

126. *The Chairman.*] There are two tents and four separate structures?—Yes.

127. You do not know what they are made of?—No; they look like iron.

128. *Mr. Skerrett.*] Colonel Purdy has informed us that the area occupied by tents amounted to about 4 acres?—Yes.

129. Was that area sufficient, in your opinion, for the accommodation of about three thousand men?—No; 4 acres is insufficient for a permanent camp.

130. You have considered the question of these huts or hutments?—Yes.

131. Do you know the date approximately when the first hutment was constructed?—In May, I think.

132. What have you to say with respect to those hutments?—I consider those hutments are quite wrong and faulty. I saw the sample hutment about the beginning of May.

133. What is the definition of a "hut"?—A hut is a building to contain usually not more than twelve men.

134. And a "hutment"?—Is to contain usually no more than twenty-four men.

135. What have you to say with reference to those hutments?—The hutment scheme as originally proposed I condemned at once, absolutely.

136. *The Chairman.*] Did you see it proposed in the newspaper?—Proposed in a statement by the Minister of Defence, reported in the newspapers.

137. Did you condemn it publicly?—I wrote to the Minister of Defence and to the Premier on the subject. The Minister of Defence has on many previous occasions consulted me on matters of sanitation and military matters. I wrote to him, "The hutment scheme as outlined in the Press for Trentham is simply absurd—quite impracticable and impossible from a health point of view."

138. What was the date of the letter?—That was a letter written to the Hon. the Minister on the 19th March. He was in doubt, and wanted information evidently about hutments. I wrote as follows: "The only difference between a camp of tents and one of hutments is that of the superstructure: the one, being meant to be movable, is light and is of canvas; the other, being intended to be more permanent, is heavy and rigid. A camp of tents is easily moved, but a camp of hutments cannot be. Hence arises the necessity for the very greatest care in selecting the site, planning the arrangements of the various buildings and every detail of the buildings themselves, all of which must be on tried and approved principles. Neglect of this led to much sickness in the American War. Seasoned troops, healthy in tents and bivouacs, were decimated by pneumonia on going into winter quarters of huts. I noticed also that sickness increased among the Canadian Forces at Home recently as soon as they went into hutments (or temporary shelters). In this day's paper (*Dominion*, 19th March) I notice that these temporary shelters are being replaced by buildings of brick, with cement floors. A camp of hutments also occupies a large space of ground. A plan which I have worked out for 4,500 men has a front of 700 yards, and covers 68 acres: but, then, it is at full intervals, with a wide main street, 3 chains; is entirely self-contained, with provision for everything—for headquarters staff, hospital, lecture-hall, large central parade-ground for ceremonial and other parades, Church service, &c., and a good system of drainage leading away from the camp in every direction. Each battalion or half-battalion unit is also self-contained in every detail, with its own kitchens, stores, baths, ablution-benches, clothes-drying and other sanitary arrangements. I am trying to see if I can compress this with safety into an area of 30 or 40 acres; but working single-handed, with the interruptions incidental to a general practice, it takes up much time early and late, but I hope to complete the plans shortly. In conclusion, I can only repeat that my services, assistance, plans, &c., are at your disposal at any time you may do me the honour to ask for them." I had all those plans prepared, but they turned them down, and I never forwarded them on.

139. Have you a plan of a hutment there?—Yes [produced]. Each of those hutments is to hold twenty-four men, and the interval between each building must be not less than the distance of twice the height from the ground to the eaves. [Diagram showing hutment with ridge ventilation, to hold twenty-four men produced.] The regulation intervals between beds and men sleeping is to be not less than 2 ft. In these hutments at Trentham the intervals between the men lying there are about 8 in. or 9 in.—they are too close together. Fifty men would be sleeping within 8 in. of one another. That is laid down in Firth's "Military Hygiene," 1909, at page 115. It is considered very wrong for the men to sleep on the floor, the reason being that the blankets get contaminated with the mud and dust from the boots and other germs on the floor.

140. But they sleep on straw?—The blankets get overlapping the straw.

141. Now, in regard to the ventilation?—Ventilation is a very important matter. The object of ventilation is to remove the air from a room without draught, and it is arrived at scientifically by knowing the amount of carbonic acid in the breath and the standard of purity of the air which is maintained by removing all the air in a room—removing it not more than three times in an hour. That can be done without causing a draught. Firth's "Military Hygiene," at pages 110 and 111, says, "Taking average adults moving about in a room, it is known that ten such persons will produce 6 cubic feet of carbonic acid in the hour over and above that normally present in the air; therefore, if we want to keep the air in that room of such a quality that it will not smell close and stuffy to any one coming in from the outside—that is, be decently ventilated—those ten persons must have 10,000 cubic feet of fresh air hourly, or 1,000 cubic feet each. If each person were in a space of 300 cubic feet this would involve the changing of the air of that space rather more than three times in the hour. Unless the incoming air were warm, this rapidity of change would probably cause a draught and corresponding discomfort. If the space be 600 cubic feet, the air need be changed less than