

Dr. FREDERICK HOWORTH JEFFCOAT, sworn and examined.

4461. *Mr. Chapman.*] What are you?—I am a Bachelor of Arts of the University of New Zealand, and B.M. and M.S., of Edinburgh University.

4462. You are a duly-registered medical practitioner, practising in Dunedin?—Yes.

4473. How long have you been in practice?—I have been graduated for four years; since 1886.

4464. But how long have you been in practice in Dunedin?—For eighteen months. I have studied in various hospitals, and have been making observations in other hospitals ever since I graduated, until I came out here, say for two years and half after I graduated.

4465. What hospitals in Europe had you opportunities of seeing?—I have worked in the Royal Infirmary at Edinburgh; at the hospital at Rosbeck, in Germany; the Hôpital St. Eloi at Montpellier, in France; the Bruges Spital and Kaiserlicher Kraukerhaus, Strasburg (Alsace); St. Jean, and Apostoli's Private Hospital, Paris; the National Hospital for paralysed and epileptic, Queen Square, London. I have seen the Old and New Infirmarys in Glasgow, and London hospitals.

4466. I understand that you have worked in some of these places and visited others?—Yes.

4467. Have you paid any attention to the subject of construction and sanitation?—More or less in a general way. I have simply kept my eyes open.

4468. To see how they do things in other places?—Yes.

4469. Now, we have heard that there are some defects in the Dunedin Hospital. I suppose you do not dispute that there are some defects?—Certainly not.

4470. And we have heard it stated that a hospital constructed on the pavilion system would have advantages over other hospitals?—Yes.

4471. What are the particular advantages of a hospital constructed on the pavilion system?—Particularly as to the lighting, but I should not say as to anything else. Combined systems of ventilation are, in my opinion, decidedly the best. A system of cross-ventilation, which can be obtained by the pavilion system, is I think decidedly open to many objections. The several wards would require to be supplied with different varieties of temperature, which can only be done by means of combined ventilation.

4472. *The Chairman.*] By a combined system, you mean artificial and natural?—Yes; by extraction and propulsion.

4473. *Mr. Chapman.*] Then you would pump air in and pump it out?—It should be drawn out simply on the extraction principle, and pumped in by machinery. It is only by such means that the air introduced into a hospital is of the temperature that is required, or that the air can be purified. If I had my way I should certainly have the patients who were suffering from pulmonary complaints in a different variety of atmosphere to that which should be supplied to surgical or septic cases. I should demand for the phthisical and similar cases a moist, warm atmosphere. I know that many advocate a cold, dry atmosphere, such as one gets in the Dam Platz and the Engendine, in Switzerland; but I think that better results are obtained in Algiers, Egypt, the Riviera, Madeira, &c.

4474. Where have you seen such methods in existence?—I do not think they have been adopted as yet in any of the hospitals I visited, on account of the cost of construction; but such a system of ventilation is in use in the Albert Hall in London, and to a modified extent in the House of Commons. I know that the Germans are building such a hospital in Berlin, but it is not yet completed.

4475. In the case of cross-ventilation by means of separate wards—that is to say, on the pavilion system—can you not get some disadvantages at the same time that you get the advantage of a free circulation of air?—It is impossible to have cross-ventilation unless the atmospheric conditions are favourable. If the wind is blowing in a particular way you cannot open the windows on that side of the room, because the air would enter at a greater rate than 3ft. per second, which is the draught limit.

4476. As to cubic space: that is important in connection with ventilation, is it not?—Certainly. It requires to be altered in different circumstances; though it seems to me that in the text-books—I have looked into the subject—the writers imagine that every hospital is situate in as reliable a climate as that in which this particular individual lived at the time that he wrote. A limit of 3ft. per second, which would be felt as a draught in a cold climate like that of England, would not be felt here—possible in Dunedin it might, but not in a climate like that of the North Island. It is a well-known fact that the warm air can enter at a greater rate, without that draught being felt, than the cold air can.

4477. *Mr. Solomon.*] What would you allow as an outside limit?—About 1,200 cubic feet per hour per patient; that is a very outside limit.

4478. *The Chairman.*] More or less, do you mean? That is the most, I think. I will not say that it is an outside limit, but it is an ample allowance.

4479. *Mr. Chapman.*] Now as to the beds in the Dunedin Hospital—the number per ward: Do you consider that they are too many, or what?—The beds certainly strike one as being closer than they would be in an ideal hospital, and closer than they are in the best hospitals that one sees.

4480. *The Chairman.*] Were these places medical or surgical?—I am speaking of medical wards particularly, but there is not much difference.

4481. The wards were not overcrowded?—No, the beds struck me as being too close together.

4482. *Mr. Chapman.*] You say that they were closer than the ideal, or what you have seen in other hospitals?—Yes. But I have seen a considerable number of hospitals in France and Germany—I do not know that I ever saw any in England—where the beds were closer than they are here.