

absorption and emission of heat, and, while affording protection against rain, would only intensify every change of temperature. In the daytime, with bright sunshine, the hutments would become exceedingly hot, and at night, under anti-cyclonic conditions especially, excessively cold. The walls and roofs would radiate an enormous amount of heat from the building, and make it a real freezing-chamber—at times much colder than outside, in fact. If the roof only were protected with a non-conductor the sides would set up serious convection currents. The men would wrongly regard these as cold draughts, and attribute them to too much ventilation. The chilling of the bodies of the inmates would create liability to all the consequences of checked perspiration, and respiratory troubles would be prevalent, especially in calm, cold, and damp weather. Influenza, sore throat, bronchitis, and pneumonia have, I believe, as a matter of fact, shown obedience to weather-control—but I would protest against this being regarded as the unhealthiness of Trentham. Epidemic diseases, as measles, however introduced, would naturally spread to an alarming extent, and germs of contagious diseases find the culture media for propagation in a humid atmosphere, calm, damp, and chilly conditions being most favourable to the spread of such epidemics. Both sickness and death show relation to the weather, but it is only indirectly, for “good hygiene has very largely replaced climate.” Acclimatization depends very largely upon a rigid observance of sanitary and hygienic rules. Neither the soil nor the climate of Trentham can be blamed for the sickness there, but want of proper precautions and provision for the large body of men. I also regard the hutments as unsatisfactory, because there is a minimum of comfort and privacy at a maximum of cost—for galvanized iron is now quoted at about £32 per ton. The surface soil is not porous, and ground-moisture creates mud and pools unless it is pierced and broken up. The subsoil is gravelly, and the water-level of saturation is generally about 15 ft. below the surface. Such conditions are, on the whole, favourable for a standing permanent camp, though the flatness of the river-valley is certainly a disqualification. There was no storm-water drainage, and mud and tiny pools lay about the camp. I thought a competent man with a little common-sense could in half an hour do as much in a good rain as a whole squad would do in a day in fine weather. There appeared to be no barrows and a scarcity of carts for the men who worked with earth and stones, and I regarded labour and fatigue duties at the camp as wasteful and trying. I inquired for and was told there was no shed or apparatus for drying boots, clothes, or bedding. Dampness is a very great danger to health, on account of the evaporation of moisture being accountable for conduction of heat. I saw there was a good guard on the “bird-cage,” but none on the hospital quarters where men were lying ill with measles.

*Mr. Gray* protested against the witness giving evidence of the character contained in the statement when he was called to give evidence with regard to the rainfall.

*The Chairman* ruled that, as the statement had been read and the views expressed, the Commission would have to accept the statement and decide what weight should be given to it.

*Witness*: I have mentioned ventilation because it and radiation are matters that concern me very much. In addition to that I have had experience as an officer of the Territorials and also experience in South Africa. I have only made this statement in order to bring the matter out, as I thought it necessary.

*The Chairman*: There is this point, Mr. Bates, that Dr. Frengley has this morning given us reasons why the huts should be constructed as they are, and his views are on an opposite footing to yours. Probably you might be asked some questions on the assumption that Dr. Frengley's evidence is accurate, and Mr. Gray might like to question you.

*Witness*: Yes.

*Mr. Gray*: Yes, I would like to have that opportunity.

*The Chairman*: You will be able to attend again, Mr. Bates?

*Witness*: Yes.

3. *Dr. Martin* (to witness).] You say that the air at Trentham at night is colder than by day compared with Wellington?—Yes.

4. You do not wish to convey the impression that it is a more unhealthy place to live in than Wellington?—No.

5. You are quite satisfied Trentham is quite a healthy place?—Yes, quite a healthy place, and probably more invigorating than Wellington. It is warmer because of the confinement in the valley, the sun's radiant heat warming it up in the daytime, and colder through chilled and denser air descending from the hills at night.

6. It is quite a satisfactory place for a camp?—Quite a satisfactory place.

7. *Mr. Ferguson*.] You said the saturation-level was 15 ft. below the surface?—Yes.

8. How did you arrive at that?—By inquiries from the people in the neighbourhood who have wells.

9. Have you any knowledge as to whether the saturation-level varies?—No. It varies, of course, with the rainfall, but not much apparently through the district.

10. You think it will vary with the rainfall?—It varies with the rainfall and with the season, but it averages 15 ft.

11. Of course, you have no data about that?—I have not made personal investigation. I got the best information I could, and mentioned it because it has a most important bearing on the sanitation of the camp.

12. *Dr. Martin*.] The question has been raised that the authorities should not have put the camp at Trentham—that it was an unhealthy place. You do not agree with that?—No, it is not so in my opinion. It is want of precautionary measures in dealing with such a large influx of men that was the trouble.

13. They were not unwise in choosing that place for the camp?—No; it is a splendid place for a camp. There is only one disqualification, and that is the flatness. The ideal place for a camp is a grassy slope.