory, because it accumulates filth. It may be as well to further explain what I mean by aid of this diagram made after visiting the Hospital this morning. It represents the arrangement of the house-drains, soil-pipes, &c., connected with ward No. 7 and the ward immediately below it.

3108. Did the same state of things exist at Seaciff?—Yes, as regards the liability to siphoning of traps, but there were far more serious defects in the drainage arrangements at Seaciff than exist at the Hospital. The main sewer was unventilated until two ventilators were put in some years ago by Mr. Chapman. Until a few months ago the ward drains were not disconnected from the sewer; each soil-pipe was sealed above by a trap situated above a freshwater reservoir, and above the trap was a hollow plug which served as an overflow for the reservoir. Neither the closet nor urinal traps were ventilated, and the lavatory-wastes emptied directly into the soil-pipes. When the top closet was discharged it completely siphoned the middle-floor lavatory and urinal-seats, and drove gases and filth out of the lower ones. A similar result took place during even moderately heavy rain. [Diagram supplied.]

3109. And these defects are now being rectified?—Yes; I may mention that we have had a severe outbreak of erysipelas at Seaciff. During the last two months there have been ten cases; further, it has been difficult to prevent wounds suppurating. In one case a slight wound on the knee suppurated into the joint, and the patient died at the end of nine months' suppuration. Two months ago, when a somewhat severe surgical operation had to be performed upon a patient, she was removed to a cottage at a distance from the Asylum to obviate the risk of infection. In connection with the question of septic infection, I may as well give you this diagrammatic plan of the Wellington Hospital drainage as it was and as it is.

3110. Was the drainage there also defective?—Yes, as shown in this sketch representing the state of matters in 1888.

3111. Were you resident physician there?—Yes. During the course of three or four winter months every nurse, without exception, and to the number of twelve, who had to take duty in a particular ward—the children's ward—suffered from severe ulcerated sore throat.

3112. *Mr. Solomon.*] What you medical gentlemen call septic sore throat?—I do not know about the term you employ; it is quite sufficient to say that they suffered from ulcerated sore throats, which, on an average, kept each of them in bed for at least ten days or a fortnight. To show the severity of the attacks, I may mention that in several cases the temperature rose to 104°. The drains were not examined at first, because it was stated that the drainage had been carried out on the most improved system only two years previously.

3113. *The Chairman.*] Was this after the new Hospital was opened?—Yes; quite recently; only two years ago. I examined the drains, with the immediate object of ascertaining the causes of the sore throats, and found that, in the case of the children's ward, the bath-waste was connected directly with the closet down-pipe, and that the cement had cracked away, allowing an escape of liquid sewage and foul air under the flooring of the ward.

3114. That was in the children's ward?—Yes. That closet was badly situated, owing to the fact that the ward was originally constructed for another purpose. The closet was underneath the stairway, and the soil-pipe ran for a short distance beneath the flooring, the result being that, when the escape took place, the gas distributed itself immediately under the ward. The epidemic ceased when the defects were remedied. The sketches I have supplied are made from memory. It is